Resource Guide to the Arkansas Curriculum Framework for Students with Disabilities for Literacy, Mathematics, and Science

Summer 2006

Purpose and Process

The Individuals with Disabilities Education Act and No Child Left Behind mandates that schools provide access to the general education curriculum for all students receiving special education services. In recognizing the challenge of providing opportunities for students with disabilities to access general education curriculum, it is the desire of the Arkansas Department of Education to assist educators with this process. The goal is to assist school personnel who serve children with disabilities in conceptualizing, planning, and implementing activities that are aligned to the Arkansas Curriculum Framework.

The following document contains ideas for linking activities to the same literacy, mathematics, and science frameworks used for the general education curriculum. When selecting appropriate activities, decisions must be based on individual student needs and abilities. Collaboration with general education personnel will provide assistance in linking curriculum with the state framework. The Arkansas Alternate Portfolio Assessment must have alignment to the Arkansas Curriculum Frameworks for English Language Arts, Mathematics, and Science. The Alternate Portfolio Assessment for Students with Disabilities must align with the same content standards used by other students. The following are the strands used in each content area.

English Language Arts Curriculum Framework	Mathematics Curriculum Framework	Science Curriculum Framework
Oral and Visual Communications	Number and Operation	Life Science
Writing	Algebra	Physical Science
Reading	Geometry	Earth and Space Science
	Measurement	
	Data Analysis and Probability	

In June 2006, the Arkansas Department of Education convened a task force of general education English language arts, mathematics, and science teachers, teachers of students with disabilities and administrators to collaborate and develop the following resource guide to be used to help with the process of developing the resource guide for the Alternate Portfolio Assessment for Students with Disabilities.

This publication includes selected student learning expectations from the each of the above-mentioned Curriculum Frameworks. It also uses a matrix visual organizer to provide several sample activities that demonstrate alignment from least complex activities to more complex activities. Teachers on the committee discussed the specific student learning expectation to determine the basic learning needed to find the essence of the learning. Using the essence of the student learning expectation, different levels of complexity of the learning were written for students to have access to the same standards.

Although this publication is not intended for generating specific test item activities for the Arkansas Alternate Portfolio System for Students with Disabilities, its purpose is to provide educators in Arkansas with a process for determining alignment between models of education that have been to some extent separate. Using the activities as idea starters, the educators can then individualize and develop specific activities that align with the education program, demonstrate performance of skills, and document educational opportunities. The members of the committee do not intend this publication to be used as a checklist, a menu of alternate assessment “test activities or items”, or as IEP goals and objectives.

The following is a non-inclusive list of possible ways that students with disabilities access the curriculum.

Oral and Visual	Writing	Reading	Mathematics
Braille	Dictating	Books on CD	Abacus/Math Line
CCTV	Drawings	Change in text size, spacing, color	Alternative keyboard
Dictation software	Eye gaze	Computer	Calculators (with printout, large keys or display, talking)
Eye glasses/optical aids	Intellikeys	Logos	Enlarged math worksheets
Gestures/	Neo	Objects	Manipulatives
Large print materials	Paper/pencil	Pictures	Tactile/voice output measuring devices
Magnification devices	Pictures (glue)	Scanners	Talking watches/clocks
Point to poster	Pointing	Signing	Voice recognition software
Show a book/with verbal peer	Stamps	Signs	
Switches	Stickers	Tactile	
Technology (powerpoint)	Switches (choice making between two)	Talking electronic devices or software	
Voice output devices	Word cards/book/wall	Text	
Word processor	Word Processor		

Augmentative communication equipment and/or other adaptations should be used to make accommodations for students who require them to meet the student learning expectation (SLE). Teachers will have to use creativity in adapting the suggested activities to meet the student's individual needs. An attempt has been made to organize activities from Less Complex to More Complex, although this did not work well for every student learning expectation. These activities are a sampling of activities that may be used to meet the SLE.

COMMITTEE MEMBERS

General Educators	Special Educators
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Resource Guide to the Arkansas Curriculum Framework for Students with Disabilities for Literacy for Grades 3-8 and 11

Summer 2006

Standards

Oral and Visual Communications	
1. Speaking	Students shall demonstrate effective oral communication skills to express ideas and to present information.
2. Listening	Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.
3. Media Literacy	Students shall demonstrate knowledge and understanding of media as a mode of communication.
Writing	
4. Process	Students shall employ a wide range of strategies as they write, using the Writing process appropriately.
5. Purpose, Topics, Forms and Audiences	Students shall demonstrate competency in Writing for a variety of purposes, topics and audiences employing a wide range of forms.
6. Conventions	Students shall apply knowledge of Standard English conventions in written work.
7. Craftsmanship	Students shall develop personal style and voice as they approach the craftsmanship of Writing.
Reading	
8. Foundations of Reading	Students shall apply concepts of print, acquire knowledge of spoken words and understand the relationship of speech to print as they develop a foundation for literacy.
9. Comprehension	Students shall apply a variety of strategies to read and comprehend printed material.
10. Variety of text	Students shall read, examine, and respond to a wide range of texts for a variety of purposes.
11. Vocabulary, Word Study and Fluency	Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.
Inquiring/Researching	
12. Research/Inquiry Process	Students shall engage in inquiry and research to address questions, to make judgments about credibility, and to communicate ideas in ways that suit the purpose and audience.

*Each grade level continues to address earlier Student Learner Expectations as needed and as they apply to more difficult text.

Oral and Visual Communications	***Content Standard 1.*** Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.1.3.4 Focus on audience (i.e., gestures and body language)	Focus on audience	Make eye contact when spoken to (looks at speaker) Example: Respond to questions after listening to speaker and teacher or student will dictate response	Show appropriate posture (sits in appropriate manner) Example: Tell and show posture and how this helps the student to focus on the audience	Show appropriate gestures Example: Respond to a speaker's directive by responding with appropriate gestures and explaining what the gestures mean.	Show appropriate body language Example: Respond to questions after listening to speaker and teacher or student will dictate response
OV.1.3.12 Tell and retell stories in an informal storytelling format using descriptive language, story elements, and voice to create interest and mood	Tell and retell stories	Retell a story using pictures, symbols or communication devices	Tell an original story using pictures, symbols or communication devices	Retell a story orally with or without the use of pictures, symbols or communication devices	Retell a story orally with or without the use of pictures, symbols or communication devices
OV.1.3.13 Participate in a variety of speaking activities, including book talks	Participate in a variety speaking activities	Activate communication device at appropriate time for pledge, motto, affirmations, etc., with or without assistive technology.	Participate in read aloud or listen to the pledge, class motto, affirmations, etc., with or without assistive technology.	Participate in group or individual speaking activities such as reciting pledge, class motto, affirmations, etc., with or without assistive technology.	Participate in independent speaking activities such as reciting pledge, class motto, affirmations, etc., with or without assistive technology.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.3.1 Demonstrate active listening behaviors (i.e., appropriate feedback and contributions of relevant information)	Demonstrate active listening behaviors	Demonstrate active listening behaviors by facing the speaker, making eye contact, and/or maintaining attention, giving feedback using a communicative device, or by verbal communication.	Demonstrate active listening behaviors by listening to a story or activity on the computer/audio device and answering questions or responding to prompts.	Demonstrate active listening behaviors by listening to a story read aloud and responding orally or in writing, and/or with a communication device..	Demonstrate active listening behaviors by listening to a speaker and answering questions orally, written.
OV.2.3.4 Follow oral directions and monitor for clarity	Respond to oral directions in activities that are meaningful	Respond to one-step oral directions Example: Show recognition of name; “Come here, please.” “Look.” “Line up.”	Respond to two-step oral directions Example: “Go to the door and open it.” “Pick up your clothing and put it in the hamper.”)	Follow three-step oral directions Example: “Take the absentee slip off the door, take it to the office, and return to class”)	Respond to teacher directives by correctly completing worksheets or tasks
OV.2.3.5 Listen and respond to literature, including identifying the craftsmanship of the author.	Listen and respond to literature/print	Listen and respond to literature by facing the reader, displaying an emotional response, and maintaining attention	Listen to literature and respond by using pictures/objects to complete a worksheet	Listen to an activity or story read aloud and give oral or written response	Listen to an activity or story read aloud and responds either orally or by written response, or creating a related project.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.3.1 Use a variety of planning strategies/organizers	Use strategies to plan	Put together his/her daily schedule.	Use pictures to sequence events prior to writing: Example: Steps for hand washing, sequential dates, and/or organizing school events	Choose whether to buy or bring lunch on a given day by using pictures and a calendar Example: Help the student to plan for future days	Use a chart to indicate who, what, when, where, or how to detail a given event or story.
W.4.3.2 Focus on a central idea	Consider the central idea	Choose pictures that focus on the central idea of teacher read story or class discussion when presented with two objects or pictures.	Choose the central idea as related to a topic when given categories Example: If preparing to eat lunch, would you go to the cafeteria, library, or gym?	Draw or write about the central idea of a story after listening to a story	Decide on the central idea after listening to a class speaker and use the Internet to gather more information about the topic
W.4.3.5 Use available technology to collect information for writing	Use technology for writing	Choose appropriate picture to insert while creating a birthday card	Find pictures or additional information for a discussion topic on the Internet	Gather information about a given topic by emailing a friend	Gather information about attractions or local events by emailing the Chamber of Commerce of a given city or state

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.3.1 Write for a specific purpose and audience	Write for a specific purpose and audience	Choose pictures from a magazine or catalog to create a list. Example: Make a list for special events	Draw pictures from content specific text, with or without technology. Example: Draw a picture of cell, create a diagram or math chart	Copy various information with or without models Example: Copy personal data, schedules, spelling words, etc. using letters, technology, and/or word stamps.	Write or copy letters, notes, invitations, or numbers with or without models
W.5.3.2 Write to persuade, inform, entertain, and describe	Write for different purposes	Use pictures or symbols to write a sentence.	Choose pictures/clipart to include on the class website.	Write names on library card using a name stamp.	Write personal data on an application with or without models.
W.5.3.3 Write daily	Write daily	Write using pictures (i.e., picture recipes, shopping lists, daily schedules)	Write by tracing or using stamps, personal data, sentences, and words	Write word lists, schedules, grocery lists, personal data with models	Write word lists, schedules, persons data, grocery lists without models

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.3.10 Use correct spelling for high frequency words, including irregular plurals	Spell high frequency words correctly	Spell name(s) with or without models using letter manipulatives, stamps, or technology to correctly	Spell days of the week, months of the year with or without models using letter manipulatives, stamps, or technology	Spell important school words (i.e., cafeteria, library, art, etc.) and or classmates names, with or without models using writing tools	Spell environmental logos (i.e., restaurants, stores) functional words or survival words with or without models using writing tools
W.6.3.14 Use capital letters for emphasis	Use capital letter	Identify the correct capital letter by circling, pointing, or choosing	Identify the correct capital letter within a sentence using computer activities, games, and/or worksheets	Identify the correct capital letter within a sentence or paragraph using computer activities, games, and/or worksheets	Identify the correct capital letter within a passage using computer activities, games, and/or worksheets
W.6.3.17 Use simple abbreviations	Use simple abbreviations	Choose, point, or circle appropriate simple abbreviation in personal data with or without technology	Choose, point, or circle appropriate simple abbreviation Example: Mr., Mrs., Dr., Rd., St., etc. with or without technology	Choose, point, circle, or write appropriate simple abbreviation for days of the week and/or months of the year with or without technology	Choose, point, circle, or write appropriate simple abbreviation for state(s) with or without technology

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.3.3 Arrange steps in a logical sequence	Arrange steps in a logical sequence	Arrange pictures, shapes, letters, or objects in a sequence with or without models	Arrange simple steps of a recipe, schedule, etc. with or without models	Arrange words in a logical sequence to form a sentence with or without models	Arrange sentence strips in a logical sequence to form a paragraph with or without models
W.7.3.6 Apply new vocabulary and concepts from reading to writing	Use new vocabulary	Match pictures to words Example: Safety, shopping, warning, community, and/or environmental words with or without technology and/or models	Use weekly vocabulary words Example: Sight, safety, and/or community words using communicative devices or word stamps with or without models	Use weekly vocabulary words Example: Worksheets, computer activities, vocabulary games, and newspapers	Use weekly vocabulary words to apply vocabulary concepts Example: Worksheets, computer activities, vocabulary games, and newspapers

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.3.10 Organize information and events logically	Organize information logically	Arrange pictures, shapes, letters, or objects in a sequence with or without models	Arrange words in a logical sequence to form a sentence with or without models	Arrange sentence strips in a logical sequence to form a paragraph with or without models	Arrange simple steps of a recipe, schedule, etc. with or without models
R.9.3.12 Summarize a story	Summarize	Summarize the story using objects or pictures after listening to a story	Draw a picture to summarize the story after listening to a story read aloud or on the computer	Summarize the story using a computer, word stamps, writing tools, or communicative devices after listening to a story	Orally summarize the story to a peer after listening to a story on computer or read aloud
R.9.3.14 Follow directions encountered in functional texts	Follow functional directions	Follow a daily schedule using pictures	Use a picture recipe to make a sandwich	Follow directions for proper hand washing	Follow the directions using pictures or writing for the procedures of a fire drill

Reading	***Content Standard 1***0: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.3.1 Read daily	Read daily	Use pictures to read daily schedule Example: Ask the student what time he/she goes to the library; the student points to the correct time, answers orally, or uses communicative device	Use pictures to read environmental print Example: Respond by pointing or using communicative devices	Read text using assistive technology (i.e., talking books, voice output devices)	Read printed material from computer, Internet, newspaper, magazines, comics, book, etc. and share orally or written what was read
R.10.3.8 Read a variety of informational texts, including sequential formats	Read a variety of informational texts	Look through a book and share findings Example: Scavenger hunt that relates to text, etc.	Match the names of student's family members to their pictures	Read a class birthday chart to find out the birthdays for the month	Read a calendar to find upcoming school and/or family events
R.10.3.19 Use functional print, including recipes, menus, and maps, to accomplish tasks	Use functional print	Follow a daily schedule using pictures	Use a picture recipe to make a sandwich	Use a picture menu to select desired meal	Use school map to locate different areas or rooms of the campus

Reading	***Content Standard 1***1: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.3.8 Continue to develop sight word vocabulary, including reading words with irregularly spelled suffixes (i.e. –ous, -ion, -ive)	Continue to develop sight word vocabulary	Match pictures to words Example: Safety, warning, shopping, community, and/or environmental words with or without technology and/or models	Use weekly vocabulary words Examples: Sight, safety, and/or community words using communicative devices or word stamps with or without models	Use weekly vocabulary words Example: Worksheets, computer activities, vocabulary games, and newspapers	Use weekly vocabulary words to apply vocabulary concepts Example: Worksheets, computer activities, vocabulary games, and newspapers
R.11.3.9 Categorize words as nouns, action verbs, synonyms, and antonyms during discussions about words	Categorize words	Place pictures of nouns into the categories of person, place, or thing using the chalk board, worksheet, computer	Categorize nouns and action verbs given pictures of nouns and action verbs	Match synonyms given pictures or word cards	Play BINGO antonym game with peers

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.1.4.3 Focus on audience (i.e., appearance and facial expressions)	Focus on audience	Make eye contact when spoken to and look at speaker Example: Ask student question after listening to speaker and teacher or student will dictate response	Show appropriate posture Example: Sits in appropriate manner, (Note:tell about posture and how this helps the student to focus on the audience)	Show appropriate gestures Example: Respond to a speaker's directive by responding with appropriate gestures	Show appropriate body language Example: Ask student question after listening to speaker and teacher or student will dictate response
OV.1.4.10 Tell and retell stories in a formal storytelling format using descriptive language, story elements, and voice to create interest and mood	Tell and retell stories	Retell a story using pictures, with or without assistive technology.	Retell a story using pictures, with or without assistive technology.	Retell a story orally,with or without the use of pictures, with or without assistive technology.	Tell a story orally with or without the use of pictures, with or without assistive technology.
OV.1.4.11 Participate in a variety of speaking activities, including book reports	Participate in a variety speaking activities	Activate communication device at appropriate time such as pledge, motto, affirmations, etc.	Participate in group speaking activities such as recite pledge, class motto, affirmations, etc.	Participate in group or individual speaking activities such as recite pledge, class motto, affirmations, etc.	Independent speaking activities such as recite pledge, class motto, affirmations, etc.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.4.1 Demonstrate active listening behaviors (i.e., beginning note taking)	Demonstrate active listening behaviors	Demonstrate active listening behaviors by facing the speaker, making eye contact, and maintaining attention then giving feedback using communicative device or by verbal communication	Demonstrate active listening behaviors by listening to a story or activity on the computer/audio device and answering questions or responding to prompts	Demonstrate active listening behaviors by listening to a story read aloud and responding orally or in writing or with a communication device	Demonstrate active listening behaviors by listening to a speaker and answering questions either orally, written,
OV.2.4.3 Listen to understand, organize, and remember directions for doing tasks and assignments	Respond to oral directions	Respond to one-step oral directions Example: Show recognition of name; "Come here, please." "Look." "Line up."	Respond to two-step oral directions Example: "Go to the door and open it." "Pick up your clothing and put it in the hamper."	Follow three-step oral directions Example: "Take the absentee slip off the door, take it to the office, and return to class."	Respond to teacher directives by correctly completing worksheets or tasks
OV.2.4.4 Listen and respond to literature, including inferring underlying themes or messages	Listen and respond to literature/print	Listen and respond to literature by facing the reader, displaying an emotional response, and maintaining attention Example: After listening to the story, respond to the literature using a communication mode to answer the question: "How did the story make you feel?"	Listen to literature and respond by using pictures/objects to complete a worksheet	Listen to an activity or story read aloud and give oral or written response	Listen to an activity or stories read aloud and respond orally, by written response, or by creating a related project.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.4.1 Organize writing to convey central idea	Use organizational skills in writing to convey central idea	Put together daily schedule.	Use pictures to sequence events prior to writing: Example: Steps for hand washing, sequential dates, organizing school events	Use pictures and a calendar to choose whether or not to buy or bring lunch on a given day. (This helps the student to plan for future days).	Use a chart to indicate who, what, when, where, or how to detail a given event or story.
W.4.4.2 Focus on one aspect of a topic	Consider the main idea	Listen to a story or class discussion and choose between two objects or pictures as an aspect of the topic of the story or discussion	When given a topic, choose an aspect related to that topic Example: If preparing to eat lunch, would you go to the cafeteria, library, or gym?	Listen to a story and draw or write about an aspect of the topic.	Listen to a class speaker and choose one aspect of the topic and use the Internet to gather more information about the topic.
W.4.4.4 Use available technology to collect information for writing	Use technology for writing	Create a birthday card and choose appropriate picture to insert in card.	Find pictures or additional information on the Internet for a discussion topic.	Email a friend to gather information about a given topic.	Email the Chamber of Commerce of a given city to gather information about attractions or local events.

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.4.1 Write for a general audience (i.e., newspaper and website, etc.)	Write for a general audience	Use pictures or symbols to write a sentence	Choose pictures/clipart to include on the class website	Write name on library card using a name stamp	Write personal data on an application with or without models
W.5.4.2 Write to define, clarify, develop ideas, and express creativity	Write for different purposes	Glue pictures that are based on a story using teacher prepared pictures for expressing what the story is about	Use pictures to tell what took place in school or at home.	Copy various information with or without models Example: Personal data, schedules, spelling words, etc., using letters, word stamps and/or technology	Write or copy letters, notes, invitations, or numbers with or without models
W.5.4.4 Write daily	Write daily	Write using pictures Example: Picture recipes, shopping lists, daily schedules	Write by tracing or using stamps, personal data, sentences, and words	Write word lists, schedules, grocery lists, personal data with models	Write word lists, schedules, personal data, grocery lists without models

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.4.13 Demonstrate accurate use of capital letters	Demonstrate capital letters	Identify the correct capital letter by circling, pointing, choosing, or using a communicative device.	Identify the correct capital letter within a sentence using computer activities, games and/or worksheets	Identify the correct capital letter within a sentence or paragraph using computer activities, games, and/or worksheets	Identify the correct capital letter within a passage using computer activities, games, and/or worksheets.
W.6.4.20 Format writing appropriately according to audience, purpose, and form	Format writing according to audience	Match to sample, personal information, using sentence strips. Example: Name to name	Copy an address on an envelope to mail a card using a visual model	Copy various types of information with or without models Example: Personal data, schedules, spelling words, etc. using letters, technology, and/or word stamps	Write or copy letters, notes, invitations, or numbers with or without models

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.4.2 Use logical sequence	Use logical sequence	Arrange pictures, shapes, letters, or objects in a sequence with or without models	Arrange simple steps of a recipe, schedule, etc. with or without models	Arrange words in a logical sequence to form a sentence with or without models	Arrange sentence strips in a logical sequence to form a paragraph with or without models
W.7.4.4 Describe characters and setting	Describe characters and setting	Identify characters using pictures with or without technology	Identify the setting using pictures with or without technology	Describe the characters through drawing	Describe the setting through drawing Example: Use a chart to describe the setting in a story using words or pictures.
W.7.4.6 Use purposeful vocabulary	Use purposeful vocabulary	Match pictures to words Example: Safety, warning, shopping, community, and/or environmental words with or without technology and/or models	Use weekly vocabulary words Example: Sight and community words using communicative devices or word stamps with or without models	Use weekly vocabulary words Example: Worksheets, computer activities, vocabulary games, and newspapers	Use weekly vocabulary words to apply vocabulary concepts Example: Worksheets, computer activities, vocabulary games, and newspapers

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.4.6 Use additional resources to support answers to questions formulated before, during, and after reading.	Use resources to support answers to questions	Answer questions after the reading activity using a switch, communication device, verbally or through choice making.	Answer questions before and after the reading activity using a chart or visual aid Example: Given a picture of the middle of the story, what would come before this event and after this event?	Answer questions before, during and after the reading activity using technology	Answer questions before, during, and after the reading activity using newspapers, magazines, comics, book, etc.
R.9.4.11 Read a text for a variety of purposes	Read for a variety of purposes	Read the daily schedule using pictures Example: Ask the student what time he/she goes to the library and student points to the correct time.	Read environmental print using pictures Example: Respond by pointing or using communicative devices	Read text using assistive technology (i.e., talking books, voice output devices) and respond to follow-up questions	Read printed material from computer, Internet, newspaper, magazine, comics, book, etc. and share orally or through writing what they have read.
R.9.4.12 Summarize content of selection, identifying important ideas and providing details for each important idea	Summarize selections	Summarize the story using objects or pictures after listening to a story	Summarize by drawing a picture after listening to a story read aloud or on the computer	Write to summarize the story using a computer, word stamps, writing tools, or communicative devices, after listening to a story,	Orally summarize the story to a peer, after listening to a story on computer or read aloud, orally

Reading	***Content Standard 10***: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.4.1 Read daily	Read daily	Read using pictures or word cards and technology or communicative devices to answer questions	Read a book and answer questions about the book using technology or communication devices	Read a magazine or catalog and answer questions about the book using technology or communication devices	Read a newspaper or the comics and answer questions about the book using technology or communication devices
R.10.4.8 Read a variety of informational texts, including comparative formats	Read a variety of text	Look through a book and share findings Example: Scavenger hunt that relates to text, etc.	Match the names of student's family member to their pictures	Read a class birthday chart to find out the birthdays for the month	Read a calendar to find upcoming school and/or family events
R.10.4.11 Read a variety of stories, mysteries, and realistic fiction	Read a variety of stories	Read stories and answer questions using pictures Example: Read with or without technology and/or communicative devices.	Read stories and answer questions Example: Read with or without technology and/or communicative devices.	Use pictures to read mystery and/or realistic stories and answer questions Example: Read with or without technology and/or communicative devices.	Read mystery and/or realistic stories and answer questions. Example: Read with or without technology and/or communicative devices.

Reading	***Content Standard 11***: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.4.1 Use context clues to determine the precise meaning of new words	Use context clues to determine meaning of new words	Identify the meaning of antonyms Example: Using pictures/objects, answer questions by pointing, choosing, or using a communicative device	Identify the meaning of synonyms Example: Using pictures/objects answer questions by pointing, choosing, or using a communicative device	Identify the meaning of antonyms Example: Worksheets, technology or communicative device	Identify the meaning of synonyms and homonyms Example: Worksheets, technology or communicative device
R.11.4.8 Add content words to sight words	Add content words to sight words	Match objects or pictures to object/picture word cards Example: Safety, warning, shopping, community, and/or environmental nouns or verbs with or without models	Use weekly vocabulary words Example: Sight, safety, and/or community words using communicative device or word stamps with or without models	Use weekly vocabulary words Example: Worksheets, computer activities, vocabulary games, and newspapers	Use weekly vocabulary words to apply vocabulary concepts Example: Worksheets, computer activities, vocabulary games, and newspapers
R.11.4.9 Use word-reference materials, including the glossary, dictionary, and thesaurus, to make meaning of unknown words.	Use reference materials to make meaning known.	Given two different objects/pictures select the appropriate item to match the vocabulary words.	Use a picture dictionary to make choices. Example: Alphabet activities- match the letter to appropriate picture	Place names by the required job for the day using a classroom job chart, (The job chart serves as a dictionary and glossary).	Write sentences that incorporate new vocabulary using a word wall, which serves as a glossary

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV 1.5.1. Develop vocabulary from content area texts	Develop content area vocabulary	Identify/ choose words associated with personal information. Example: Name, address, other personal information.	Identify/categorize words associated with specific lists. Example: Words associated with home, words associated with school	Identify/match written words to pictures and/or objects. Example: "apple" to an apple or picture of an apple.	Identify/match words associated with specific content and reading vocabulary.
OV 1.5.3. Use appropriate oral communication for various purposes and audiences.	Share information with others	Express a request. Example: Eat, drink, move etc.	Express a request in complete sentences/thoughts either dictated or self-composed. Example: I need to go to the cafeteria	Initiate and participate in an informal conversation with adults. Example: Tell the teacher about a family event. Example: Measured by teacher-written dictation or video and/ or audio recording of the student's conversation	Present an oral presentation to the class using some complete thoughts. Example: Participates in an appropriate "Show and Tell" activity. Example: Measured by teacher-written dictation, video, audio recording of the student's conversation

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV 1.5.8 Use illustrations, pictures, and/or charts in oral presentations across the curriculum.	Share information with others using a variety of visual aids.	Identify/choose from two dissimilar visual aids to communicate a response or information. Example: Using objects and/or pictures choose between junk food or healthy food when prompted.	Identify/choose from two similar visual aids to communicate a response or information. Example: Using objects and/or pictures choose between a black car or a white car when prompted.	Prepare a chart related to a specifically teacher-chosen topic in order to convey information about that topic. Explain the chart. Example: Make a chart of sports, foods, tools, etc.	Locate a variety of pictures, objects and illustrations to present information or a story about a self-chosen topic. Example: Locate a variety of pictures of farm animals and dictate a story about what the animals do on the farm.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV 2.5.1 Demonstrate effective listening skills by exhibiting appropriate body language.	Demonstrate effective listening skills.	Demonstrate attentive listening by sitting and focusing on the speaker. Example: Measure using teacher-generated rubric of appropriate listening behaviors that have been shared with the student	Demonstrate attentive listening by asking questions of interest based upon the speaker's topic. Example: Measure using audio and/or video recording or dictation	Demonstrate attentive listening by creating/identifying a product based upon the speaker's topic. Example: Draw a picture of one thing about which the speaker spoke.	Demonstrate attentive listening by using note-taking skills to express ideas about which the speaker spoke. Example: Choose pictures or objects that relate to the topic or create a dictated word bank that relates to the topic.
OV 2.5.3 Listen attentively for main ideas.	Listen for details.	Identify one detail from a speaker's topic, oral reading, or video presentation. Example: Measure using a picture, drawing, object and/or word	Indicate two to four specific details about a speaker's topic. Example: Measure using pictures, illustrations, objects and/or words	Sequence a series of main ideas about a speaker's topic using teacher-generated word or sentence banks.	List/identify the specific details of a main idea (topic). Example: Ask the student to tell about the items on the daily schedule.
OV 2.5.5 Evaluate presentations using established criteria/rubrics.	Evaluate oral and/or visual presentations.	Listen appropriately and respond to a topical rubric developed by the teacher.	As a class respond to a student-focused presentation using a teacher-generated rubric for evaluation.	Respond appropriately and evaluate a presentation by a peer using a rubric developed by the teacher.	Respond appropriately and independently to a teacher-generated topical rubric. Example: Generate a list of essential criteria to be used to evaluate a speaker's presentation.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.5.1 Generate ideas using such strategies as reading, discussing, focused free writing, observing and brainstorming.	Learning to use a variety of writing processes.	Generate, with assistance, a list of personal experiences. Example: Use a home to school journal to record school and family activities.	Brainstorm, with assistance, a list of ideas on a particular topic. Example: Create a list of the people in your family.	Develop a list of ideas related to a given topic. Example: Identify various ideas related to summer vacation.	Based upon observation during reading, identify the who, what and when of the story.
W. 4.5.2 Organize ideas by using such graphic organizers as webbing, mapping and formal outlining with main topics.	Organize ideas by using graphic organizers.	Categorize/organize a list based upon a specific topic. Example: Identify the pictures of shapes, numerals, things seen at home, things seen in the classroom, and/or occupations.	Develop, with assistance, a word web based upon specific topic Example: Place pictures, objects or words with shape names around the central idea of "shapes."	Develop a chart on a teacher-identified topic (after it has been modeled by the teacher).	Generate a list of items/ideas related to a topic and choose either a chart or word web to demonstrate those items/ideas.
W.4.5.5 Use prewriting to draft expository paragraphs within an essay with emphasis on the following: • Central idea • Explanation • Elaboration • Unity • Purpose and audience	Draft an expository paragraph.	Select a topic from the list generated in 4.5.2 and dictate ideas related to that topic. Example: Identify occupations of members of the family. (teacher, fireman)	Dictate sentences related to the previously selected topic. Example: My mother is a fireman.	Organize and elaborate on the ideas related to a previously selected topic. Example: Identify the items on the daily schedule and tell what will be done and when.	Draft a paragraph of 3 to 5 sentences on the previously selected topic.

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.5.3 Create expository, narrative, descriptive and persuasive writings.	Write a paragraph.	Sequence pictures to tell a story.	Dictate sentences that tell a story.	Write sentences that tell a story.	Organize and write in a sequential order 3 to 5 sentences that tell a story.
W.5.5.9 Write on demand with or without a prompt within a given time frame.	Write on demand within a given time frame.	From two objects or pictures choose one and dictate a sentence about that object or picture.	Using the previously chosen object or picture, dictate two sentences about that object or picture.	Add 2-3 detail sentences to the previously dictated sentences.	Organize sentence strips of the previously dictated sentences into a logical sequence.
W.5.5.10 Write across the curriculum.	Write across the curriculum.	Identify/select the correct picture or symbol, etc. that relates to a specific content area. Example: Choose the triangle from shapes associated with math.	Identify/select two correct pictures or symbols that relate to a specific content area. Example: Choose the + and the – signs as symbols of mathematics.	Dictate two sentences that relate to the specific content area. Example: Use the + to add numbers. Use the – to subtract numbers.	Select from 3 or more sentences those that relate to the specific content area and omitting those that do not relate.

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.5.1 Use a variety of simple and compound sentences of varied lengths.	Write a simple sentence.	From 3 or more simple sentences choose those that relate to a specific topic (picture, object, etc.)	Dictate a simple sentence about a specific topic (picture, object, etc.).	Using word cards made from the previously dictated sentence, sequence the words in correct order.	Write two simple sentences about a specific topic. Using word cards made from these sentences, sequence the words in the correct order.
W.6.5.10 Apply conventional rules of capitalization in writing.	Begin a sentence or word with a capital letter.	Identify the capitalized word or sentence. Example: Dave or dave, Which is the capital word?	Identify the capitalized word or sentence. Example: Common noun vs proper noun	Rewrite the first letter of a word in a sentence as a capital letter	Create a complete sentence using correct capitalization. Example: Multiple words in sentence requiring capitalizaion
W.6.5.11 Apply conventional rules of punctuation in writing with the emphasis on • End marks • Quotation marks • Commas in a series • Comma in a compound sentence • Comma in a complex sentence • Comma in direct address	Select the correct ending punctuation mark.	When prompted, identify the requested ending punctuation mark. Example: Identify the correct punctuation mark. “Show me the period.”	Using picture prompts, choose the correct ending punctuation mark for declarative, interrogative and exclamatory sentences.	Write the correct ending punctuation for previously written declarative, interrogative and exclamatory sentences.	Write a complete sentence using the correct ending punctuation mark with or without a model.

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.5.2 Use a variety of sentence types and lengths (see Conventions Standard 6).	Use a variety of sentence types and lengths.	Choose a noun picture and a verb picture to create a two-word simple sentence. Example: Dogs bark.	Correctly match pictures to simple sentences that tell about them. Example: The dogs bark loudly. (Match to a picture of barking dogs.)	Dictate a simple declarative and a simple interrogative sentence. Example: Dogs bark. Why?	Expand a subject-verb declarative sentence to include modifying words. Example: The dogs bark every day.
W.7.5.4 Use purposeful vocabulary for emphasis or elaboration.	Use practical /purposeful vocabulary.	Identify vocabulary (pictures, objects, illustrations) relating to the daily schedule	Identify vocabulary (pictures, objects, illustrations, words) related to items needed for a recipe.	Identify vocabulary related to personal information (name, address, phone number).	Identify vocabulary appropriate to content areas, categories, etc. Example: Identify the vocabulary related to classroom jobs.
W.7.5.6 Use logical sequence	Use logical sequence	Given the daily schedule, identify what comes first, Example: Are you going to brush your teeth before or after you eat?	Given the daily schedule, identify what comes next.	Given the daily schedule, identify what comes last.	Given the daily schedule, identify using a three-step process what comes first, next and last.

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.5.6 Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text.	Relate personal experiences and background to information in text.	Respond to a home to school journal that relates daily activities, family events, etc. (dictated) Example: Parents will write sentences dictated by the student about a trip to the zoo and discuss/relate this information to the teacher and/or class.	Respond to pictures in print advertisements, catalogs, etc. by discussing and/or writing personal connections related to those Example: Upon seeing a picture of a container of ice cream, identify and/or write about favorite flavor of ice cream.	Respond to a book about a topic (jobs, pets, etc.) with personal connections Example: After reading a story about farm animals, identify and/or write about those farm animals seen in person.	Dictate sentences in response to a photo(s) journal (school, home, church, etc.) Example: Upon seeing a picture of his or her school, compose 3-4 sentences that relate information about the school.
R.9.5.8 Analyze literary elements of character, plot, and setting.	Tell about the characters, the setting and one or more events of a story.	Upon reading a story, identify the major character(s).	Upon reading a story, identify the setting (time and place) of the story.	Upon reading a story, identify events at the beginning, the middle and end of the story.	Upon reading a story, identify the major characters (who), the setting (when and where) and the plot (what happened) of the story.
R.9.5.12 Identify main ideas and supporting evidence in short Reading passages.	Identify main ideas or details	Identify the main idea of a simple sentence. Example: Choose a picture of a red apple from pictures that are red or black,	Identify the main idea from a short paragraph of two sentences.	Identify the main idea from a paragraph of three sentences.	Identify the main idea of a simple passage.

Reading	***Content Standard 1***0: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.5.1 Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels	Read for a substantial amount of time on a daily basis	Read daily using an assistive device such as a book on tape or cd	Read a self-selected book or piece of text daily	Read a piece of text or book daily with a peer	Read daily a piece of text on an appropriate level and include self-selected text as well as content area text selected by the teacher
R.10.5.6 Skim materials to locate specific information	Skim reading materials to find information	Skim pictures and/or objects to locate the requested items	Skim for the highlighted text (picture, graphic, object)	Skim for the bold text (picture, graphic, object)	Using a computer, skim for items such as games or other internet categories
R.10.5.13 Read and utilize functional/practical texts, including catalogs, schedules and diagrams	Read functional and practical texts	The student will read and respond to prompts regarding the daily schedule	Read and respond to prompts regarding the sequence of steps in a recipe	Read and respond to prompts regarding items in a catalog (making a list, etc.)	Read and respond to prompts regarding a menu (picture or printed)

Reading	***Content Standard 1***1: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.5.1 Automatically decode words to ensure focus on comprehension.	Decode for comprehension	Decode items on a daily schedule. Example: Point to when you go to lunch, etc.	Decode pictures of familiar people and respond appropriately. Example: Point to the picture of your brother.	Decode pictures of objects or words regarding recreational items and make a choice. Example: Which do you like best, the tricycle or the bicycle?	Decode pictures, words or objects regarding safety signs and respond to the appropriate meaning. Example: Which sign means "Stop?"
R.11.5.2 Continue to develop and maintain an adequate body of sight words.	Extend body of sight words.	Match pictures or objects to items in a recipe. Example: Match the egg to the word "egg" in the recipe.	Match pictures of school-related activities to the word. Example: Match a picture of the central office to the word "office."	Identify words associated with personal information. Example: Match the words "phone number" with the student's phone number.	Match a variety of pictures to sight words on a word wall or word journal.
R.11.5.7 Determine useful and relevant words.	Determine useful and relevant words.	Identify words associated with items in the classroom. Example: Match the word "desk" to a desk.	Identify words associated with people. Example: Match the word "nurse" to a picture of a nurse.	Identify words associated with personal information. Example: Match the words of the student's address to that address.	Identify words associated with content-relevant words. Example: Match the name of an animal to a picture of that animal.

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
OV.1.6.1 Develop vocabulary from content area text and personal reading	Develop content and personal vocabulary.	Develop vocabulary specific to content area by matching word to definition Example: Choose correct word/picture to match definition.	Identify name from list of names. Example: Match to sample	Match word to object, text, or picture	Categorize subject vocabulary. Example: Activities of daily living, food words, school activities, jobs, etc.
OV.1.6.3 Use appropriate oral communication for various purposes and audiences	Use appropriate oral communica-tion for specific purpose/audi ence.	Share information with others. Example: Draw a picture of information shared. Teacher dictate into device: Sandy said, "I want to tell you about my weekend."	Make a request to communicate a desire.	Initiate and participate in conversation with peers. Example: Conversation is taped and scripted by teacher	Create visual aid for class presentation Example: Powerpoint (talking book), switch, communication device, etc.)
OV.1.6.8 Use a variety of visual aids in oral presentations across the curriculum	Use a variety of visual aids for presentation purpose.	Choose between activities to select completed activities. Example: Select, using an object/picture as visual aid, from choice of dominoes or reading a book, soccer or tennis in PE., paint or crayons in art, etc.	Create a chart of favorite activities and present to class. Example: Poster, collage, banners, scrapbook, etc.	Create a big book for presentation to a younger class.	Create props to tell a story. Example: Puppets, backdrops, etc.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.6.1 Demonstrate effective listening skills by exhibiting appropriate body language	Demonstrate effective listening skills.	Listen attentively and respond to teacher-generated questions by answering selecting correct answer.	Listening to a speaker and generate questions of interest. Example: Teacher/student write down questions asked, audio, video, etc.	Listen to speaker's presentation and find additional information on Internet.	Demonstrate listening skills by taking notes during presentation. Example: Pictures provided by teacher, pictures drawn by student, word bank, document created from notes (forest, tree, bear, stream)
OV.2.6.3 Listen attentively for main ideas and detail.	Listen attentively for a purpose	Listen to the daily lunch menu and choose preferred items. Example: White or chocolate milk, juice or water, corn dog or pizza	Listen for instructions during a fire drill. Example: Show understanding by going to designated area	Listen for instructions during a tornado drill. Example: Show understanding by going to designated area	Listen for instructions for appropriate behavior for school assemblies. Example: Raise hand for asking a question, clapping hands at appropriate time, laughing at appropriate time, etc.
OV.2.6.5 Evaluate presentations using established criteria/rubrics	Evaluate presentations.	Listen appropriately and respond to a topical rubric presented by the teacher. Example: Did you like the story? Was this story about a good or a bad person? etc	As a class, respond to a student-focused presentation and use a teacher rubric to evaluate.	Listen to peer presentation and complete a rubric evaluating peer presentation.	Established questions to evaluate an invited speaker's performance using a list of criteria that is essential characteristics of a speaker.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.6.1 Generate ideas using such strategies as reading, discussing, focused free-writing, observing, brainstorming and reading logs	Generate ideas using reading, discussion, observation, brainstorming	Given a story starter, generate a list of ideas.	Following a nature walk, observe nature and generate a list of things observed.	Keep a reading log of ideas learned from reading.	Using a topic from reading log, participate in focused-free writing.
W.4.6.2 Organize ideas by using such graphic organizers as webbing, mapping, charts/graphs, and formal outlining with main topics and sub-topics	Organize ideas using graphic organizers.	Organize daily schedule using a chart.	Identify specific locations using a map Example: School map, grocery store, playground, library, etc.	Arrange information in a simple outline by main idea. Example: Develop simple outline of class pets and home pets, things in room and things in library, etc.	Arrange information in a simple outline by main topic and sub-topic Example: Student items/ teacher items in classroom, classroom library/school library
W.4.6.5 Use prewriting to draft expository paragraphs with emphasis on the following: Central Idea • Explanation • Elaboration • Unity • Purpose and Audience	Write expository sentences or paragraph.	Select the picture that represents the central idea from an expository sentence. Example: Picture of fire, volcano	Write, as a group, an expository sentence about selected topic. Example: Using a teacher created worksheet with word bank, select the correct word to complete a sentence. Volcanoes are ____.	Organize ideas related to selected topic. Example: Teacher will give sentences and student will arrange sentences in order.	Write expository sentence on selected topic.

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.6.3 Write expository, narrative, descriptive, and persuasive writings	Write a paragraph using 1 or more sentences	Sequence two or three pictures to tell story	Dictate story.	Write sentences about story.	Organize sentences in to paragraph.
W.5.6.9 Write on demand with or without prompt within a given time frame	Write on demand on given topic	Write a sentence from choice of two objects on specified topic.	Write two sentences on specific topic.	Write three sentences on specified topic.	Write sentence on chosen topic.
W.5.6.10 Write across the curriculum	Write across the curriculum.	Choose correct picture/symbol from desired content.	Choose from two sentences the sentence that supports the content.	Write a sentence from content area.	Write short paragraph on given topic.

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.6.1 Use a variety of simple and compound sentences of varied lengths	Write a simple or compound sentence	Choose a simple sentence that relates to picture	Dictate a simple sentence	Arrange words to form a simple sentence. Example: Use a cut up sentence strip.	Write a simple sentence.
W.6.6.10 Apply conventional rules of capitalization in writing	Begin a sentence and/or words with a capital letter.	Recognize the difference between uppercase and lowercase letters and identify each. Example: Choose the capital letter. A/a, A/P	Identify word beginning with capital letter in a sentence. Example: Circle the word that begins with a capital letter. The dog ran to the boy.	Look at identical words and select capital letter Example: Circle the word that begins with a capital letter. november or November	Use a capital letter to begin a sentence.
W.6.6.11 Apply conventional rules of punctuation in writing with emphasis on • End marks • Quotation marks • Comma in a series • Comma in compound sentences • Comma in complex sentences • Comma in direct address	Apply ending punctuation.	Show requested punctuation mark	Add mark punctuation to sentences.	Choose correct punctuation mark for sentence	Write a sentence with ending punctuation

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.6.2 Use a variety of sentence types and lengths (See Conventions Standard 6)	Use a variety of sentence types and/or lengths.	Write a two-word sentence. Example: Select pictures of noun and verb. Then write/dictate sentence.	Use word cards to create sentences.	Dictate sentences of various lengths and types.	Develop declarative sentences of various lengths and types.
W.7.6.5 Use purposeful vocabulary with emphasis on developing style	Use purposeful vocabulary.	Identify items for a grocery list based on a recipe.	Identify vocabulary needed for daily schedule.	Develop vocabulary for personal information.	Identify vocabulary for content area.
W.7.6.8 Use writer's checklist or scoring guides/rubrics to improve written work	Use writer's checklist.	Using writer's checklist, the student will review written work. Example: Did you begin your sentence with a capital letter?	Use writer's checklist for written work. Example: Did you begin your sentence with a capital letter? Did you end your sentence with a period?	Use writer's checklist for written work. Example: Do you have a person, place or thing in your sentence?	Use writer's checklist for written work. Example: Do you have a person, place or thing and an action word in your sentence?

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.6.6 Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text	Make connections to activity or text.	Relate family events and school activities Example: Parent or teacher writes information in a home to school journal.	Respond to pictures, advertising, etc to write personal connection	Respond to a book with personal connection	Dictate sentences in response to a photo journal Example: Parent or teacher writes information in a home to school journal.
R.9.6.8 Analyze literary elements of character, plot, and setting	Apply terms of character, plot and/or setting to passage	Answer questions about character from a reading passage	Answer questions about character and setting from a reading passage	Answer questions about plot from a reading passage	Answer questions about character, plot and setting from a reading passage
R.9.6.12 Identify main ideas and supporting evidence in short reading passages	Identify main idea or details.	Identify the main idea of a simple sentence. Example: Student chooses a picture of a red apple from a picture of red or blue apple	Select the main idea of a text. Example: Work in pairs to look at pictures and discuss what they have in common and decide on a main idea for each set of pictures	Identify who, what, when, where, and why from a short reading passage. Example: Trace his hand. Label each finger with who, what, when, where, why and write the answer to each question.	Identify the main idea and supporting details. Example: Trace his hand. In the palm write the main idea. On the thumb, write the topic sentence. Write supporting details on each finger.

Reading	***Content Standard 1***0: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.6.1 Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels	Read for a substantial amount of time each day.	Read using a book on tape, CD, I-POD, MP3 Player, etc.	Read self-selected book during DEAR, SSR, etc.	Read a piece of text with a peer	Read text independently on an appropriate level.
R.10.6.5 Compare /contrast information from multiple sources	Use skimming and/or scanning to locate specific information.	Skim pictures/objects to find requested item.	Skim shelf to find object. Example: Skim game shelf to locate specific game. Skim grocery shelf for specific item from list.	Skim a brief written passage to locate a single specified word in a passage	Skim a brief written passage to locate a specified word as it appears throughout the passage
R.10.6.13 Read and utilize functional/*practical text*s, including advertisements, slogans, brochures, and timelines .	Read and utilize functional text	Read menu and place order. Example: School lunch menu, cafeteria	Read and follow the steps in a recipe.	Read and follow the steps in a recipe and fill in missing directive words	Complete a menu by filling in missing menu items

Reading	***Content Standard 1***1: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.6.1 Automatically decode words to ensure focus on comprehension	Automatically recognize words to comprehend the written material.	Organize daily schedule	Decode pictures of familiar people and respond appropriately Examples: Use a picture of Mom/Dad as a reminder of who is picking me up today. Use a picture of food as a reminder that for lunch today, I want a cheeseburger/ chicken sandwich.	Match word to object to locate specific information. Example: Match a picture from recipe to the item.	Read a passage and illustrate what was read. Example: After reading the sentence “The apple is red.” the student will show a picture of a red apple.
R.11.6.2 To continue to develop and maintain an adequate body of sight words	Identify sight words.	Recognize name in print	Recognize items needed for personal hygiene. Example: Brushing teeth, taking a bath/shower	Match a variety of pictures to sight words in a word journal or on word wall	Recognize words/pictures needed for schedule Example: Today is O.T. Which is the O.T. card? Are you having art or music today?
R.11.6.7 Determine useful and relevant words	Know useful and relevant words.	Given a list of words or pictures, identify items needed for a specific class Example: Science class -book, lab notebook, journal	Identify words needed to complete a form Example: Calendar of events, schedule, student identification sheet	Answer questions concerning the environment Example: Use a sign, gesture, object, picture, word to locate different areas in classroom	Develop personal telephone book. Example: Write the telephone number of important people in his/her life in a picture phone book.

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.1.7.1 Develop vocabulary from content area texts and personal reading	Develop content and personal vocabulary.	Develop vocabulary specific to content area by matching word to definition Example: Choose correct word/picture to match definition.	Identify name from list of names. Example: Match to sample	Match word to object, text, or picture	Categorize subject vocabulary. Example: Activities of daily living, food words, school activities, jobs, etc.
OV.1.7.3 Speak for and to various purposes and audiences	Use appropriate oral communica-tion a variety of purposes/audience.	Student shares information with other. Example: Draw a picture of information shared. Teacher dictate into device: Sandy said, "I want to tell you about my weekend."	Make a request to communicate a desire.	Initiate and participate in conversation with peers. Example: Conversation is taped and scripted by teacher	Present information (book talk, report, project, etc.) to class using a visual aid Example: Power Point (talking book, switch, communication device, etc.)
OV.1.7.8 Use a variety of visual aids in oral presentations across the curriculum	Use a variety of visual aids for presentation.	Choose between activities to select completed activities. Example: Using an object/picture as visual aid, select from choice of dominoes or Reading a book, soccer or tennis in p.e., paint or crayons in art, etc.	Create a chart of favorite activities and present to class. Example: Poster, collage, banners, etc.	Create a big book story for presentation to a younger class.	Create props to tell a story. Example: Puppets, backdrops, etc.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.7.1 Demonstrate effective listening skills by exhibiting appropriate body language	Demonstrate effective listening skills.	Listen attentively and respond to teacher-generated questions by selecting the correct answer.	Listen to a speaker, video or audio presentation and generate questions of interest.	Listen to a speaker's presentation and find additional information on Internet.	Take notes during presentation. Example: Pictures provided by teacher, pictures drawn by student, word bank, document created from notes (forest, tree, bear, stream)
OV.2.7.3 Listen attentively for main ideas, details, and organization	Listen attentively for main ideas/details.	The student will listen to the daily lunch menu and choose preferred items. Example: White or chocolate milk, juice or water, corn dog or pizza	Listen for instructions during a fire drill. Example: Show understanding by going to designated area	Listen for instructions during a tornado drill. Example: Show understanding by going to designated area	Listen for instructions for appropriate behavior for school assemblies. Example: Raise hand to ask a question, clap hands at appropriate time, laugh at appropriate time, etc.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.7.5 Evaluate presentations using established criteria/rubrics (e.g., purpose, content, organization and delivery)	Evaluate presentations.	Listen appropriately and respond to a topical rubric presented by the teacher. Example: Following the presentation, the teacher asks the student questions: Did you like the story? Was this story about a good or bad person? Etc	As a class, complete a teacher-generated rubric to evaluate a student presentation.	Listen to peer presentation and complete a teacher-generated rubric evaluating the presentation.	Generate a list of questions to be used to evaluate a speaker's presentation. Example: Invite a speaker to the class and have the students use the established questions to evaluate the speaker'sperformance .

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.7.1 Generate ideas by selecting and applying appropriate prewriting strategies which shall include reading, discussing, observing, brainstorming, focused and unfocused free-writing, and reading/ learning logs	Generate ideas by using prewriting strategies.	Given a story starter (picture, object, illustration or sentence) generate a list of ideas.	Following a nature walk, observe nature and generate a list of things observed.	Keep a reading log of ideas learned from reading.	Using a topic from the reading log, participate in focused free - writing.
W.4.7.2 Organize ideas by using such graphic organizers as webbing, mapping, charts/graphs, Venn diagrams, and formal outlining with main topics and sub-topics	Organize ideas using graphic organizers.	Organize daily schedule using a chart.	Identify areas specific to a location using a map Example: School map, grocery store, playground, library, etc.	Arrange information in a simple outline by main idea. Example: Develop simple outline of class pets and home pets, things in room and things in library, etc.	Arrange information in a simple outline by main topic and sub-topic Example: Student items/ teacher items in classroom, classroom library/school library
W.4.7.5 Create a draft for expository writing with emphasis on organization by paragraphs – introduction, main points with elaboration, and conclusion-	Create a draft for expository writing with emphasis on organization.	Select the picture that represents the central idea from an expository sentence. Example: Picture of fire, volcano, etc.	Given a list of activities, choose preferred list of activities for rec/leisure time.	Create a pre-writing outline using single sentences or sight words.	Organize ideas related to selected topic Example: Teacher will give sentences and the student will arrange sentences in order to form a draft of an expository paragraph.

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.7.3 Write expository, narrative, descriptive, and persuasive writings	Write a paragraph or sentence.	Sequence two to three pictures to tell story	As a group, write an expository paragraph after comparing and contrasting items of texture, taste, odor, or visual appearance.	Write sentences about story.	Organize sentences into paragraph.
W.5.7.9 Write on demand with or without prompt within a given time frame	Write on demand on given topic	Write a sentence from choice of two objects on specified topic within a specified time	Write two sentences from a prompt within a specified time	Write a thank you note to a family member within a specified time	Complete an application (library card, club, schedule) using personal information within the specified time
W.5.7.10 Write across the curriculum	Write across the curriculum.	Choose correct picture/symbol from desired content. Example: Following a lesson on a tornado, the student will select a picture of a tornado vs. a hurricane.	Distinguish sentence about given topic. Example: Choose from two sentences.	Write a word/sentence from presented content information. Example: Student writes, “Today I learned _____.” (This could serve as a ticket out of class.)	Develop a graph following a science experiment. Example: Provide each child with a small bag of fruit snacks. Graph the different colors, shapes, characters, etc. within the bag.

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.7.1 Vary sentence structure by using simple, compound, and complex sentences and different kinds of sentences. • Declarative • Interrogative • Imperative • Exclamatory	Write or build a simple or complex sentence	Choose a simple sentence that relates to a picture.	Dictate a simple sentence.	Arrange words to form a simple sentence. Example: Cut a sentence into individual words/pictures. The student arranges the words/pictures to form a simple sentence.	Write a simple sentence.
W.6.7.8 Apply conventional rules of capitalization in writing	Begin a sentence or word with a capital letter.	Choose the capital letter. A/a, A/P	Identify word beginning with capital letter in a sentence.	Look at identical sentences and select capital letter	Use a capital letter to begin a sentence.
W.6.7.9 Apply conventional rules for all end marks and commas in writing.	Apply ending punctuation.	Show requested punctuation mark. Example: The teacher presents a sentence and a card of a period and a question mark then asks, " Which would go at the end of the sentence?"	Choose correct punctuation mark for a sentence Example: On a teacher - generated worksheet, the student will circle the correct punctuation mark.	Add mark punctuation to sentences. Example On a teacher – generated worksheet, the student will add the correct punctuation mark to prepared sentences	Write sentences with ending punctuation.

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.7.2 Use a variety of sentence types and lengths (See Conventions Standard 6)	Use a variety of sentence types.	Write a two-word sentence. Example: Select pictures of a noun and a verb. The student will write/dictate sentence.	Use word cards to create sentences.	Dictate sentences of various lengths and types.	Develop declarative sentences of various lengths and types.
W.7.7.5 Use purposeful vocabulary with emphasis on developing voice	Use purposeful vocabulary.	Identify items for grocery list based on recipe.	Identify vocabulary needed for daily schedule.	Develop vocabulary for personal information.	Identify vocabulary for content area.
W.7.7.11 Use writer's checklist or scoring guides/rubrics to improve written work	Use writer's checklist.	Use a writer's checklist for editing written work. Example: Does this sentence begin with a capital letter?	Use a writer's checklist for editing written work. Example: Is there a capital letter at beginning of the sentence? Is there a period at the end?	Use a writer's checklist for editing written work. Example: Did I tell who or what the sentence is about?	Use a writer's checklist for editing written work. Example: Did I tell who or what the sentence is about? Did I tell what is being done?

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.7.6 Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text	Make personal connections to activity or text.	Relate family events and school activities Example: Parent or teacher writes information in a home to school journal	Respond to pictures, advertising, etc to write personal connection	Respond to a book with personal connection	Dictate sentences responding to a photo journal Example: Parent or teacher writes information in a home to school journal.
R.9.7.9 Analyze literary elements of fiction with emphasis on plot development, including conflict, rising action, climax, falling action, and resolution	Analyze plot development.	Identify the plot from a story or book Example: After reading the selection, the student will answer teacher - gnerated questions about what happened.	Identify a conflict from the story or book. Example: Tell a problem from the story.	Identify a conflict from the story or book. Example: Tell two problems from the story.	Identify the climax from the story or book. Example: Tell the most important thing that happened in the story.
R.9.7.12 Identify main ideas and supporting evidence in short stories and novels.	Identify main idea or details.	Identify the main idea of a sentence. Example: Draw a picture expressing the main idea.	Identify the main idea of a paragraph.	Identify the main idea of a short passage of at least two paragraphs. Example: Draw a picture expressing the main idea	Identify three details in support of the main idea of a passage of at least two paragraphs.

Reading	***Content Standard 10***: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.7.1 Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels	Read for a substantial amount of time each day.	Read for a specific amount time using a book on tape, CD, I-POD, MP3 Player, etc.	Read for a specific amount time a self-selected book during DEAR, SSR, etc.	Read a piece of text with a peer for a specific amount of time.	Read text independently on an appropriate level for specific amount of time.
R.10.7.5 Use skimming, scanning, note taking, outlining, and questioning as study strategies	Skim and scan to find important information.	Skim pictures/objects to find requested item.	Skim shelf to find object. Examples: Skim game shelf to locate specific game. Skims grocery shelf for specific item from list.	Skim text to locate graphic. Examples: Find the picture on this page. Locate the chart.	Skim a text for irregular text. Example: The teacher highlights a word on page, bold/italicized print
R.10.7.11 Read and utilize functional/practical texts, including forms, reports, cover letters, letterheads and business letters	Read and use a variety of practical texts.	Complete order blank using selected items from catalog.	Select movie to attend from the newspaper (movie gallery, Internet)	Read menu and place order. Example: School lunch menu, cafeteria	Read and follow the steps in a recipe.

Reading	***Content Standard 1***1: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.7.1 Automatically decode words to ensure focus on comprehension	Automatically recognize words to comprehend the written material.	Organize daily schedule	Decode pictures of familiar people and respond appropriately Example: Use a picture of Mom/Dad who is picking me up today. Use a picture of food as a reminder that for lunch today, I want a cheeseburger/ chicken sandwich.	Match word to object to locate specific information. Example: Match a picture from recipe to the item.	Read a passage and illustrate what was read. Example: After reading the sentence “The apple is red.” the student will show a picture of a red apple.
R.11.7.2 Continue to develop and maintain an adequate body of sight words	Identify sight words.	Recognize name in print	Recognize items needed for personal hygiene. Example: Brushing teeth, taking a bath/shower	Match a variety of pictures to sight words in a word journal or on word wall	Recognize words/pictures needed for schedule Example: Today is O.T. Which is the O.T. card? Are you having art or music today?
R.11.7.7 Determine useful and relevant words	Know useful and relevant words.	Given a list of words or pictures, identify items needed for a specific class Example: Science class -book, lab notebook, journal	Identify words needed to complete a form Example: Calendar of events, schedule, student identification sheet	Answer questions concerning the environment Example: Use a sign, gesture, object, picture, word to locate different areas in classroom	Develop a poster advertising an environmental group activity Example: Write the telephone number of important people in his/her life in a picture phone book.

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.1.8.1 Use vocabulary from content area text and reading/literature	Develop content and personal vocabulary.	Develop vocabulary specific to content area by matching word to definition Example: Choose correct word/picture to match definition.	Identify name from list of names. Example: Match to sample	Match word to object, text, or picture	Categorize subject vocabulary. Example: Activities of daily living, food words, school activities, jobs, etc.
OV.1.8.3 Speak for and to various purposes and audiences	Use appropriate oral communica-tion for various purpose/audi ence.	Student shares information with others. Example: Draw a picture of information shared. Teacher dictate into device: Sandy said, "I want to tell you about my weekend."	Make a request to communicate a desire. Example: Eat, bathroom, etc	Initiate and participate in a conversation with peers. Example: Conversation is taped and scripted by teacher	Present information (book talk, report, project, etc.) to class using a visual aid Example: Power Point (talking book, switch, communication device, etc.)
OV.1.8.10 Critique oral presentations of self and peers based on present criteria.	Evaluate oral presentations .	Listen appropriately and respond to a topical rubric presented by the teacher. Example: Following the presentation, the teacher would ask the student questions: Did you like the story?: Was this story about a good or a bad person?	As a class, respond to a student-focused presentation. Use a teacher-generated rubric to evaluate.	Listen to peer presentation and complete a teacher-generated rubric evaluating peer presentation.	Generate a list of criteria that is essential characteristics of a speaker. Example: Invite a speaker to the class and have the students use the established questions to evaluate the speaker's performance.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
OV.2.8.1 Demonstrate effective listening skills by exhibiting appropriate body language	Demonstrate effective listening skills.	The student will listen attentively and respond to teacher-generated questions by answering selecting correct answer.	After listening to a speaker, student will generate questions of interest. Example: Teacher/student write down questions asked, audio, video, etc.	After listening to speaker's presentation, the student finds additional information on Internet.	The student will take notes during presentation. Example: Pictures provided by teacher, pictures drawn by student, word bank, document created from notes (forest, tree, bear, stream)
OV.2.8.3 Listen attentively to summarize	Listen attentively to summarize.	Listen to the daily lunch choices to summarize items on the menu. Example: Categorize items on the menu by meat, vegetable, and/or dessert.	Listen for the daily announcements and identify the ones they need	Listen for instructions regarding tornado and fire drills and identify the location where the student needs to be for each.	Listen for instructions for appropriate behavior for school assemblies. Example: Raise hand for asking a question, clapping hands at appropriate time, laughing at appropriate time, etc.
OV.2.8.5 Evaluate presentations using established criteria/rubrics (e.g., purpose, content, organization and delivery)	Evaluate presentations using a rubric.	Listen appropriately and respond to a topical rubric presented by the teacher. Example: Following the presentation, the teacher asks the student questions: Did you like the story? Was this story about a good or bad person?	As a class, respond to a student-focused presentation. Use a teacher-generated rubric to evaluate.	Listen to peer presentation and complete a teacher-generated rubric evaluating peer presentation.	Generate a list of criteria that is essential characteristics of a speaker. Example: Invite a speaker to the class and have the students use the established questions to evaluate the speaker's performance.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.8.1 Self select and apply an appropriate prewriting strategy for a variety of writing purposes across the curriculum with emphasis on interviewing, note-taking, and gathering data	Generate ideas by self-selecting prewriting strategies.	Generate a list of three questions about a new unit of study. Example: Learning to do laundry: Are white clothes and colored clothes washed together? Are white clothes and colored clothes washed at the same temperature? Is hot water or cold water used to wash white clothes?	Following a nature walk, the student will observe nature and gather data of things observed. Example: Gather leaves of differing shapes and sizes.	Keep a reading log of ideas learned from reading content texts. Example: Write characteristics of a mammal.	Develop a list of questions to ask when interviewing a peer or adult.
W.4.8.2 Organize ideas by using such graphic organizers as charts/graphs and formal outlining with main topics and sub-topics	Organize ideas using graphic organizers.	Organize daily schedule using a chart.	Identify areas specific to a location using a map Example: School map, grocery store, playground, library, etc.	Arrange information in a simple outline by main idea. Example: Develop simple outline of class pets and home pets, things in room and things in library, etc.	Arrange information in a simple outline by main topic and sub-topic Example: Student items/ teacher items in classroom, classroom library/school library
W.4.8.5 Create a draft with emphasis on persuasive and expository organization.	Create a draft for persuasive and/or expository writing with emphasis on organization.	Choose an item to begin forming a persuasive paragraph. Example: Do you like the food in our cafeteria?	Choose between two items to begin forming a persuasive paragraph. Example: Which do you like best french fries or mashed potatoes?	Choose between three items to begin forming a persuasive paragraph. Example: Which do you like best: chocolate milk, fruit juice, or water?	Write a persuasive paragraph on a selected topic. Example: Create sentences about food in the cafeteria and organize into a draft of a persuasive paragraph.

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.5.8.3 Write expository, narrative, descriptive, and persuasive writings	Compose various types of writings.	Sequence two to three pictures to tell a story	Add details to picture sentence to write a story.	As a group, write an expository paragraph after comparing and contrasting items of texture, taste, odor, and/or visual appearance	Write a persuasive paragraph based on the draft
W.5.8.9 Write on demand with or without prompt within a given time frame	Write on demand on given topic	Write a sentence from a choice of two objects on specified topic within a given time frame	Write two sentences on specific topic within a given time frame	Write a thank you note to a family member within a given time frame	Complete a job application within a given time frame
W.5.8.10 Write across the curriculum	Write across the curriculum.	Choose correct picture/symbol from desired content. Example: Following a lesson on a tornado, select a picture of a tornado vs a hurricane.	From two sentences, choose the correct answer to a question about the topic. Example: Sentences could be written in print, typed on a computer, written on a communication device, etc.	Write a word/sentence from presented content information. Example: The student will write, “Today I learned _____.”	Develop a graph following a science experiment. Example: Provide each child with a small bag of fruit snacks. Graph the different colors, shapes, characters, etc. within the bag.

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.8.1 Vary sentence structure by using simple, compound, complex and compound-complex sentences and different kinds of sentences. • Declarative • Interrogative • Imperative • Exclamatory	Write a simple, compound, complex, and/or compound-complex sentence	With assistance, develop an example of each type of sentence based upon pictures, objects or illustrations.	Order the words to form a sentence. Example: For each type of sentence, cut an example into individual words/pictures and student arranges the words/pictures to form the correct type of sentence.	Dictate simple sentences for each type of sentence	Write a simple sentence.
W.6.8.8 Apply conventional rules of capitalization in writing	Use capital letters.	Recognize the difference between uppercase and lowercase letters and identify each. Example: Choose the capital letter. A/a, A/P	Identify word beginning with capital letter in a sentence. Example: Dogs bark. See the boy run.	Look at identical sentences and select the correctly written sentence with a capital letter. Example: We will go to the park. we will go to the park.	Use correct capitalization to write complete address.
in W.6.8.9 Apply conventional of punctuation in writing.	Apply ending punctuation.	Show requested punctuation mark. Example: The teacher presents a sentence and card of period and question mark. Which one would go at the end of the sentence?	Choose correct punctuation mark for sentence on a teacher-generated worksheet Example: The dog ran (? or !) Is this your dog (? or !)	Add the correct punctuation mark to prepared sentences on a teacher prepared worksheet	Write sentences with ending punctuation.

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.8.2 Use a variety of sentence types and lengths (See Conventions Standard 6)	Use a variety of sentence types.	Write a two-word sentence. Example: Select pictures of noun and verb. Then write/dictate sentence.	Use word cards to create sentences.	Dictate sentences of various lengths and types.	Develop declarative sentences of various lengths and types.
W.7.8.5 Use purposeful vocabulary with emphasis on developing tone	Identify tone with purposeful vocabulary	Identify the tone represented by two pictures. Example: ☺ ☹ Which face is sad? Which face is happy?	Identify tone based upon his/her mo0d. Example: Are you happy or sad today?	Based upon observation of a peer, Identify his/her mood Example: Given a choice of 3 faces, choose the picture to answer the question: “How do you think ___ is feeling today?”	Based upon a story, identify the mood of the main character. Example: Given a choice of 3 faces, answer the question: “How do you think (main character) felt in the story?”
W.7.8.11 Self-evaluate writing	Use writer’s checklist.	Use writer’s checklist, to review written work. Example: Did I begin my sentence with a capital letter?	Use writer’s checklist, to review written work. Example: Did I begin my sentence with a capital letter? Did I end my sentence with (? or ! .).	Use writer’s checklist, to review written work. Example: Did I tell who or what the sentence is about?	Use writer’s checklist, to review written work. Example: Did I tell who or what the sentence is about? Did I tell what was being done?

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.9.8.7 Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text	Make personal connections to activity or text.	Relate family events and school activities Example: Parent or teacher writes information in a home to school journal.	Respond to pictures, advertising, etc to write personal connection	Respond to a book with personal connection	Dictate sentences in response to a photo journal Example: Parent or teacher writes information in a home to school journal.
R.9.8.11 Analyze literary elements of fiction with emphasis on plot, subplot and climax, and explain the way in which conflicts are resolved or unresolved	Analyze friction	Identify the plot from a story or book. Example: After reading the selection, answer teacher generated questions about what happened.	Identify a conflict from the story or book. Example: Tell a problem from the story.	Identify a conflict from the story or book. Example: Tell two problems from the story.	Identify the climax from the story or book. Example: Tell the most important thing that happened in the story.
R.9.8.15 Identify main ideas and supporting evidence in short stories and novels.	Identify main idea or details of text.	Identify the main idea of a simple sentence. Example: Draw a picture expressing the main idea.	Identify two details in support of the main idea of the paragraph.	Identify the main idea from a short passage of at least two paragraphs. Example: Draw a picture expressing the main idea.	Identify three details in support of the main idea of a passage of at least two paragraphs.

Reading	***Content Standard 10***: Variety of text: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.10.8.1 Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels	Read for a substantial amount of time each day.	Read for a substantial amount of time using a tape, CD, I-POD, MP3 Player, etc.	Read for a substantial amount of time with a self-selected book during DEAR, SSR, etc.	Read for a substantial amount of time using a piece of text with a peer	Read for a substantial amount of time text on an appropriate level.
R.10.8.5 Use skimming, scanning, note taking, outlining, and questioning as study strategies	Skim and scan to find important information.	Skim a text for irregular text. Example: The teacher highlights a word on page. Student locates the highlighted word by pointing, circling, etc.	Skim text to locate graphic. Example: Point to the picture/chart on this page.	Skim pictures/objects to find requested item.	Skim shelf to find object. Examples: Skim game shelf to locate specific game. Skim grocery shelf for specific item from list.

Reading	***Content Standard 11***: Vocabulary, Word Study and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
R.11.8.1 Automatically decode words to ensure focus on comprehension	Automatically recognize words to comprehend the written material.	Organize daily schedule	Decode pictures of familiar people and respond appropriately Example: A picture of Mom/Dad ia reminder of who is picking me up today. A picture reminds me of that I want a cheeseburger/chicken sandwich for lunch.	Match word to object to locate specific information. Example: Match a picture from recipe to the item.	Read a passage and illustrate what was read. Example: After reading the sentence “The apple is red.”, the student will show a picture of a red apple.
R.11.8.2 Continue to develop and maintain an adequate body of sight words	Identify sight words.	Recognize name in print	Recognize items needed for personal hygiene. Example: Brushing teeth, taking a bath/shower	Match a variety of pictures to sight words in a word journal or on word wall	Recognize words/pictures needed for schedule Example: Today is O.T. Which is the O.T. card? Are you having art or music today?
R.11.8.7 Determine useful and relevant words	Know useful and relevant words.	Given a list of words or pictures, identify items needed for a specific class Example: Science class—book, lab notebook, journal	Identify words needed to complete a form Example: Calendar of events, schedule, student identification sheet	Answer questions concerning the environment Example: Use a sign, gesture, object, picture, word to locate different areas in classroom	Develop a list of steps to be followed using relevant words or useful words. Example: Directions to the cafeteria, a recipe or other similar activity

Oral and Visual Communications	***Content Standard 1***. Speaking: Students shall demonstrate effective oral communication skills to express ideas and to present information.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
*O.V.1.11.1 Prepare and participate in formal discussions, such as Socratic discussions	Participate in discussions	Respond appropriately through gestures Example: Technology, pictures, and body language	Respond appropriately to questions Example: What did you do this weekend?	Participate in a group discussion Example: Interjecting appropriately in a group discussion, adding details to discussion	Carry on appropriate conversation with others Example: Using topics furnished by teacher
*O.V.1.11.3 Perform a variety of such speaking activities as scenes from a play, monologues, memorization of lines, character analysis, literary reviews, excerpts from famous speeches, and comparisons of genre across eras.	Participate in a variety of speaking activities.	Participate in a play Example: Make a suitable noise at the right time; hold up a sign, etc	Read and/or recite a poem or a portion of a poem	Read a character's role from a play.	Recite a portion of a famous speech Example: "I Have a Dream, Gettysburg Address, etc.

Oral and Visual Communications	***Content Standard 2***: Listening: Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication**.**				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
O.V.2.11.1 Demonstrate critical, empathetic, and reflective listening to interpret, respond to, and evaluate speakers' messages.	Listen to interpret and respond to speakers message	Give appropriate response to questions asked Example: Are You hungry? What is your favorite food? Is your coat warm?	Give appropriate response to questions asked Example: Are you happy today? What makes you sad?	Give appropriate response to questions asked Example: What is your favorite movie? What is favorite restaurant?	Give appropriate response to questions asked Example: Do you understand what to do now? Do you know what to do next?
O.V.2.11.2 Identify organizational patterns appropriate to diverse situations, such as interviews, debates, and conversations.	Identify organizational patterns fitting to select situations	Will give correct response to personal questions Example: What is your name, age, etc	Will give correct response to personal questions Example: What is your address, parents/guardians names, etc)	Will give correct response to questions Example: Personal interests	Will give correct response to personal questions Example: Mock interviews giving pertinent information
O.V.2.11.3 Identify barriers to listening and generate methods to overcome them.	Identify barriers and generate methods for listening.	Will adapt to various sound levels Example: Perform a gesture to communicate such as shake head for 'no', etc.	Will adapt to various sound levels Example: Perform a gesture to communicate Example: Signs or signals from a communication device	Will adapt to various sound levels Example: Ask speaker to repeat spoken word in louder voice, etc.	Will adapt to various sound levels Example: Move closer to hear, etc.

Writing	***Content Standard 4***: Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.4.11.3 Write clear and varied sentences	Write clear sentences.	Put pictures together to form simple sentences Example: Show three pictures and have student to select the two that are related to form a sentence	Write clear sentences Example: Select nouns and verbs from a list to write clear sentences	Write clear sentences Example: Choose adjectives from a list to develop clear sentences	Write clear and varied sentences. Example: Declarative, questions
W.4.11.6 Arrange paragraphs into logical progression with appropriate transition.	Arrange paragraph in progression.	Organize correct progression of pictures	Place sentences in correct sequence Example: Pick two sentences from given list and place in correct order	Place sentences in correct sequence Example: Give the beginning and ending sentence and have student add a middle sentence	Place sentences in correct sequence Example: Use five sentences in a paragraph
W.4.11.12 Apply grammatical conventions for capitalization, punctuation, formatting, and spelling.	Apply grammatical conventions.	Apply capitalization Example: Proper nouns such as names, months, days of week, etc	Apply capitalization Example: Proper nouns, first word of a sentence, etc.	Apply capitalization and punctuation Example: Proper nouns, first word in sentence, question marks, exclamations	Apply spelling rules Example: Personal writing
W.4.11.14 Maintain a writing portfolio that exhibits growth and reflection in the progress of meeting goals and expectations.	Maintain writing portfolio that exhibits growth and reflection.	Collect samples of students' writings	Collect samples of students' writings	Collect samples of students' writings	Collect samples of students' writings

Writing	***Content Standard 5***: Purpose, Topics, Forms and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics and audiences employing a wide range of forms.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
*W.5.11.3 Write using rhetorical strategies with special emphasis on compare/contrast, cause/effect, classification, and argumentation/persuasion that demonstrate logic.	Write using rhetorical questions or strategies.	Use the classification strategy with pictures Example: Clothing, dishes, seasonal items, etc.	Use the compare/contrast strategy with pictures Example: Seasonal clothing, food groups, etc.	Teacher generated activity-using cause/effect Example: Teacher states cause and student states effect, etc	Write using persuasive techniques Example: Letters to principal about lunches served and/or extended lunch hour; letter to the editor asking for equipment for city park, etc.
W.5.11.6 Write poems using a range of poetic techniques, forms, and figurative language.	Write a variety of poems.	Respond to and/or identify pairs of rhyming words (spoken by teacher and/or student).	Match rhyming words Example: Read by teacher and/or student	Select and write words from a list that rhyme.	Write a short poem Example: Limerick, hyperbole, etc.
W.5.11.8Write on demand to a specified prompt within a given time frame.	Write on demand to a specified prompt.	Identify words that are similar in meaning Example: Signals when words heard or read are synonyms	Select words from list that are related to prompt for writing a paragraph Example: Provided word pool.	Write a paragraph with teacher assistance Example: Teacher provide beginning and ending sentence and student provides the middle sentences	Write paragraph in response to teacher provided prompt.
W.5.11.9 Write across the curriculum.	Compose written communitca-tion across the curriculum	Identify pictures relating to core subject Example: Identify snow as being related to weather using a picture of snow and a car	Circle vocabulary in word pool that pertains to topic.	Fill in blanks with topic vocabulary selected from word pool.	Write short paragraph pertaining to topic using vocabulary from word pool.

Writing	***Content Standard 6***: Conventions: Students shall apply knowledge of Standard English conventions in written work.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.6.11.1 Use a variety of sentence structures, types, and lengths for effect in writing	Use a variety of sentence structures.	Identify picture related to simple sentence.	Given three (3) words, arrange in sentence formation.	Write simple sentences.	Write declarative and interrogative sentences.
W.6.11.4 Apply conventional rules of capitalization in writing.	Apply conventional rules of capitalization.	Identify words that require capital letters Example: Select words requiring capital letters	Identify words that requiere capitals letters Example: Capitalize common nouns vs proper nouns	Write sentences using correct capitalization rules with teacher assistance Example: Identify proper nouns; place capital letter in teacher highlighted blanks in selected text	Write using capitalization rules correctly.
W.6.11.5 Apply the punctuation rules appropriately in writing.	Apply punctuation rules in writing.	Correctly identify periods and commas Example: Signal when shown a period or a comma	Correctly identify periods and/or commas when used in a sentence.	Identify periods, commas, and question marks used correctly in sentence Example: Choose what periods and commas are used correctly on a worksheet	Use periods, commas, and question marks correctly in sentences.

Writing	***Content Standard 7***: Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
W.7.11.2 Use a variety of sentence structures, types, and lengths to contribute to *fluency* and interest	Use a variety of sentence structures.	Identify picture related to simple sentence.	Given three (3) words, arrange in sentence formation.	Write simple sentences.	Write declarative and interrogative sentences.
W.7.11.7 Use precise word choices that convey specific meaning.	Use a variety of word choices.	Select picture related to simple sentence with emphasis on adjective.	Given words with one being an adjective, arrange in sentence formation.	Complete simple sentences by replacing highlighted words with an adjective selected from given word pool.	Edit sentences by replacing overused vocabulary. Example: Pretty with beautiful; good with well, etc.

Reading	***Content Standard 9***: Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.				
Student Learning Expectation ***Grade 11***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
*R.9.11.1 Analyze personal biases brought to text	Connect own background to text.	Match picture to related word Example: Photo to family member; picture to personal possession, etc.	Mark by highlighting, circling, or underlining, words of personal interest in selected text.	Create a family tree with teacher assistance after reading related text.	Relate character or event in story read to a personal experience.
*R.9.11.3 Explain the use of appropriate strategies to support active reading and engagement.	Develop strategies to support active reading and engagement.	Respond to story read by teacher.	After listening to story, give appropriate response to teacher generated questions.	Select from one of three possible solutions to a story and give reasons to support their choice.	Create an appropriate ending to complete a story.

Acrostics	A kind of word puzzle sometimes used as a teaching tool in vocabulary development in which lines of verse or prose are arranged so that words, phrases, or sentences are formed when certain letters from each line are used in a certain sequence
Alliteration	The repetition of initial consonant sounds in closely positioned words or stressed syllables for aural effect
Anaphora	The deliberate repetition of a word or phrase usually at the beginning of several successive verses, clauses, or paragraphs; for example, "*We shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills*" (Winston S. Churchill).
Archetype	A symbol, theme, setting, or character-type that recurs in different times and places in literature so frequently or prominently as to suggest that it embodies some essential element of "universal" human experience, such as *Frankenstein*, *Dracula*, and *Dr. Jekyll and Mr. Hyde*, the archetypes that have influenced horror stories.
Assonance	The repetition in words of identical or similar vowel sounds in closely positioned words, as */a/* in the *mad hatter*, for aural effect
Cinquain	A five-line stanza of syllabic verse. The five lines have, respectively, two, four, six, eight, and two syllables.
Closed syllable	A syllable ending with one or more consonants
Commentary information	Student writer's interpretations and inferences supported with concrete information
Concrete information	Factual material from the text
Content prose (text)	Prose selections taken from across the curriculum
Couplet	A pair of rhyming verse lines, especially lines of the same length
Descriptive writing	Provides details about an object, place, or person purposefully to make the experience depicted come alive for the reader
Diamantes	Poetry arranged in a diamond pattern using seven lines in the following manner: line 1, one word subject (noun); line 2, two adjectives describing line 1 noun; line 3, three participles ending in -ing or -ed to describe line I noun; line 4, four words - two related to the noun in line 1 and two related to the noun in line 7 (they may be arranged concurrently or alternately, as the originator of the poem wishes); line 5, three participles ending in -ing or -ed to describe line 7 noun; line 6, two adjectives describing line 7 noun; line 7, one word growing out of or opposite to line 1 noun (another noun)
Digraph	Two letters that represent one speech sound, such as *ch* for */ch/* in *chin* or *ea* for */e/* in *bread*
Discourse	Purposeful communication between people
Disinformation	Deliberately misleading information announced publicly or leaked by a government or especially by an intelligence agency for the purpose of influencing public opinion or the government in another nation: "*He would be the unconscious channel for a piece of disinformation aimed at another country's intelligence service*" (Ken Follett).
Embedding	Process of combining sentence in which one clause or phrase is contained inside another
Evaluation	Judgment of performance as process or product or change
Expository text/writing	One of the four traditional forms of composition in speech and writing (expository, narrative, descriptive, and persuasive), intended to set forth or explain
Fluency	The clear, rapid, and easy expression of ideas in reading, writing, or speaking: movements that flow smoothly, easily, and readily
Focused freewriting	Freewriting that is restricted by time or topic
Free verse	Verse with an irregular metrical pattern and line length

Freewriting	Writing that is unrestricted in form, style, content and purpose; a technique designed to aid the student-writer in finding a personal voice through uninhibited expression
Genre	A form or style of writing, such as narrative (a story), informative (a report), or functional (instructions)
Homographs	Words that are spelled the same but may sound different and have different meanings, such as *minute* (a minute of time) and *minute* (very small)
Homonyms	Words that sound the same and have the same spelling but have different meanings, such as *table* (a piece of furniture) and *table* (a list of information)
Homophones	Words that sound the same but are spelled differently and have different meanings, such as *hear* and *here*
Infographics	Information conveyed by graphic elements, including charts, graphs, etc., often contained in print media
Inversion	An interchange of position of adjacent objects in a sequence, especially a change in normal word order, such as the placement of a verb before its subject
Kinds of sentences	Declarative—makes a statement or expresses and opinion and ends with a period; imperative—makes a request or gives a command and ends with either a period or an exclamation point; exclamatory—expresses strong feeling and ends with an exclamation point; interrogative—asks a question and ends with a question mark
Limericks	A fixed form of light verse of five lines with a rhyme scheme of *aabba* and specific meter, used exclusively for humorous or nonsense verse
Literary device	An all-purpose term used to describe any literary technique deliberately used to achieve a specific effect
Literary prose	Prose selections taken from novels, short stories, essays, etc.
Mechanics	Includes the system of symbols and cuing devices a writer uses to help readers make meaning. Features are capitalization, punctuation, formatting, and spelling.
Mode of writing	The major types of written discourse: persuasive, expository, narrative; descriptive
Narrative	Text in any form (print, oral, or visual) that recounts events or tells a story
Nonprint text	Any text that creates meaning through sounds or images or both, such as photographs, drawings, collages, films, videos, computer graphics, speeches, oral poems and tales, and songs
Onset	The consonants preceding the vowel of a syllable, as */str/* in *strip* and */c/* in *cat*
Organizational structure	Compare/contrast, analyze cause/effect, chronological order, inference, and evaluation
Persona	An assumed identity or fictional "I" assumed by a writer in a literary work; thus the speaker or narrator
Personal voice	In writing, the distinctive way in which the writer expresses ideas with respect to style, form, content, purpose, etc; author's voice
Phoneme	The smallest units of sound in a given language (The phonemes in the words are not always the same as the letters in a word. In the word *dog*, there are three phonemes [d-o-g] and three letters. In the word *snow*, there are three phonemes [s-n-o] but four letters.)
Phonics	A term generally used to refer to the system of sound-letter relationships used in reading and writing. Phonics begins with the understanding that each letter (or grapheme) of the English alphabet stands for one or more sounds (or phonemes).

Point of view	The angle of vision from which a story is told; the four basic points of view are 1) *omniscient* –the author tells the story, using third person, and knows all and is free to tell anything, including what other characters think and feel and why they act as they do; 2) *limited omniscient*—the author tells the story, using third person, but limits himself to a complete knowledge of one character and tells only what that one character thinks, feels, see, or hears; 3) *first person*—the story is told by one of the characters, using first person; 4) *objective (or dramatic)*—the author tells the story, using third person, but is limited to reporting what his characters say or do and does not interpret their behavior or tell their thoughts or feelings
Portfolio	A systematic and purpose collection of a variety of materials related to student learning. Rather than an archive of all the student's work throughout the year, a portfolio can serve as both an instructional and an assessment tool. The essential contents of both instructional and assessment portfolios are samples of student performance in important learning activities, student, teacher, and parent reflections on those samples, and any other relevant information that documents a student's developmental status and progress over time.
Practical text	Functional information useful in everyday applications, including manuals, handbooks, warranties, etc.
Presentation	May be oral, written, graphic, or musical and include art, music, writing
Pre-writing activities	List, survey, read, discuss, freewrite (focused/unfocused), learning and reading log, gather data, conduct experiments, debate, interview, observe, use visual aids including mapping, webbing, and formal outlining to gather and organize material for writing
Primary sources	Firsthand information, including memoirs, interviews, letters, and public documen
Prose	The ordinary language of men in speaking or writing; language not cast in poetical measure or rhythm; distinguished from verse or metrical composition. *I speak in prose, and let him rymes make*. --Chaucer.
Quatrain	A stanza or poem of four lines, rhymed or unrhymed
Rhetorical devices	Use of language mainly by the arrangement of words to achieve special effects
Rhetorical strategies	Plans used in arranging writing tasks or compositions, including comparison/contrast, narration, description, process analysis, etc.
Rime	A vowel and any following consonants of a syllable, such as */ack/* in *black* (Not all words or syllables have an onset, but they all have a rime. *Out* is a rime without an onset.)
Rubric	A scoring guide used to evaluate the quality of a student performance; typically, a rubric lists criteria that describe levels of proficiency on a task
Secondary sources	Works that have been collected, interpreted, or published by someone other than the original source
Sentence formation	Reflects the writer's ability to form competent, appropriately mature sentences to express thoughts. Features of this writing domain are completeness, absence of fused sentences, expansion thorough standard coordination and modifiers, embedding through standard subordination and modifiers, and standard word order.
Sentence Patterns	S-V= Subject + Verb
	S-V-DO= Subject + Verb + Direct Object
	S-V-IO-DO= Subject + Verb + Indirect Object + Direct Object
	S-LV-PN = Subject + Linking Verb + Predicate Nominative
	S-LV-PA = Subject + Linking Verb + Predicate Adjective
Sentence Types	see Types of Sentences below
Socratic discourse	A technique in which a teacher does not give information directly but instead asks a series of questions, with the result that the student comes either to the desired knowledge by answering the questions or to a deeper awareness of the limits of knowledge

Sound devices	Words with meanings or functions that are indicated by their pronunciation, including onomatopoeia, alliteration, consonance, etc.
Style	The characteristics of a work that reflect the author's distinctive way of writing; an author's use of language, its effects, and its appropriateness to the author's intent and theme
Syntax	The rules by which words are combined to form grammatically correct sentences (i.e., plurals, future tense, etc.); the study of how sentences are formed and the grammatical rules that govern their formation
Text Features	Format, italics, headings, sub-headings, graphics, sequence, diagrams, illustrations
Tone	The implied attitude toward the subject matter or audience of a text that readers may infer from the text's language, imagery, and structure
Types of sentences	Simple—consists of one independent clause; compound—consists of two or more independent clauses; complex—consists of one independent clause and one or more dependent (subordinate) clauses; compound-complex—consists of tow or more independent clauses and one or more dependent (subordinate) clauses
Usage	Comprises the writer's use of word-level features that cause written language to be acceptable and effective for standard discourse. Features are standard inflections, agreement, word meaning, and conventions.
Visual aids	Presentational tools that appeal to the sight and are used for illustration and demonstration
Visualization	The process or result of mentally picturing objects or events that are normally experienced directly
Voice	*see Personal voice
Writing process	The many aspects of the complex act of producing a written communication, specifically, planning, drafting, revising, editing, and publishing

Resource Guide to the Arkansas Curriculum Framework for Students with Disabilities for Mathematics for grades 3-8

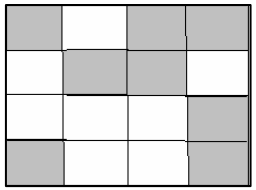
Summer 2006

Standards

Number and Operations	
1. Number Sense	Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.
2. Properties of Number Operations	Students shall understand meanings of operations and how they relate to one another.
3. Numerical Operations and Estimation	Students shall compute fluently and make reasonable estimates.
Algebra	
4. Patterns, Relations and Functions	Students shall recognize, describe and develop patterns, relations and functions.
5. Algebraic Representations	Students shall represent and analyze mathematical situations and structures using algebraic symbols.
6. Algebraic Models	Students shall develop and apply mathematical models to represent and understand quantitative relationships.
7. Analysis of Change	Students shall analyze change in various contexts.
Geometry	
8. Geometric Properties	Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.
9. Transformation of Shapes	Students shall apply transformations and the use of symmetry to analyze mathematical situations.
10. Coordinate Geometry	Students shall specify locations and describe spatial relationships using coordinate Geometry and other representational systems.
11. Visualization and Geometric Models	Students shall use visualization, spatial reasoning and geometric modeling.
Measurement	
12. Physical Attributes	Students shall use attributes of measurement to describe and compare mathematical and real-world objects.
13. Systems of Measurement	Students shall identify and use units, systems and processes of measurement.
Data Analysis and Probability	
14. Data Representation	Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.
15. Data Analysis	Students shall select and use appropriate statistical methods to analyze data.
16. Inferences and Predictions	Students shall develop and evaluate inferences and predictions that are based on data.
17. Probability	Students shall understand and apply basic concepts of probability.

*Each grade level continues to address earlier Student Learner Expectations as needed and as they apply to more difficult text.

Number and Operations	*Content Standard 1*. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 3*** Whole Numbers	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.3.1 Recognize equivalent representations for the same whole number and generate them by composing and decomposing numbers Ex. 352 = 300 + 50 + 2; 300 + 25 + 25 + 2; 150 + 150 + 50 + 2, etc.	When you combine and separate amounts they represent the same quantity.	Combine objects to represent a whole number 10 or less Example: Composition: A group of 5 apples can be made by combining 2 red and 3 green	Separate objects to represent a whole number 10 or less Example: Decomposition: 5 apples can be separated into 2 red and 3 green	Combine and separate objects to represent a whole number 20 or less Example: Composition: 20 can be made by combining:10 and 10, 15 and 5. Decomposition: 20 can be separated into 4 and 16 or 12 and 8	Combine and separate objects to represent a whole number 20 or less in multiple ways Example: Use counting manipulatives to represent a given number in a multiple of combinations
NO.1.3.3 Use mathematical language and symbols to compare and order four-digit numbers with and without appropriate technology (<, >, =)	Organize concrete sets of objects by quantity not size of objects	Compare quantities that are equal to each other. Example: Recognize matching sets of objects	Compare quantities of more than. Example: Recognize that 3 balls are more than 2 balls	Compare quantities of more than or less than. Example: Organize concrete objects into a certain order, such as, smallest to largest	Compare quantities or numeric values of more than, less than, or equal to. Example: Determine which value (3 or more groups) is largest or smallest (may go in ascending or descending order).

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 3*** Rational Numbers	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.3.4 Represent fractions (halves, thirds, fourths, sixths and eighths) using words, numerals and physical models Ex. • identify and illustrate parts of a whole and parts of sets of objects. • recognize that a fractional part of a rectangle does not have to be shaded with contiguous parts 	Represent fractions as parts of a whole or parts of sets of objects.	Fold objects to represent a part of a whole or part of a set. Example: Fold rectangular shapes left side over right side to make halves (paper rectangles, napkins, towels, etc.), food that folds in half (tacos, fried pies, sandwich)	Identify a part of a set as a fractional part. Example: Divide food among groups of people, sharing items equally among friends	Recognize halves and fourths using concrete models. Example: Shade objects according to the given fractions; use a trapezoid and hexagon of the pattern blocks to show halves or 2 triangles and 1 rhombus to show halves; fold a square into fourths	Represent simple fractions using words, numerals, and physical models. Example: If you have two red blocks and two blue blocks, what fraction of the total blocks is red? (1/2) Or If you have one red block and three blue blocks, what fraction of the total blocks is the red? (1/4) Or what fraction is blue? (3/4)

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 3*** Number Theory	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.3.1 Develop an understanding of the commutative and identity properties of multiplication using objects	Show or prove that changing the order does not change a value.	Recognize that processes can have different orders and the outcomes are not changed. Example: Boys go to lunch first on Monday, girls go to lunch first on Tuesday, both days all students still go to lunch; although the order changed the outcome remained the same	Recognize that processes can have different orders of combining the same number of objects and the total is unchanged. Example: Crayons include 1 by 8 or 8 by 1 array that represent the same total	Show that processes can have different orders for combining the same number of objects and the total is unchanged. Example: Use placement of dishes in a cabinet: to show two stacks of three plates or three stacks of two plates; in both cases there is six plates. ; This example can be used with glasses in a cabinet or canned food on a shelf, etc.	Demonstrate the commutative and identity property of multiplication. Example: Organize shoeboxes in a rectangular array on a shelf or in a closet (2 stacks of 3 shoe boxes is the same as 3 stacks of 2 shoe boxes).
NO.2.3.2 Apply number theory • determine if a three-digit number is even or odd • use the terms multiple, factor, product and quotient in an appropriate context (Since 3 x 4 = 12, 3 and 4 are factors; 12 is the product, 3, 6, 9, 12 are multiples of 3; 4, 8,12,16 are multiples of 4; 12 ÷ 4 = 3, the quotient)	Determine if a number is odd or even.	Recognize a one-to-one correspondence. Example: Each student gets one pencil	Distinguish between a correspondence that is one-to-one and a correspondence that is not one-to-one. Example: A package of hot dogs compared to a package of hot dog buns	Demonstrate whether a single digit number is odd or even. Example: Use a set of pencils to display even number and odd number by grouping by two's.	Determine if a number is even or odd. Example: A carton of eggs, number of cards dealt during a game.

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 3*** Computational Fluency-Addition and Subtraction	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
NO.3.3.1 Develop, with and without appropriate technology, computational fluency, in multi-digit addition and subtraction through 999 using contextual problems • strategies for adding and subtracting numbers • estimation of sums and differences in appropriate situations • relationships between operations	Develop computational fluency in addition and subtraction.	Demonstrate the ability to add or subtract values with or without technology. Example: Use concrete objects to count values	Demonstrate the ability to add or subtract values with or without technology. Example: Use picture symbols to count values	Demonstrate the ability to add or subtract values with or without technology. Example: Use concrete objects, picture symbols, mental math, or written problems with symbols to find values	Develop fluency with adding to, taking away from, and equal grouping with or without technology. Example: Use the cost of two different items at a store
NO.3.3.2 Develop, with and without appropriate technology, fluency with basic number combinations for multiplication and division facts (10 x 10)	Develop basic multiplication and division skills.	Recognize the ability to multiply or divide objects. Example: Pass out items or class materials in sets or divide items into groups	Develop the emerging ability to multiply values. Example: Find the number of napkins needed if each student gets two	Develop the emerging ability to divide values. Example: Given a basket of 20 milks, how many students can be served if each student receives 2 milks each?	Demonstrate the ability to multiply and divide values. Example: Finding the cost of buying more than 1 of the same item at a store

Algebra	***Content Standard 4***: Patterns, Relations and Functions: Students shall recognize, describe and develop patterns, relations and functions.				
Student Learning Expectation ***Grade 3*** Recognize, describe, and develop patterns	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.4.3.1 Count forward and backward when given a number less than or equal to 1000 ____, 399, ___, ____	Count forward and backward.	Demonstrate the ability to rote count. Example: Select the correct value by pointing or eye gaze	Demonstrate the emerging knowledge of representing numbers 1 through 10. Examples: Sing a song, recite a verse, match pictures to objects.	Demonstrate the ability to rote count backwards. Example: Watch the timer on a microwave, a timer of any kind that counts backward	Demonstrate the ability to perform a requested activity given a certain number. Example: Count the number of milk cartons, take the lunch count, count the number of books, or count the chairs in the classroom.
A.4.3.2 Relate skip-counting patterns to multiplication	Multiply by using patterns.	Recognize a repeated pattern. Example: Table setting, pairs of shoes	Demonstrate ability to repeat a pattern. Example: A student is having breakfast with three other people, each person gets two eggs, have the student count the number of eggs needed for the meal	Demonstrate ability to recognize, repeat, and copy a pattern. Example: Given a table setting student would continue the table setting pattern for another person or persons.	Exhibit the ability to create and extend patterns. Tell what is missing in a pattern. Example: Create patterns by stringing beads for necklaces

<table>
<tr><td>Algebra</td><td colspan="5">Content Standard 6: Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships.</td></tr>
<tr><td>Student Learning Expectation
Grade 3
Algebraic Models and Relationships</td><td>Essence of Student Learning Expectation</td><td colspan="4">Less Complex → More Complex</td></tr>
<tr><td>A.6.3.1
Complete a chart or table to organize given information and to understand relationships and explain the results
Ex.
The library has 5 workstations. Four students can sit at each station.
How many students can sit at all the stations?

stations | students
1 | 4
2 | ?
3 | ?
4 | ?
5 | ?</td><td>Create a sample of data.</td><td>Sort data.

Example:
Girls' sit at one table, boys sit at another table; sort by color; sort by shape; use a Venn diagram.</td><td>Group data.

Example:
Sit at tables in groups, form groups for activities and summarize the results in a chart or table

Number of Students | Number of tables
4 | 1
8 | 2
12 | 3
16 | ?</td><td>Develop a data table.

Example:
To make a sandwich for one student it takes two slices of bread. How many slices of bread does it take to make a sandwich for 4 students?

Number of Students | Number of slices
1 | 2
2 | 4
3 | ?
4 | ?</td><td>Interpret a data table.

Example:
Using the previous example, decide how many slices of bread are needed for six students to have a sandwich; or answer questions about a data table that has been constructed earlier</td></tr>
</table>

Algebra	***Content Standard 7***: Analysis of Change: Students shall analyze change in various contexts.				
Student Learning Expectation ***Grade 3*** Analyze Change	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.7.3.1 Identify the change over time Ex. We have recorded the morning and afternoon temperatures all week Which day had the greatest change in temperature?	Recognize change over time.	Recognize a change. Example: Change in seasons	Recognize a change over time. Example: Ice cube melting (draw or describe results)	Identify a change over time. Example: Use a student's own pictures for time line	Identify and describe a change over time. Example: Plant growth, measure it and describe the growth

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 3*** Characteristics and Properties-Three Dimensional	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.3.1 Compare, contrast and build three-dimensional solids by investigating the number of faces, edges, and vertices on models	Identify the differences of 3-D solids	Match like 3-D solids. Example: Match real-world objects (cans, boxes, waffle cones) to 3-D solids.	Sort 3-D solids by their characteristics. Example: Sort groceries and cleaning supplies by cans versus boxes	Identify 3-D solids and their characteristics. Example: Categorize real-world 3-D solids by number of vertices, edges, or faces	Construct models of 3-D solids and identify their characteristics. Example: Build models using real-world 3-D solids and name the number of vertices, edges, or faces
G.8.3.2 Identify regular polygons with at least 4 sides (square, pentagon, hexagon and octagon)	Identify regular polygons.	Match like regular polygons. Example: Match real-world objects that are regular polygons	Sort regular polygons by their characteristics. Example: Sort by the number of sides from an assortment of regular polygons	Identify regular polygons and their characteristics. Example: Categorize real-world regular polygons by the number of sides or corners	Draw/collect pictures of regular polygons and identify their characteristics. Example: Draw or collect pictures of regular polygons; construct regular polygons with an art project
G.8.3.4 Identify and draw intersecting and parallel lines	Identify intersecting and parallel lines.	Recognize where lines intersect or are parallel. Example: Maneuver a wheelchair down a hallway through an intersection or through rows of chairs	Identify where lines intersect or are parallel. Example: Collect or draw pictures or maps, look at railroad tracks	Describe intersecting or parallel lines. Example: Read a map of the building or of the city; have the student to describe the way out of the building during an emergency	Draw a map or a diagram containing intersecting or parallel lines. Example: Draw a map of the classroom or building

Geometry	***Content Standard 9***: Transformation of Shapes: Students shall apply transformations and the use of symmetry to analyze mathematical situations.				
Student Learning Expectation ***Grade 3*** Symmetry & Transformations	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.9.3.1 Draw one or more lines of symmetry in a polygon	Find a line of symmetry.	Trace a symmetrical figure and its line of symmetry. Example: Trace a heart, diamond, triangle, square, etc..	Show lines of symmetry in an object. Example: Folding activity using towels, pictures, etc.	Determine lines of symmetry in a 2-D figure. Example: Fold shapes, letters, etc.	Identify figures with a line of symmetry in the environment. Example: Butterfly, leaf, etc

Geometry	***Content Standard 1***1: Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.11.3.1 Replicate a three-dimensional model composed of cubes when given a physical model	Reproduce a 3-D model given a pattern.	Recognize a 3-D figure. Example: Given a figure, determine if it is or isn't 3-D	Arrange physical materials to form a 3-D figure. Example: Arrange boxes or cubes to form a 3-D figure	Given a physical model, make a similar 3-D figure. Example: Given a teacher constructed model and materials, allow the student to attempt to construct the model	Replicate a 3-D model. Example: Reproduce the figure from the teacher constructed model

Measurement	***Content Standard 1***2: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 3*** Time: Calendar	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.3.1 Determine the number of days in a month, days in a year and identify the number of weeks in a year	Recognize time segments, names, and uses.	Recognize that a calendar is used to measure daily events. Example: Keep a daily calendar for the class	Demonstrate an understanding of the number of days in a week. Example: Record weekly events using a calendar.	Demonstrate knowledge of the number of days and weeks in a month. Example: Create a calendar showing monthly events.	Apply calendar skills to determine days and weeks in a year. Example: Apply calendar skills to daily life: birthdays, holidays, school events, etc.
M.12.3.2 Recognize that 60 minutes equals 1 hour and that a day is divided into A.M. and P.M.	Use a clock.	Make a connection between clocks and time Example: Choose clocks from several items, use a timer on activities, use analog and/or digital clocks	Investigate the difference in the length of an hour and a minute. Example: Compare the lengths of time while participating in activities.	Realize that there are 24 hours in a day Example: Create a 24-hour schedule, daily timeline	Recognize that the day is divided into A.M. and P.M. Example: Classify activities into morning and night
M.12.3.3 Distinguish the temperature in contextual problems using the Fahrenheit scale on a thermometer Ex. If I need to wear mittens and a scarf, what temperature would it be? 35° F or 70° F?	Apply use of temperature on the Fahrenheit scale.	Recognize the difference in hot and cold. Example: Choose clothing based on whether it is hot or cold, choose whether to switch to heat or A/C on the thermostat	Recognize approximate range of temperature on Fahrenheit scale for cold. Example: Use of thermostat to make it warm according to the actual temperature, choose pictures to fit temperature conditions	Recognize approximate range of temperature on Fahrenheit scale for hot. Example: Use of thermostat to make it cool according to the actual temperature, choose pictures to fit temperature conditions	Recognize approximate range of temperature on Fahrenheit scale for cold or hot. Example: Use of thermostat to make it warm or cool according to the actual temperature, choose pictures to fit temperature conditions

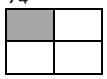
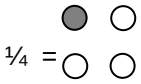
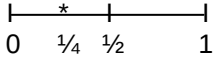
Measurement	***Content Standard 13***: Systems of Measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.3.6 Apply money concepts in contextual situations up to $10.00 Ex. • determine change with the least amount of currency • compare money	Distinguish between types of coins.	Recognize names and/or values of coins. Example: Match coins	Determine values of groups of like coins. Example: Separate and count coins from school store or cafeteria	Distinguish values of groups of unlike coins. Example: Purchase an item from a vending machine	Determine change with the least amount currency. Example: Pay for food at fast food restaurant, purchase item in a store
M.13.3.7 Read temperatures on Fahrenheit and Celsius scales in intervals of two and five	Read a temperature scale.	Recognize that a number on a temperature scale can represent hot or cold. Example: 30 °F is cold and 100 °F is hot	Choose a temperature on a Fahrenheit scale within 20 degrees Example: Determine if it is 70 degrees or 90 degrees while looking at a thermometer	Read a Fahrenheit scale to the nearest 20 degrees Example: On a scale determine if the temperature is closer to 60 degrees or 80 degrees	Read a Fahrenheit scale to the nearest 10 degrees Example: On a scale determine if the temperature is closer to 60 degrees or 70 degrees

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.3.1 Design a survey question after being given a topic and collect, organize, display and describe simple data using frequency tables or line plots, pictographs, and bar graphs	Collect data from a survey question.	Recognize that data can be grouped according to characteristics. Example: Sort or group candy by colors, students by clothing, etc.	Determine which characteristic to use as the base for the survey. Example: Decide whether to use food, color, size, shape, etc.	Apply given data to a graph template. Example: Students can instruct the teacher where the data should be placed on any pre-constructed graph or table template	Design a graph and summarize the results. Example: Favorite flavors of ice cream, class elections, etc.

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation ***Grade 3***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.3.1 Read and interpret pictographs and bar graphs in which symbols or intervals are greater than one	Read and use a pictograph and/or bar graph.	Recognize pictographs and/or bar graphs. Example: Collect samples from books, magazine, or internet for graphs	Explore symbols on pictographs and/or bar graphs. Example: Use favorite ice cream, favorite colors, favorite shapes, etc. for symbols on graphs	Construct a concrete pictograph and/or bar graph. Example: Construct a graph with data of class birthdays, favorite pizza of classmates, favorite TV shows, etc.	Design a pictograph and/or bar graph. Example: Explain and describe what the graph shows (oral or written)
DAP.15.3.2 Match a set of data with a graphical representation of the data	Find a relationship between a set of data and a graph.	Recognize that data can be displayed in an organized way. Example: Number of boys and girls in classroom, hair color	Arrange data into like groups. Example: Cars and trucks, apples and oranges	Convert groups of data into a graph. Example: Construct a pictograph of how students in this class get to school	Match a set of data to a graph. Example: Colored candy, milk cartons (vanilla and chocolate)

Data Analysis and Probability	***Content Standard 17***: Probability: Students shall understand and apply basic concepts of probability.				
Student Learning Expectation ***Grade 3*** Probability	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.17.3.1 Use fractions to predict probability of an event Ex. If there were 5 blue tiles, 3 red tiles, and 2 green tiles in a bag What is the probability you would pull out a green tile?	Predict the likelihood of an event.	Determine if the probability of an event is possible or not possible. Example: Choose a black tile from a group of all yellow colored tiles	Recognize part to whole group. Example: Use a set of colored tiles (red, blue, green, and yellow) to show that yellow tiles are part of the whole set of tiles	Determine the number of objects out of the whole. Example: Count the number of blue tiles out of a group of multiple colored tiles	Determine the number of objects out of the total fraction. Example: Count the number of red tiles out of the total number of colored tiles

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.4.1 Recognize equivalent representations for the same whole number and generate them by composing and decomposing numbers Ex. 1,076 = 1,000 + 70 + 6; 500 + 500 + 25 + 25 + 25 + 1; 250 + 250 + 250 + 250 + 75 + 1, etc…	When you combine and separate amounts they represent the same quantity.	Combine objects to represent a whole number 10 or less Example: Composition: A group of 5 apples can be made by combining 2 red and 3 green	Separate objects to represent a whole number 10 or less Example: Decomposition: 5 apples can be separated into 2 red and 3 green	Combine and separate objects to represent a whole number 20 or less Example: Composition: 20 can be made by combining: 10 and 10, 15 and 5. Decomposition: 20 can be separated into 4 and 16 or 12 and 8	Combine and separate objects to represent a whole number 20 or less in multiple ways Example: Use counting manipulatives to represent a given number in a multiple of combinations
NO.1.4.3 Use mathematical language and symbols to compare and order any whole numbers with and without appropriate technology (<, >, =)	Organize concrete sets of objects by quantity not size of objects	Compare quantities that are equal to each other. Example: Recognize matching sets of objects	Compare quantities of more than. Example: Recognize that 3 balls are more than 2 balls	Compare quantities of more than or less than. Example: Organize concrete objects into a certain order, such as, smallest to largest	Compare quantities or numeric values of more than, less than, or equal to. Example: Determine which value (3 or more groups) is largest or smallest (may go in ascending or descending order).

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.4.4 Write a fraction to name part of a whole, part of a set, a location on a number line, and the division of whole numbers, using models up to 12/12 Ex. ¼   ¼ = ¼ =  0 ¼ ½ 1 ¼ = One cookie shared by 4 children	Represent fractions as parts of a whole or parts of sets of objects.	Fold objects to represent a part of a whole or part of a set. Example: Fold rectangular shapes left side over right side to make halves (paper rectangles, napkins, pants, etc.), food that folds in half (tacos, fried pies, sandwich)	Identify a part of a set as a fractional part. Example: Divide food among groups of people, sharing items equally among friends	Recognize halves and fourths using concrete models. Example: Shade objects according to the given fractions; use a trapezoid and hexagon of the pattern blocks to show halves or 2 triangles and 1 rhombus to show halves; fold a square into fourths	Represent simple fractions using words, numerals, and physical models. Example: If you have two red blocks and two blue blocks, what fraction of the total blocks are red? (1/2) or If you have one red block and three blue blocks, what fraction of the total blocks is the red? (1/4) Or what fraction is blue? (3/4)

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.4.2 Apply number theory • determine if any number is even or odd • use the terms multiple, factor, and divisible by in an appropriate context • generate and use divisibility rules for 2, 5, and 10 • demonstrate various multiplication & division relationships	Determine if a number is odd or even.	Recognize a one-to-one correspondence. Example: Each student gets one pencil	Distinguish between a correspondence that is one-to-one and a correspondence that is not one-to-one. Example: A package of hot dogs compared to a package of hot dog buns	Demonstrate whether a single digit number is odd or even. Example: Use a set of pencils to show even or odd, or choose players for teams where there may be an odd number of children when playing the game	Determine if a number is even or odd. Example: Use a carton of eggs or number of cards dealt during a game to show even or odd.

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.3.4.1 Demonstrate, with and without appropriate technology, computational fluency in multi-digit addition and subtraction in contextual problems	Develop computational fluency in addition and subtraction.	Demonstrate the ability to add or subtract values with or without technology. Example: Use concrete objects to count values	Demonstrate the ability to add or subtract values with or without technology. Example: Use picture symbols to count values	Demonstrate the ability to add or subtract values with or without technology. Example: Use concrete objects, picture symbols, mental math, or written problems with symbols to find values	Develop fluency with adding to, taking away from, and equal grouping with or without technology. Example: Use the cost of two different items at a store to add or take away or make equal groups

Algebra	***Content Standard 4***: Patterns, Relations and Functions: Students shall recognize, describe and develop patterns, relations and functions.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.4.4.1 Identify a number that is more or less than any whole number using multiples of 10, 100 and/or 1000 Ex. 100 more than 4987 is 5087	Identify multiples of 10.	Recognize that objects can be grouped by quantity. Example: Sort or group colored candies, discs, etc.	Model groups of equal quantity for skip-counting. Example: Teacher will model a group of 10 and the student will copy the model	Arrange objects in groups for skip-counting. Example: Separate objects into groups, such as fruit, vegetables, etc.	Count objects using multiples of 10. Example: Count coins, crayons, markers, pencils, blocks, etc.

<table>
<tr><td>Algebra</td><td colspan="5">Content Standard 6: Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships.</td></tr>
<tr><td>Student Learning Expectation

Grade 4</td><td>Essence of Student Learning Expectation</td><td colspan="4">Less Complex ⟶ More Complex</td></tr>
<tr><td>A.6.4.1
Create a chart or table to organize given information and to understand relationships and explain the results
Ex.
Troy must read independently for 2 hours a week. If Troy reads 20 minutes a day, how long will it take him to read a total of two hours?</td><td>Create a sample of data.</td><td>Sort data.

Example:
Girls sit at one table, boys sit at another table; sort by color; sort by shape; use a Venn diagram.</td><td>Group data.

Example:
Sit at tables in groups, form groups for activities and summarize the results in a chart or table</td><td>Develop a data table.

Example:
To make a sandwich for one student it takes two slices of bread. How many slices of bread does it take to make a sandwich for 4 students?

<table><tr><th>Students</th><th>Slices of Bread</th></tr><tr><td>1</td><td>2</td></tr><tr><td>2</td><td>?</td></tr><tr><td>3</td><td>?</td></tr><tr><td>4</td><td>?</td></tr><tr><td></td><td></td></tr></table></td><td>Interpret a data table.

Example:
Using the previous example, decide how many slices of bread are needed for more students to have a sandwich; or answer questions about a data table that has been constructed earlier

<table><tr><th>Students</th><th>Slices of Bread</th></tr><tr><td>1</td><td>2</td></tr><tr><td>2</td><td>?</td></tr><tr><td>3</td><td>?</td></tr><tr><td>4</td><td>?</td></tr><tr><td>5</td><td>?</td></tr><tr><td>6</td><td>?</td></tr></table></td></tr>
</table>

Algebra	***Content Standard 7***: Analysis of Change: Students shall analyze change in various contexts.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.7.4.1 Identify, describe and generalize relationships in which quantities change proportionally Ex. If a car travels at a rate of 50 mph, how far will it travel in three hours? hours | 1 | 2 | 3 miles | 50 | 100 | 150	Recognize change	Recognize a change. Example: A cookie costs 1 quarter, 2 cookies cost 2 quarters, etc.	Recognize a change over time. Example: More cookies cost more quarters	Identify a change over time. Example: For each cookie you will need 1 more quarter	Identify and describe a change over time. Example: If 4 cookies cost 4 quarters or $1.00, what will 8 cookies cost?

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.4.1 Identify, describe and classify three-dimensional solids by properties including the number of vertices, edges, and shapes of faces using models	Identify the differences of 3-D solids	Match like 3-D solids. Example: Match real-world objects (cans, boxes, waffle cones) to 3-D solids.	Sort 3-D solids by their characteristics. Example: Sort groceries and cleaning supplies by cans versus boxes	Identify 3-D solids and their characteristics. Example: Categorize real-world 3-D solids by number of vertices, edges, or faces	Construct models of 3-D solids and identify their characteristics. Example: Art projects
G.8.4.2 Identify regular and irregular polygons including octagon See the Polygons page in the Appendix	Identify regular polygons.	Match like regular polygons. Example: Match real-world objects that are regular polygons	Sort regular polygons by their characteristics. Example: From an assortment of regular polygons, sort by the number of sides	Identify regular polygons and their characteristics. Example: Categorize real-world regular polygons by the number of sides or corners	Draw/collect pictures of regular polygons and identify their characteristics. Example: Draw or collect pictures of regular polygons; construct regular polygons with an art project
G.8.4.4 Identify and describe intersecting, perpendicular and parallel lines in problem solving context	Identify intersecting and parallel lines.	Recognize where lines intersect or are parallel. Example: Maneuver a wheelchair down a hallway through an intersection or through rows of chairs to demonstrate parallel or intersecting lines	Identify where lines intersect or are parallel. Example: Collect or draw pictures or maps, look at railroad tracks	Describe intersecting or parallel lines. Example: Read a map of the building or of the city; have the student to describe the way out of the building during an emergency	Draw a map or a diagram containing intersecting or parallel lines. Example: Draw a map of the classroom or building

Geometry	***Content Standard 11***: Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.11.4.1 Construct a three-dimensional model composed of cubes when given an illustration	Reproduce a 3-D model given a pattern.	Recognize a 3-D figure. Example: Given a figure, determine if it is or isn't 3-D	Arrange physical materials to form a 3-D figure. Example: Arrange boxes or cubes to form a 3-D figure	Given a physical model, make a 3-D figure. Example: Given a teacher constructed model and materials, allow the student to attempt to construct the model	Replicate a 3-D model. Example: The student will reproduce the figure from the teacher constructed model

Measurement	***Content Standard 12***: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.4.2 Distinguish the temperature in contextual problems using the Fahrenheit scale on a thermometer	Apply use of temperature on the Fahrenheit scale.	Recognize the difference in hot and cold. Example: Choose clothing based on whether it is hot or cold, choose whether to switch to heat or A/C on the thermostat	Recognize approximate range of temperature on Fahrenheit scale for cold. Example: Use of thermostat to make it warm according to the actual temperature, choose pictures to fit temperature conditions	Recognize approximate range of temperature on Fahrenheit scale for hot. Example: Use of thermostat to make it cool according to the actual temperature, choose pictures to fit temperature conditions	Recognize approximate range of temperature on Fahrenheit scale for cold or hot. Example: Use of thermostat to make it warm or cool according to the actual temperature, choose pictures to fit temperature conditions

Measurement	***Content Standard 13***: Systems of Measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.4.5 Apply money concepts in contextual situations Ex. • determine the better buy • determine change back with the least amount of currency • compare money	Distinguish between amounts of money.	Recognize names and/or values of coins. Example: Match coins to a template	Determine values of groups of like coins. Example: Separate and count coins from school store or cafeteria	Distinguish values of groups of unlike coins. Example: Purchase an item from a vending machine using coins of various values	Determine change with the least amount currency. Example: Pay for food at fast food restaurant, purchase item in a store that require change to be returned
M.13.4.6 Read temperatures on Fahrenheit and Celsius scales	Read a temperature scale.	Recognize that a number on a temperature scale can represent hot or cold. Example: 0 °F is cold and 100 °F is hot	Choose a temperature on a Fahrenheit scale within 20 degrees Example: Determine if it is 70 degrees or 90 degrees while looking at a thermometer	Read a Fahrenheit scale to the nearest 20 degrees Example: On a scale determine if the temperature is closer to 60 degrees or 80 degrees	Read a Fahrenheit scale to the nearest 10 degrees Example: On a scale determine if the temperature is closer to 60 degrees or 70 degrees

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.4.1 Create a data collection plan after being given a topic and collect, organize, display, describe and interpret simple data using frequency tables or line plots, pictographs and bar graphs	Collect data from a survey question.	Recognize that data can be grouped according to characteristics. Example: Sort or group candy by colors, students by hair or eye color, etc.	Determine which characteristic to use as the base for the survey. Example: Decide whether to use food, color, size, shape, etc.	Apply given data to a graph template. Example: Students can instruct the teacher where the data should be placed on any pre-constructed graph or table template	Design a graph and summarize the results. Example: Favorite flavors of ice cream, class elections, etc.

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.4.1 Represent and interpret data using pictographs, bar graphs and line graphs in which symbols or intervals are greater than one	Read and use a pictograph and/or bar graph.	Recognize pictographs and/or bar graphs. Example: Collect samples from books, magazine, or internet and make a graph	Explore symbols on pictographs and/or bar graphs. Example: Use favorite ice cream, favorite colors, favorite shapes, etc. for symbols on graphs	Construct a concrete pictograph and/or bar graph. Example: Construct a graph with data of class birthdays, favorite pizza of classmates, favorite TV shows, etc.	Design a pictograph and/or bar graph. Example: Explain and describe what the graph shows (oral or written)
DAP.15.4.2 Match a set of data with a graphical representation of the data	Find a relationship between a set of data and a graph.	Recognize that data can be displayed in an organized way. Example: Organize/display data for number of boys and girls in classroom, hair color, etc.	Arrange data into like groups. Example: Cars and trucks, apples and oranges	Convert groups of data into a graph. Example: Construct a pictograph of how students in this class get to school	Match a set of data to a graph. Example: Colored candy, milk cartons (vanilla and chocolate)

Data Analysis and Probability	***Content Standard 17***: Probability: Students shall understand and apply basic concepts of probability.				
Student Learning Expectation ***Grade 4***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.17.4.1 Use fractions to predict probability of an event Ex. There are 5 blue tiles, 3 red tiles, and 2 green tiles What is the probability of pulling out a green tile?	Predict the likelihood of an event.	Determine if the probability of an event is possible or not possible. Example: Choose a black tile from a group of all yellow colored tiles	Recognize part to whole. Example: Use a set of colored tiles (red, blue, green, and yellow) to show that yellow tiles are part of the whole set of tiles	Determine the number of objects out of the whole group. Example: Count the number of blue tiles out of a group of multiple colored tiles	Determine the number of objects out of the total fraction. Example: Count the number of red tiles out of the total number of colored tiles

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.5.1 Use models and visual representations to develop the concepts of the following: <u>Fractions</u>: • parts of unit wholes • parts of a collection • locations on number lines • locations on ruler (benchmark fractions) • divisions of whole numbers <u>Ratios</u>: • part-to-part (2 boys to 3 girls) • part-to-whole (2 boys to 5 people) <u>Percents</u>: • part-to-100	Recognize the concepts of fractions and percents	Recognize that 100% represents one whole Example: Total students in a class = 100%	Investigate percentages that represents parts of a whole (fractions) Example: How many boys in class? How many girls in class?	Demonstrate an understanding of finding a specific percent of a number Example: Number of boys in class compared to number of girls in class	Convert fractions to a percent Example: Number of boys: Whole class or Number of girls: Whole class

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.5.1 Use divisibility rules to determine if a number is a factor of another number (2, 3, 5, 10)	Determine if a number divides into another number	Recognize numbers are made up of combinations of other numbers Example: Carton of plastic eggs, 5 nickels in a quarter, 10 dimes in a dollar, etc.	Investigate combinations of numbers Example: Model 5 pennies in a nickel, 5 nickels in a quarter, 10 dimes in a dollar, etc.	Take a group of objects and split evenly to see if divisible Example: 30 objects split into 5 groups	Use a calculator to determine divisibility Example: Use a calculator to determine if 30 divided by 5 is a whole number
NO.2.5.4 Apply rules (conventions) for order of operations to whole numbers where the left to right computations are modified only by the use of parentheses	Apply rules for +, -, x, ÷ for whole numbers working from left to right	Recognize the mathematical symbols for the order of operations Example: Picture matching	Differentiate between the operations Example: Cards, number tiles	Model the order of operations left to right Example: Use concrete objects to model	Demonstrate the order of operations left to right Example: Picture cards in story problems
NO.2.5.5 Model addition, subtraction, and multiplication of fractions with like and unlike denominators and decimals	Model addition & subtraction of fractions with like denominators	Recognize parts of a whole Example: Cut an apple into fourths compared to a whole apple, etc.	Explore combinations of equal parts that make a whole Example: Four quarters make a dollar, etc.	Recognize the relationship of adding equal parts to make a whole Example: Use manipulatives of pizza, pie, etc.	Recognize the relationship of subtracting equal parts from a whole Example: Use manipulatives of pizza, pie, etc.

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.3.5.3 Solve, with and without appropriate technology, two-step problems using a variety of methods and tools (i.e. objects, mental computation, paper and pencil)	Solve two-step problems	Recognize that some situations take more than one step to accomplish Example: Make chocolate milk or a sandwich	Explore examples of two-step situations Example: Unlock a door that has 2 locks (deadbolt) with a key, sharpen a pencil (put in pencil and then sharpen)	Identify example of two-step problems Example: Buy a coke from a machine and count change.	Solve two-step problems Example: Choose items at a store or restaurant and pay for the items.

Algebra	***Content Standard 4***: Patterns, Relations and Functions: Students shall recognize, describe and develop patterns, relations and functions.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.4.5.2 Interpret and write a rule for a one operation function table Ex. adding 3	Adding or subtracting with a constant change.	Use a clock or calendar, add one more day or hour.	Investigate constant patterns of change Example: Birthdays- one year you are nine years old and the next you are ten years old	Interpret a rule for a one-operation function table. Example: How many school days it takes to make a school month. Based on the number of students in the class, count the number of items on a school cafeteria tray Ex. Each tray has four items, two trays have eight items, three trays would have twelve items, etc.	Exhibit understanding of a one-operation function table. Example: Months of the year- If there are twelve months in one year, how many are in two years?

Algebra	***Content Standard 5***: Algebraic Representations: Students shall represent and analyze mathematical situations and structures using algebraic symbols.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.5.5.2 Write expressions containing one variable (a letter representing an unknown quantity) using rules for addition and subtraction	A variable represents an unknown	Recognize that one item can take the place of another. Example: Rover (dog)= pet Create a recipe-powdered drink mix packet + n =Pitcher of drink Answer: N= water	Identify variables in the environment. Example: Identify symbols used in common situations. (stop sign, information, telephone, restroom, etc.) Tom's picture represents Tom	Interpret variables in the environment Example: The stop sign means to stop. Poison sign indicates that it's harmful. Cross walk, picture with circle and slash through it meaning no. Thermostat (lower numbers= cooler, higher numbers= warmer) b stands for boy g stands for girl	Write simple expression with an unknown Example: Story problem with an unknown using words, pictures, or objects.

Algebra	***Content Standard 5***: Algebraic Representations: Students shall represent and analyze mathematical situations and structures using algebraic symbols.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.5.5.3 Select, write and evaluate algebraic expressions with one variable by substitution Ex. Evaluate x+4 if x=7	Recognize and write algebraic expressions.	Recognize algebraic expressions with one variable Example: Recognize that X + 4 is an expression	Identify algebraic expressions with one variable. Example: Use a picture chart to determine number of days to ride the bus. Figure absences, days student bought lunch, number of basketball games won out of the season, etc.	Utilize models to write algebraic expressions. Example: Teacher sets up an equation for student to copy using colored blocks or cubes. Clothing combinations (shirt + pants= outfit) Combine fruit to create a fruit salad (apples + bananas= fruit salad) Use picture cards to choose food from appropriate food groups to meet daily nutritional requirements.	Write an algebraic expression with one variable. Example: Use an object/ picture/ word problem and write the problem and solve.

Algebra	***Content Standard 7***: Analysis of Change: Students shall analyze change in various contexts.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.7.5.1 Model and describe quantities that change using real world situations Ex. age and height	Identify real world changes.	Recognize real world examples of change. Example: Grow a seed to a plant and document changes, change of seasons/weather Create a timeline of their life.	Determine quantities that change. Example: If 1 cookie costs a quarter, how much does 2 cookies cost?	Model quantities that change. Example: Temperature, weight, height, class size, amount of liquid in milk carton, etc.	Demonstrate quantities that change. Example: Hourly wages, scores in sporting events, ice that melts, water that boils, etc.

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.5.2 Identify and draw congruent, adjacent, obtuse, acute, right and straight angles (Label parts of an angle: vertex, rays, interior and exterior)	ID types of angles and label their parts.	Match congruent angles. Example: Given two or more choices, use appropriate mode of communication (eye gaze, pointing, switch, etc.) to select a congruent angle. Given a worksheet, point to, circle, or draw a line to show two congruent angles.	Sort angled manipulatives into different groups. Example: Straight angles to straight angles, acute angles to acute angles, right angles to right angles, etc. (Cut out shapes in magazines with each of the angles.)	Match angles with their names. Example: Picture frame corners matched to right angle. A tabletop edge matches to straight angle.	Match and label parts of an angle. Example: Given a label, place it on a model at the appropriate location.

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.5.3 Model and identify circle, radius, diameter, center, circumference and chord	Recognize a circle and its parts.	Identify a circle. Example: Given two or more choices, use appropriate mode of communication (eye gaze, pointing, switch, etc.) to select a circle.	Identify and sort circles from a group of shapes. Example: Find circles in real world pictures, in and out of the classroom. (Circle shape of survival signs.)	Recognize the center of a circle. Example: Point to or label the center of a circle. (Car wheel, bicycle wheel, pizza, donut, etc.)	Recognize or draw the radius, diameter, chord, and/or circumference of a circle. Example: Cut a pizza and identify the parts of a circle. Using a string, show the parts of a circle on a picture or real world object. Trace a circle with a glass. Use string to find the circumference.
G.8.5.4 Model and identify the properties of congruent figures	Understand properties of figures with the same shape and size.	Select congruent figures. Example: Given two or more choices, use appropriate mode of communication (eye gaze, pointing, switch, etc.) to select congruent figures.	Sort congruent figures. Example: Use polygons to sort congruent figures, with or without technology.	Match congruent shapes. Example: Use shapes to play a game to match congruent figures.	Identify the properties of congruent shapes. Example: Congruent = same shape + same size + same angle measurement.

Geometry	***Content Standard 11***: Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation Grade 5	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.11.5.1 Using grid paper, draw and identify two-dimensional patterns (nets) for cubes	Recognize two-dimensional shapes (nets) are used to make three-dimensional objects	Identify 2-D objects. Ex. Give the students a variety of polygons to identify and/or sort.	Identify 3-D objects. Example: Identify 3-D objects in the real world. (party hats, canned goods, boxes, ice cream cones, etc.)	Take real world objects and make 2-D nets. Example: Take a cereal or raisin box and open it flat to create a 2-D net for a rectangular prism. An oatmeal box can be opened flat to create a 2-D net for a cylinder.	Match 2-D patterns (nets) to 3-D objects. Example: Match 2-D nets from cut-out shapes to 3-D objects.

Measurement	***Content Standard 12***: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.5.1 Identify and select appropriate units and tools to measure Ex. angles with degrees, distance with feet	Select the correct tools for measuring.	Identify appropriate measurement tools for given different objects/pictures, Example: Clock to time, scale to weight, ruler to length, money to purchases (eye gaze, pointing, switch, etc.)	Select appropriate tools for measurement. Example: Follow a recipe, and use choices of customary measures. (cup or teaspoon of flour, etc.)	Demonstrate appropriate tools for measurement. Example: Mary bought bananas at the store. Which did she use, a scale or a ruler?	Use the correct measurement tool for real world situations. Example: Draw circles, weigh food, bake a cake, find temperature, etc.
M.12.5.2 Make conversions within the customary measurement system in real world problems Ex. hours to minutes, feet to inches, quarts to gallons, etc	Convert regular measurement.	Recognize that 12 in = 1 foot using rulers	Demonstrate that 3 12-inch rulers are a yard by comparison	Demonstrate 2 cups = 1 pint by pouring water into containers	Demonstrate that 10 dimes = $1.00.

Measurement	***Content Standard 13***: Systems of Measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.5.1 Solve real world problems involving one elapsed time, counting forward (calendar and clock)	Counting forward on a calendar and clock.	Recognize a completed activity Example: On a schedule, show completion of an activity by marking off, using eye gaze, pointing to, etc.	Recognize a completed daily/weekly schedule Example: Document a beginning and ending time using a variety of media to show a completed schedule	Construct a monthly calendar of class/school activities Example: Calendar of events with pictures, words, drawing, etc.	Demonstrate an understanding of morning (a.m.) and afternoon (p.m.) activities Example: Make a chart with pictures of activities at different times

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.5.2 Collect numerical and categorical data using surveys, observations and experiments that would result in bar graphs, line graphs, line plots and stem-and-leaf plots	Collect data and display in various organized forms.	Using an appropriate communication device or picture symbols, collect data from classmates. Example: How did the students get to school? (bus, walk, car, bike, etc.)	Collect data from other classrooms/family. Example: What is your favorite pet? What is your favorite sport?	Collect information from a science experiment. Example: Bubbles (color of the bubble, size of the bubble, how long the bubble will last, how many bubbles, etc.)	Collect information from their environment. Example: Weather (hot or cold, rain or sunshine), Birdfeeder (how many birds, kinds of birds)
DAP.14.5.3 Construct and interpret frequency tables, charts, line plots, stem-and-leaf plots and bar graphs	Create and explain various forms of organized data.	Create and interpret a chart or graph using an appropriate communication device, picture symbols, or technology Example: Pictorial graphs (What is the weather today? What characteristic of the month does this show?)	Create and interpret bar graphs. Example: Hair color, eye color, etc.	Create and interpret tables and charts. Example: Favorite pet, songs, singing groups, movies, etc.	Create and interpret line plots. Example: Favorite sport, cars, books, etc.

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation Grade 5	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.5.1 Interpret graphs such as line graphs, double bar graphs, and circle graphs	Demonstrate an understanding of various graphs.	Explain various graphs using an appropriate communication device, picture symbols, technology, or eye gazing, Example: Given choices, student will choose answer that represents collected data results.	Analyze bar graphs. Example: Answer questions about the collected data. (favorite activities like art or P.E., video games	Analyze charts and graphs. Example: Transfer information from a chart to a graph. (favorite ice cream, teams, etc.)	Match results with a graphic representation. Example: Match collected data with the appropriate graphic representation. (movies and restaurants)

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.6.1 Demonstrate conceptual understanding to find a specific percent of a number, using models, real life examples, or explanations	Recognize the concepts of fractions and percents	Recognize that 100% represents one whole Example: Total students in a class = 100%	Investigate percentages that represents parts of a whole (fractions) Example: How many boys in class? How many girls in class?	Demonstrate an understanding of finding a specific percent of a number Example: Number of boys in class compared to number of girls in class	Convert fractions to a percent Example: Number of boys: Whole class or Number of girls: Whole class

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.6.1 Use divisibility rules to determine if a number is a factor of another number (4, 6, 9)	Determine if a number divides into another number	Recognize numbers are made up of combinations of other numbers Example: 4 quarters in a dollar, 5 nickels in a quarter,	Investigate combinations of numbers Example: Package of 6 cookies or peanut butter crackers, (1, 2, 3, and 6 are factors)	Find combinations of numbers Example: 6 pack of sodas (1, 2, 3, and 6 are factors)	Demonstrate a group of factors for a given number Example: Tic-tac-toe game board (1, 3, and 9 are factors), 1 and half dozen egg carton (1, 2, 3, and 6 are factors)
NO.2.6.4 Apply rules (conventions) for order of operations to whole numbers with and without parentheses	Apply rules for +, -, x, ÷ for whole numbers working from left to right	Recognize the mathematical symbols for the order of operations Example: Picture matching	Differentiate between the operations Example: Cards, number tiles	Model the order of operations left to right Example: Use concrete objects to model	Demonstrate the order of operations left to right Example: Utilize mathematical problems
NO.2.6.5 Model multiplication and division of fractions (including mixed numbers) and decimals using pictures and physical objects Ex. weight, money and measuring cups	Model addition subtraction, and multiplication of fractions with like denominators	Recognize parts of a whole Example: Measuring cups-how many ¼ cups or ½ cups are needed to make 1 cup	Explore combinations of equal parts that make a whole Example: Four quarters make a dollar, etc.	Recognize the relationship of adding and /or multiplying equal parts to make a whole Example: Use manipulatives of pizza, pie, etc. and show 4 parts (fourths) are needed to make the whole or halves (2 parts) or eighths(8 parts) may be used	Recognize the relationship of subtracting equal parts from a whole Example: Use manipulatives of pizza, pie, etc. and subtract equal parts as they are distributed to the class

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.3.6.3 Solve, with and without appropriate technology, multi-step problems using a variety of methods and tools (i.e., objects, mental computation, paper and pencil)	Solve multiple step problems	Recognize parts of a whole Example: The sequential steps of washing a load of clothes	Explore combinations of equal parts that make a whole Example: Steps is using a microwave	Recognize the relationship of adding equal parts to make a whole Example: Different combinations of money that make a whole dollar	Recognize the relationship of subtracting equal parts from a whole Example: Divide a pizza or pie in equal parts to distribute or divide a bag of popcorn into equal sets to distribute

Algebra	***Content Standard 4***: Patterns, Relations and Functions: Students shall recognize, describe and develop patterns, relations and functions.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.4.6.2 Interpret and write an algebraic rule for a one operation function table Ex. y=x+ 3	Adding or subtracting with a constant change	Using a clock or calendar, add one more day or hour. Example: Daily or weekly schedules	Investigate constant patterns of change Example: Taking medicine, sequence activities, life cycles, steps in a recipe or task, etc.	Interpret a rule for a one-operation function table. Example: Saving money	Exhibit understanding of a one-operation function table. Example: Months of the year- If there are twelve months in one year, how many are in two years?

Algebra	***Content Standard 5***: *Algebra*ic Representations: Students shall represent and analyze mathematical situations and structures using *algebra*ic symbols.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.5.6.2 Write simple algebraic expressions using appropriate operations (+, -, x, /) with one variable	A variable represents an unknown	Recognize that one item can take the place of another. Example: Rover (dog)= pet Create a recipe-powdered drink mix packet + n =Pitcher of drink Answer: N= water	Identify variables in the environment. Example: Identify symbols used in common situations. (stop sign, information, telephone, restroom, etc.) Tom's picture represents Tom	Interpret variables in the environment Example: The stop sign means to stop. Poison sign indicates that it's harmful.Cross walk, picture with circle and slash through it meaning no. Thermostat (lower numbers= cooler, higher numbers= warmer) b stands for boy g stands for girl	Write simple expression with an unknown Example: Story problem with an unknown using words, pictures, or objects.
A.5.6.3 Evaluate algebraic expressions with one variable using appropriate properties and operations (+, -, x, /)	Recognize and write algebraic expressions.	Recognize algebraic expressions with one variable Example: Recognize that X + 4 is an expression	Identify algebraic expressions with one variable. Example: Use a picture chart to determine number of days to ride the bus. Figure absences, days student bought lunch, number of basketball games won out of the season, etc.	Utilize models to write algebraic expressions. Example: Teacher sets up an equation for student to copy using colored blocks or cubes. Clothing combinations (shirt + pants= outfit) Combine fruit to create a fruit salad (apples + bananas= fruit salad) Use picture cards to choose food from appropriate food groups to meet daily nutritional requirements.	Write an algebraic expression with one variable. Example: Use an object/ picture/ word problem and write the problem and solve.

Algebra	***Content Standard 7***: Analysis of Change: Students shall analyze change in various contexts.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.7.6.1 Identify and compare situations with constant or varying rates of change Ex. a student's rate of growth each year is a varying rate, hourly wages is a constant rate	Identify real world changes.	Recognize real world examples of change. Example: Grow a seed to a plant and document changes, change of seasons/weather Create a timeline of their life.	Determine quantities that change. Example: If 1 cookie costs a quarter, how much does 2 cookies cost?	Model quantities that change. Example: Temperature, weight, height, class size, amount of liquid in milk carton, etc.	Demonstrate quantities that change. Example: Hourly wages, scores in sporting events, ice that melts, water that boils, etc.

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.6.3 Identify, describe, draw, and classify triangles as equilateral, isosceles, scalene, right, acute, obtuse, and equiangular	Show an understanding of triangles.	Choose a triangle using shapes Example: Pick out the triangles from a collection of geometric shapes	Choose triangles from the diagram. Example: Choose the triangles from a diagram of various geometric shapes	Find and identify triangles in the environment Example: Yield sign, house top viewed from the end of house, table or desk legs	Identify and draw right triangles using tools to draw a right angle (corner of a page) and a ruler
G.8.6.4 Draw, label and determine relationships among the radius, diameter, center and circumference (e.g. radius is half the diameter) of a circle	Recognize a circle and label its parts.	Identify a circle. Example: Given two or more choices, use appropriate mode of communication (eye gaze, pointing, switch, etc.) to select a circle.	Identify and sort circles from a group of shapes. Example: Find circles in real world pictures, in and out of the classroom. (circle shape of survival signs.)	Recognize the center of a circle. Example: Point to or label the center of a circle. (car wheel, bicycle wheel, pizza, donut, etc.)	Recognize or draw the radius, diameter, chord, and/or circumference of a circle. Example: Cut a pizza and identify the parts of a circle. Use string to show the parts of a circle on a picture or real world object. Trace a circle with a glass. Use string to find the circumference.

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.6.5 Identify similar figures and explore their properties	Understand properties of figures with the same shapes.	Select congruent figures. Example: Select congruent figures given two or more choices using appropriate mode of communication (eye gaze, pointing, switch, etc.) to.	Sort congruent figures. Example: Use polygons to sort congruent figures, with or without technology.	Match congruent shapes. Example: Play a game to match congruent figures using shapes.	Identify the properties of congruent shapes. Example: Use 2-dimensional shapes to demonstrate that congruence = same shape + same size + same angle measurement.

Geometry	***Content Standard 11:*** Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.11.6.1 Identify two-dimensional patterns (nets) for three-dimensional solids, such as prisms, pyramids, cylinders, and cones	Recognize the 2-D patterns (nets) for 3-D solids.	Identify 2-D objects. Ex. Give the students a variety of polygons to identify and/or sort.	Identify 3-D objects. Example: Identify 3-D objects in the real world. (party hats, canned goods, boxes, ice cream cones, etc.)	Take real world objects and make 2-D nets. Example: Take a cereal or raisin box and open it flat to create a 2-D net for a rectangular prism. An oatmeal box can be opened flat to create a 2-D net for a cylinder.	Match 2-D patterns (nets) to 3-D objects. Example: Match 2-D nets from cut-out shapes to 3-D objects.

Measurement	***Content Standard 12***: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.6.1 Identify and select appropriate units and tools from both systems to measure Ex. angles with degrees, distance with feet/meters	Select the correct tools for measuring	Given different objects/pictures, identify appropriate measurement tools. Example: Clock to time, scale to weight, ruler to length, money to purchases, kitchen timer to task (eye gaze, pointing, switch, etc.)	Select appropriate tools for measurement. Example: Follow a recipe and use choices of customary measures. (a cup or teaspoon of flour, etc.)	Demonstrate appropriate tools for measurement. Example: Mary bought bananas at the store. Which did she use, a scale or a ruler? Example: Measure water for a plant or animal.	Use the correct measurement tool for real world situations. Example: Weigh produce at the grocery store, bake cookies, take temperature with a thermometer, measure laundry detergent, etc.
M.12.6.2 Make conversions within the same measurement system in real world problems Ex. hours to minutes to seconds, meters to centimeters, feet to inches, liters to milliliters, quarts to gallons, etc	Convert regular measurement.	Recognize that 12 in = 1 foot using rulers	Demonstrate that 3 12-inch rulers are a yard by comparison	Demonstrate 2 cups = 1 pint by pouring water into containers	Demonstrate that 10 dimes = $1.00.

Measurement	***Content Standard 13***: Systems of Measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.6.1 Solve real world problems involving one elapsed time, counting forward and backward (calendar and clock).	Counting forward on a calendar and clock.	Recognize a completed activity. Example: On a schedule, a show completion of an activity by marking off, using eye gaze, pointing to, etc.	Recognize a completed daily/weekly schedule. Example: Document a beginning and ending time using a variety of media to show a completed schedule.	Construct a monthly calendar of class/school activities. Example: Calendar of events with pictures, words, drawing, etc.	Demonstrate an understanding of morning (a.m.) and afternoon (p.m.) activities. Example: Make a chart with pictures of activities at different times.

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.6.2 Collect data and select appropriate graphical representations to display the data including Venn diagrams	Collect data and display in various organized forms.	Using an appropriate communication device or picture symbols, students will collect data from their classmates. Example: How did the students get to school? (bus, walk, car, bike, etc.)	Collect data from other classrooms/family. Example: What is your favorite pet? What is your favorite sport?	Collect information from a science experiment. Example: Bubbles (color of the bubble, size of the bubble, how long the bubble will last, how many bubbles, etc.)	Collect information from their environment. Example: Weather (hot or cold, rain or sunshine), Birdfeeder (how many birds, kinds of birds)
DAP.14.6.3 Construct and interpret graphs, using correct scale, including line graphs and double-bar graphs	Create and explain various forms of organized data.	Using an appropriate communication device, picture symbols, or technology, students will create and interpret a chart or graph. Example: Pictorial graphs (What is the weather today? What characteristic of the month does this show?)	Students will create and interpret bar graphs. Example: Hair color, eye color, etc.	Students will create and interpret tables and charts. Example: Favorite pet, songs, singing groups, movies, etc.	Students will create and interpret line plots. Example: Favorite sport, cars, books, etc.

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation ***Grade 6***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.6.1 Interpret graphs such as double line graphs and circle graphs	Demonstrate an understanding of various graphs.	Explain various graphs. using an appropriate communication device, picture symbols, technology, or eye gazing, Example: Given choices, choose answer that represents collected data results.	Analyze bar graphs. Example: Answer questions about the collected data. (favorite activities like art or P.E., video games)	Analyze charts and graphs. Example: Transfer information from a chart to a graph. (favorite ice cream, teams, etc.)	Match results with a graphic representation. Example: Match collected data with the appropriate graphic representation. (movies and restaurants)

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.1.7.5 Compare and represent integers, fractions, decimals and mixed numbers and find their approximate location on a number line	Introduce the number line.	Introduce the number line. Example: Large number line on the floor; move from one position to another	Move on a number line. Example: Large number line, move from zero to another position	Represent a position on a number line. Example: Given a number line, represent moving from zero to another position	Add with a number line. Example: Given a number line, represent moving from zero to a new position and then make a second move to obtain a sum
NO.1.7.6 Recognize subsets of the real number system (natural, whole, integers, rational, and irrational numbers)	Represent subsets.	Introduce subsets. Example: Using a teacher made model copy the model; out of a group of fruits, apples and oranges are a subset; out of a group of shapes, circles is a subset	Classify students by one classification. Example: boy or girl; right or left handed	Classify student activity into groups with overlaps. Example: Use a Venn diagram to classify students by 3 categories that overlap such as brothers, sisters, or neither; favorite foods or sports may also be used	Recognize items can be sorted into like groups. Example: With ropes make a Venn diagram with overlap sections so students can group by characteristic

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.7.3 Apply rules (conventions) for order of operations to integers and positive rational numbers including parentheses, brackets or exponents	Combine things to get desired result.	Follow a sequence of tasks or directions. Example: Follow steps in a recipe, schedule, use of a vending machine, laundry skills, hand washing, etc.	Evaluate simple algebraic expressions using one type of operation (add, subtract, multiply, divide) Example: Add a grocery list, make change, purchase multiple items, create a budget	Evaluate simple algebraic expressions using one type of operation Example: Perimeter, circumference, area, distance, gross pay, price per pound	Evaluate simple algebraic expressions involving two or more operations Example: Length of a fence to surround a pool, amount of carpet needed for a room, pay in a pay period, rent a car, hire a plumber
NO.2.7.4 Model and develop addition, subtraction, multiplication and division of integers	Model addition, subtraction, multiplication, and division with and without appropriate manipulatives	Add positive integers Example: Combine like items using multiple types of items such as pattern blocks	Add and subtract positive integers Example: Combine integer tiles to represent a sum or difference of two values	Multiply positive integers to obtain a product less than or equal to 10 Example: When shopping, 5 students select 2 items each; what will the total number of items be?	Multiply and divide integers to obtain a product less than or equal to 20 Example: Group 20 items into equal sets (2 groups of 10, 4 groups of 5, etc.) and smaller values

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
NO.3.7.3 Determine when an estimate is sufficient and use estimation to decide whether answers are reasonable in problems including fractions and decimals	Increase to the next highest integer	Identify monetary values Example: Match 1, 5, and 10 dollar bills	Introduce dollar bills and coins Example: Recognize one dollar and some change would require two dollars to purchase an item	Recognize an amount over 5 dollars needs additional dollars Example: Combine a 5 dollar bill with different amounts of 1 dollar bills to purchase an item	Recognize an amount over 10 dollars needs additional dollars Example: Combine a 10 dollar bill with different amounts of 1 and/or 5 dollar bills to purchase an item

<table>
<tr><td>Algebra</td><td colspan="5">Content Standard 4: Patterns, Relations and Functions: Students shall recognize, describe and develop patterns, relations and functions.</td></tr>
<tr><td>Student Learning Expectation

Grade 7</td><td>Essence of Student Learning Expectation</td><td colspan="4">Less Complex ⟶ More Complex</td></tr>
<tr><td>A.4.7.1
Create and complete a function table (input/output) using a given rule with two operations</td><td>See the relationship between input/output</td><td>Recognize a function table

Example:
Visual examples of input/output

<table><tr><td>1 cake</td><td>2 eggs</td></tr><tr><td>2 cakes</td><td>4 eggs</td></tr><tr><td>3 cakes</td><td>6 eggs</td></tr></table></td><td>Read a function table

Example:
Traffic light<table><tr><td>Red</td><td>Stop</td></tr><tr><td>Yellow</td><td>Slow</td></tr><tr><td>Green</td><td>Go</td></tr></table>
Water faucet<table><tr><td>Red</td><td>Hot</td></tr><tr><td>Blue</td><td>Cold</td></tr></table></td><td>Record a function table

Example:
Tires on a bicycle<table><tr><td>Number of bikes</td><td>Number of tires</td></tr><tr><td>1</td><td>2</td></tr><tr><td>2</td><td>4</td></tr><tr><td>3</td><td>6</td></tr></table></td><td>Complete a function table

Example:
A pack of gum containing 5 sticks. How many sticks of gum would there be in 2 packs? In 3 packs?<table><tr><td>Packs of gum</td><td>Number of sticks</td></tr><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>15</td></tr></table></td></tr>
<tr><td>A.4.7.2
Identify and extend patterns in real world situations</td><td>Identify patterns</td><td>List information that has a pattern

Example:
Use students' birthdays and how they repeat yearly</td><td>Construct/record a concrete pattern

Example:
Using a calendar, record activities that repeat consistently, stack containers to form a triangular shape</td><td>Identify the change in a given pattern

Example:<table><tr><td>Students</td><td>Shoes</td></tr><tr><td>1</td><td>2</td></tr><tr><td>2</td><td>4</td></tr><tr><td>3</td><td>6</td></tr><tr><td>4</td><td>8</td></tr></table>What is the change in the number of shoes for each additional student?</td><td>Identify the value from given data

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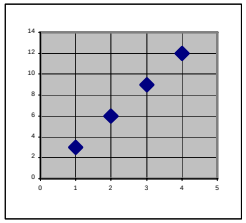
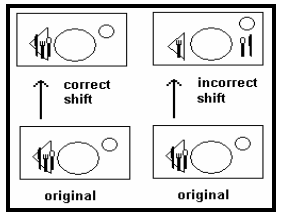
Algebra	***Content Standard 5***: Algebraic Representations: Students shall represent and analyze mathematical situations and structures using algebraic symbols.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
A.5.7.1 Solve and graph one-step linear equations and inequalities using a variety of methods (i.e., hands-on, inverse operations, symbolic) with real world application with and without technology	Solve simple equations	Recognize that you need more of something to complete a task Example: Decide how many more napkins needed to set a table of six, doubling or halving a recipe, how much more money needed Guess and check (substitution)	Solve equations using manipulatives and guess and check (substitution) Example: Use pictures to solve equations (draw pictures of the manipulatives)	Figure totals by adding /subtracting the same number with or without manipulatives Example: 1 + 3 = 4 2 + 3 = 5 3 + 3 = 6 5 – 1 = 4 5 – 2 = 3 5 – 3 = 2	Find products using a constant factor Example: Each bird has 2 feet, how many feet for 1, 2, and 3 birds? 2 X 1 = 2 2 X 2 = 4 2 X 3 = 6
A.5.7.2 Solve simple linear equations using integers and graph on a coordinate plane Ex. use a T chart	Graph relationships in Quadrant I	Introduce coordinate plane Example: Make a coordinate grid on floor by taping poster board or construction paper. Student should start at (0,0) and should be given vertical/horizontal directions to change positions	Match a point to a coordinate position Example: Tell the teacher where to place an object, sticker, etc. on a grid	Graph points Example: Given a numbered coordinate grid, place an object, sticker, etc. on a specific intersection	Plot a coordinate graph with 4 points Example: ***X*** / ***Y***: (1, 3), (2, 6), (3, 9), (4, 12) 

Algebra	***Content Standard 6***: Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.6.7.1 Use tables and graphs to represent linear equations by plotting, with and without appropriate technology, points in a coordinate plane	Plot points is a coordinate plane	Introduce coordinates Example: Student enters room, goes one direction, then changes direction to get to seat	Relocate to a new position Example: On a tile floor or a marked off game board move to a new position and then go to a second position (these moves should be horizontal and/or vertical)	Use a graphical representation to solve a real-world problem Example: Use a fire drill map to leave the building	Introduce how to graph an ordered pair Example: Teacher will show students that it takes 2 moves (3,5); move right 3 and up 5 (games, maps)

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
G.8.7.1 Identify, draw, classify and compare geometric figures using models and real world examples	Identify the figure drawn from a given set of points	Match a like figure to a figure on a grid	Connect the points on a grid Example: Dot to dot	Identify the figure with the appropriate term Example: Match picture to word	Match geometric figures with real-world Example: Traffic signs, door (rectangle), floors (patterns, square tiles)
G.8.7.6 Develop the properties of similar figures (ratio of sides and congruent angles)	Indicate similarity	Match similar figures Example: Match identical objects	Sort similar figures Example: Stack plates, cookies from cookie cutters, sort utensils	Classify objects by their attributes Example: Sort P.E. equipment into similar groups and napkins by size not color	Indicate figures of different sizes have similar shapes Example: Sort plates, utensils, etc. by attributes. Sort canned goods from boxed goods for cabinet.

Geometry	***Content Standard 9***: Transformation of Shapes: Students shall apply transformations and the use of symmetry to analyze mathematical situations.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
G.9.7.1 Examine the congruence, similarity, and line or rotational symmetry of objects using transformations	Recognize a line of symmetry, a slide or a rotation	Locate a line of symmetry for a square item Example: Fold square item in half such as a wash cloth, bandanas or cut fabric	Locate a line of symmetry Example: Fold any item to face the same direction	Develop the use of slides Example: Use game boards to move pieces to a designated position (knowledge of rules of game are not required)	Demonstrate knowledge of slides, symmetry and rotations Example: Dances, place bills in same position in cash drawer
G.9.7.2 Perform translations and reflections of two-dimensional figures using a variety of methods (paper folding, tracing, graph paper)	Understands reflection and shift Recognize that something has shifted a certain amount	Demonstrate a vertical shift (change) using manipulatives with a grid Example: Use a place setting template, move plate or cup forward or back, teenage games on a checkerboard, P.E. games, etc.,	Demonstrate a vertical shift (change) using manipulatives Example: Using a place setting template, move cup forward or back, right or left	Create a graph from two sets of data, and recognize the graphs are reflections (mirror image) Example: Use a visual model to arrange the room or an area according to the model, stack books by one shelf up or down	Choose the visual model that shows the vertical shift and/or reflection Example: Given two choices, identify the picture that shows a shift and/or reflection of the original  (Shift is the placement on the table, NOT the place setting)

Geometry	***Content Standard 11***: Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
G.11.7.1 Build three-dimensional solids from two-dimensional patterns (nets)	Compare a two dimensional object to a 3 dimensional object	Identify or match the base of a 3-dimensional item to a 2-dimensional shape Example: Match base of a can to circle; match box to rectangle	Copy Steps used to build a 3-dimensional object Example: Fold gift bags after they have been apart	Construct 3-dimensional shapes from pre-folded patterns Example: Fast food pie boxes or French fry containers	Construct 3-dimensional shapes from nets (2-dimensional drawing) Example: Fold pizza boxes, assemble various size boxes, simple origami or make paper footballs

Measurement	***Content Standard 12***: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.7.1 Understand, select and use the appropriate units and tools (metric and customary) to measure length, weight, mass and volume to the required degree of accuracy for real world problems	Select appropriate units and tools for measurement	Compare sizes of objects Example: Compare: Pencil to baseball bat, full or empty container, heavier or lighter object	Measure using real world objects Example: Make orange juice or soup or measure detergent to do laundry	Determine which tool to use to measure Example: Decide if a scale, a ruler, tape measure should be used to measure particular objects	Measure, weigh, or determine real world objects Example: Find the number of items that fill a space, check weights of one pound, 2 pound, 5 pound bags of dry goods, or measure to the nearest foot or inch
M.12.7.2 Understand relationships among units within the same system	Understand relationships among units within the same system	Introduce the use of measuring tools Example: Measuring cups, nurse's scale, ruler, yard stick	Demonstrate the techniques used for measurement Example: Lining up a straight edge, level dry measures, reset scales	Given an object, student selects the proper tool of measurement Example: Measuring cup measures rice for cooking, tablespoon for measuring butter for cooking, straight edge to measure length	Distinguish among similar measures Example: Differences among ¼ cup, ½ cup, ¾ cup, and 1 cup; inch, foot, yard; pounds, ounces

Measurement	***Content Standard 13***: Systems of measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.7.6 Find the distance between two points on a number line and locate the midpoint	Determine distance	Measure distance from 1 door to the next	Find the middle of the hallway	Measure units in the halllway	Figure midpoint with a formula

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.7.1 Identify different ways of selecting samples and compose appropriate questions Ex. survey response, random sample, representative sample and convenience sample	Deciding what data to collect	Recognize and classify like items Example: Group like items	Recognize and classify like items by their attributes Example: Hair color, types of shoes of students in class	Choose appropriate survey question from classified items Example: Given an assortment of paper clips, rubber bands, and pencils, choose survey question according to their independent grouping	Conduct a survey Example: Use an approved appropriate question to collect and tally data

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.7.1 Analyze data displays, including ways that they can be misleading	Use real world data displays to make decisions	Display pictorial data Example: Keep class weather calendar using daily weather pictures	Make decisions using pictorial data with or without assistance Example: Using various resources, determine appropriate dress according to weather report	Make decisions using pictorial data with numbers Example: Schedules, oven temperatures, weather	Interpret data displays Example: Choose a graph from a magazine or newspaper to interpret data

Data Analysis and Probability	***Content Standard 17***: Probability: Students shall understand and apply basic concepts of probability.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.17.7.1 Understand that probability can take any value between 0 and 1 (events that are not going to occur have probability 0, events certain to occur have probability 1)	Use simple experiments to compare probabilities	Predict an event in a given routine Example: Predict what comes next in their daily class schedule	Predict if an event is likely or unlikely to occur Example: Determine if an ice cube will melt at room temperature	Predict if an event is more likely or less likely to occur Example: If you hold chocolate candies in your hand are they more likely to melt than if they are on the desk	Compare student predictions to experimental data Example: Compare the number of free throw shots made to the number guessed by students
DAP.17.7.2 Design, with and without appropriate technology, an experiment to test a theoretical probability and explain how the results may vary Ex. suggested materials for simulations are: two-color counters, a number cube, and spinners	Student will record experimental probability	Separate two items Example: Use manipulatives of two colors and record the number of each color	Sort items into categories Example: Sort items by characteristics	Students record experimental probability, with or without assistance Example: Toss a two-color counter and record the number of times each faces up	Students record experimental probability Example: Toss a number cube and tally the number of times each outcome occurs

Number and Operations	***Content Standard 1***. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** →			***More Complex***
NO.1.8.3 Compare and order real numbers including irrational numbers and find their approximate location on a number line (Use technology when appropriate)	Order numbers using a number line.	Introduce the number line. Example: Large number line on the floor; move from one position to another	Move on a number line. Example: Large number line, move from zero to another position	Represent a position on a number line. Example: Given a number line, represent moving from zero to another position	Add with a number line. Example: Given a number line, represent moving from zero to a new position and then make a second move to obtain a sum
NO.1.8.4 Understand and justify classifications of numbers in the real number system	Represent subsets.	Introduce subsets. Example: Using a teacher made model copy the model; out of a group of fruits, apples and oranges are a subset; out of a group of shapes, circles is a subset	Classify students by one classification. Example: Boy or girl; right or left handed	Classify student activity into groups with overlaps. Example: Student group together by favorite sport or food; on a teacher made Venn diagram on the board, stick a marker to represent a student	Recognize items can be sorted into like groups. Example: With ropes make a Venn diagram with overlap sections so students can group by characteristic

Number and Operations	***Content Standard 2***: Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.2.8.4 Apply rules (conventions) for order of operations to rational numbers	Combine things to get desired result.	Follow a sequence of tasks or directions. Example: Follow steps in a recipe, schedules, using a vending machine, laundry skills, hand washing, etc.	Evaluate simple algebraic expressions using one type of operation (add, subtract, multiply, divide) Example: Add a grocery list, make change, purchase multiple items, create a budget	Evaluate simple algebraic expressions using one type of operation Example: Perimeter, circumference, area, distance, gross pay, price per pound	Evaluate simple algebraic expressions involving two or more operations Example: Length of a fence to surround a pool, amount of carpet needed for a room, pay in a pay period, renting a car, hiring a plumber
NO.2.8.5 Model and develop addition, subtraction, multiplication and division of rational numbers Ex. -8½ + 2¾	Model addition, subtraction, multiplication, and division with and without appropriate manipulatives	Add positive integers Example: Combine like items	Add and subtract positive integers Example: Using integer tiles combine tile to represent a sum or difference of two values	Multiply positive integers to obtain a product less than or equal to 10 Example: When shopping, 5 students select 2 items each; what will the total number of items be?	Multiply and divide integers to obtain a product less than or equal to 20 Example: Group 20 items into equal sets (2 groups of 10, 4 groups of 5, etc.) and smaller values

Number and Operations	***Content Standard 3***: Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
NO.3.8.3 Use estimation to solve problems involving rational numbers; including ratio, proportion, percent (increase or decrease) then judge the reasonableness of solutions	Increase to the next highest integer	Identify monetary values Example: Match 1, 5, and 10 dollar bills	Introduce dollar bills and coins Example: Recognize one dollar and some change would require two dollars to purchase an item	Recognize an amount over 5 dollars needs additional dollars Example: Combine a 5 dollar bill with different amounts of 1 dollar bills to purchase an item	Recognize an amount over 10 dollars needs additional dollars Example: Combine a 10 dollar bill with different amounts of 1 and/or 5 dollar bills to purchase an item

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Grade 8</td><td>Essence of Student Learning Expectation</td><td colspan="4">Less Complex ⟶ More Complex</td></tr>
<tr><td>A.4.8.1
Find the nth term in a pattern or a function table</td><td>See the relationship between input/output</td><td>Recognize a function table

Example:
Visual examples of input/output<table><tr><td>1 cake</td><td>2 eggs</td></tr><tr><td>2 cakes</td><td>4 eggs</td></tr><tr><td>3 cakes</td><td>6 eggs</td></tr></table></td><td>Read a function table

Example:
Traffic light

Red – Stop
Yellow- Slow
Green- Go

OR

Water faucet

Red- Hot
Blue- Cold</td><td>Record a function table

Example:
Tires on a bicycle<table><tr><td>Number of bikes</td><td>Number of tires</td></tr><tr><td>4</td><td>2</td></tr><tr><td>5</td><td>4</td></tr><tr><td>6</td><td>6</td></tr></table></td><td>Complete a function table

Example:
A pack of gum containing 5 sticks. How many sticks of gum would there be in 2 packs? In 3 packs?<table><tr><td>Packs of gum</td><td>Number of sticks</td></tr><tr><td>4</td><td>5</td></tr><tr><td>5</td><td>10</td></tr><tr><td>6</td><td>15</td></tr></table></td></tr>
<tr><td>A.4.8.2
Using real world situations, describe patterns in words, tables, pictures, and symbolic representations</td><td>Identify patterns</td><td>List information that has a pattern

Example:
Use students' birthdays and how they repeat yearly</td><td>Construct/record a concrete pattern

Example:
Use a calendar to record activities that repeat consistently, stack containers to form a triangular shape</td><td>Identify the change in a given pattern

Example:<table><tr><td>Students</td><td>Shoes</td></tr><tr><td>4</td><td>2</td></tr><tr><td>5</td><td>4</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>8</td></tr></table>What is the change in the number of shoes for each additional student?</td><td>Identify the value from given data

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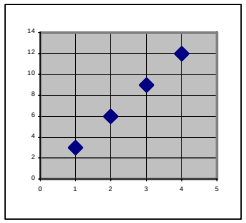
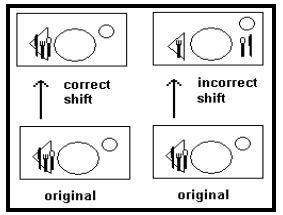
Algebra	***Content Standard 5***: Algebraic Representations: Students shall represent and analyze mathematical situations and structures using algebraic symbols.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.5.8.1 Solve and graph two-step equations and inequalities with one variable and verify the reasonableness of the result with real world application with and without technology	Solve simple equations	Recognize that you need more of something to complete a task Example: Decide how many more napkins needed to set a table of six, how much detergent needed, doubling or halving a recipe, how much more money needed Guess and check (substitution)	Solve equations using manipulatives and guess and check (substitution) Example: Use pictures to solve equations (draw pictures of the manipulatives)	Figure totals by adding /subtracting the same number with or without manipulatives Example: 1+3=4 2+3=5 3+3=6 5-1=4 5-2=3 5-3=2	Find products using a constant factor Example: Each bird has 2 feet, how many feet for 1, 2, and 3 birds? 2X1=2 2X2=4 2X3=6
A.5.8.2 Solve and graph linear equations (in the form y=mx+b)	Find a point on a number ine.	Introduce coordinates Example: Student enters room, goes one direction, then changes direction to get to seat	Relocate to a new position Example: On a tile floor or a marked off game board move to a new position and then go to a second position (these moves should be horizontal and/or vertical)	Use a graphical representation to solve a real-world problem Example: Use a fire drill map to leave the building	Introduce how to graph an ordered pair Example: Teacher will show students that it takes 2 moves (3,5); move right 3 and up 5 (games, maps)

Algebra	***Content Standard 6***: Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
A.6.8.1 Describe, with and without appropriate technology, the relationship between the graph of a line and its equation, including being able to explain the meaning of slope as a constant rate of change (rise/run) and y-intercept in real world problems	Move horizontally and vertically and stay on a line using a grid	Introduce coordinate plane Example: Make a coordinate grid on floor by taping poster board or construction paper. Student should start at (0,0) and should be given vertical/horizontal directions to change positions	Match a point to a coordinate position Example: Student will tell the teacher where to place and object, sticker, etc. on a grid	Graph points Example: Given a numbered coordinate grid, place an object, sticker, etc. on a specific intersection	Plot a coordinate graph with 4 points Example: ***X*** / ***Y*** 1 / 3 2 / 6 3 / 9 4 / 12 

Geometry	***Content Standard 8***: Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.8.8.1 Form generalizations and validate conclusions about properties of geometric shapes	Identify and draw conclusions with geometric figures	Match and identify a figure to a similar figure on a grid	Connect the points on a grid Example: Dot to dot	Identify the figure with the appropriate term Example: Bingo with traffic signs and shapes	Identify and/or draw conclusions with geometric figures in the real-world Example: Traffic signs, direction signs, informational signs
G.8.8.3 Determine appropriate application of geometric ideas and relationships, such as congruence, similarity, and the Pythagorean theorem, with and without appropriate technology	Indicate similarity	Match similar figures Example: Match identical objects	Sort similar figures Example: Stack plates, cookies from cookie cutters, sort utensils	Classify objects by their attributes Example: Sort P.E. equipment into similar groups and napkins by size not color	Indicate figures of different sizes have similar shapes Example: Sort plates, utensils, etc. by attributes. Sort canned goods from boxed goods for cabinet.

Geometry	***Content Standard 9***: Transformation of Shapes: Students shall apply transformations and the use of symmetry to analyze mathematical situations.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.9.8.1 Determine a transformation's line of symmetry and compare the properties of the figure and its transformation	Recognize a line of symmetry, a slide or a rotation	Locate a line of symmetry for a square item Example: Folding wash cloths, bandanas or cut fabric	Locate a line of symmetry Example: Fold any item to face the same direction	Develop the use of slides Example: Use game boards and move pieces to a designated position (knowledge of rules of game are not required)	Demonstrate knowledge of slides, symmetry and rotations Example: Dances, place bills in same position in cash drawer
G.9.8.2 Draw the results of translations and reflections about the x- and y-axis and rotations of objects about the origin	Understands reflection and shift Recognize that something has shifted a certain amount	Demonstrate a vertical shift (change) using manipulatives with a grid Example: Use a place setting template, move plate or cup forward or back, teenage games on a checkerboard, P.E. games, etc.,	Demonstrate a vertical shift (change) using manipulatives Example: Using a place setting template, move cup forward or back, right or left	Create a graph from two sets of data, and recognize the graphs are reflections (mirror image) Example: Use a visual model to arrange the room or an area according to the model, stack books by one shelf up or down	Choose the visual model that shows the vertical shift and/or reflection Example: Given two choices, identify the picture that shows a shift and/or reflection of the original  (Shift is the placement on the table, NOT the place setting)

Geometry	***Content Standard 11***: Visualization and Geometric Models: Students shall use visualization, spatial reasoning and geometric modeling.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
G.11.8.1 Using isometric dot paper interpret and draw different views of buildings	Compare a two dimensional object to a 3 dimensional object	Identify or match the base of a 3-dimensional item to a 2-dimensional shape Example: Match base of a can to circle; match box to rectangle	Copy steps used to build a 3-dimensional object Example: Fold gift bags after they have been apart	Construct 3-dimensional shapes from pre-folded patterns Example: Fast food pie boxes or French fry containers	Construct 3-dimensional shapes from nets (2-dimensional drawing) Example: Fold pizza boxes, assemble various size boxes, simple origami or make paper footballs

Measurement	***Content Standard 12***: Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.12.8.1 Understand, select and use, with and without appropriate technology, the appropriate units and tools to measure angles, perimeter, area, surface area and volume to solve real world problems	Select appropriate units and tools for measurement	Compare sizes of objects Example: Compare: Pencil to baseball bat, Full or empty, heavier or lighter	Measure using real world objects Example: Make orange juice or soup or measure detergent to do laundry	Determine which tool to use to measure Example: Decide if a scale, a ruler, tape measure should be used to measure particular objects	Measure, weigh, or determine real world objects Example: Find the number of items that fill a space, check weights of one pound, 2 pound, 5 pound bags of dry goods, or measure to the nearest foot or inch
M.12.8.2 Describe and apply equivalent measures using a variety of units within the same system of measurement	Understand relationships among units within the same system	Match simple measuring tools to pictures of their usage Example: Measuring cups to cooking, nurse's scale to weight, ruler or yard stick for length	Demonstrate the techniques used for measurement Example: Lining up a straight edge, level dry measures, reset scales	Select the proper tool of measurement, given an object Example: Measuring cup measures rice for cooking, tablespoon for measuring butter for cooking, straight edge to measure length	Distinguish among similar measures Example: Differences among ¼ cup, ½ cup, ¾ cup, and 1 cup; inch, foot, yard; pounds, ounces

Measurement	***Content Standard 13***: Systems of Measurement: Students shall identify and use units, systems and processes of measurement.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
M.13.8.4 Find the distance between two points on a coordinate plane using with the Pythagorean theorem	Determine distance	Measure distance from 1 door to the next	Find the middle of the hallway	Measure units in the halllway	Figure midpoint with a formula

Data Analysis and Probability	***Content Standard 14***: Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.14.8.1 Design and conduct investigations which include • adequate number of trials • unbiased sampling • accurate measurement • record-keeping	Deciding what data to collect	Recognize and classify like items Example: Group like items	Recognize and classify like items by their attributes Example: Hair color, types of shoes of students in class	Choose appropriate survey question from classified items Example: Given an assortment of paper clips, rubber bands, and pencils, choose survey question according to their independent grouping	Conduct a survey while collecting data from various environments Example: Use an approved appropriate question to collect and tally data

Data Analysis and Probability	***Content Standard 15***: Data Analysis: Students shall select and use appropriate statistical methods to analyze data.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.15.8.1 Compare and contrast the reliability of data sets with different size populations Ex. 40/80 vs. 40/800	Use real world data displays to make decisions	Display pictorial data Example: Keep class weather calendar using daily weather pictures	Make decisions using pictorial data with or without assistance Example: Use various resources to determine appropriate dress according to weather report	Make decisions using pictorial data with numbers Example: Schedules, oven temperatures, weather	Interpret data displays Example: Choose a graph from a magazine or newspaper and interpret the data

Data Analysis and Probability	***Content Standard 17***: Probability: Students shall understand and apply basic concepts of probability.				
Student Learning Expectation ***Grade 8***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
DAP.17.8.1 Compute, with and without appropriate technology, probabilities of compound events, using organized lists, tree diagrams and logic grid	Use simple experiments to compare probabilities	Predict an event in a given routine Example: Predict what comes next in their daily class schedule	Predict if an event is likely or unlikely to occur Example: Determine if an ice cube will melt at room temperature	Predict if an event is more likely or less likely to occur Example: If you hold chocolate candies in your hand are they more likely to melt than if they are on the desk	Compare student predictions to experimental data Example: Compare the number of free throw shots made to the number guessed by students
DAP.17.8.2 Make predictions based on theoretical probabilities, design and conduct an experiment to test the predictions, compare actual results to predict results, and explain differences Ex. suggested materials for simulations are: polyhedra die, random number table, and technology	Student will record experimental probability	Separate two items Example: Using manipulatives of two colors, count the number of each color	Sort items into categories Example: Sort items by characteristics	Students record experimental probability, with or without assistance Example: When a two-color counter is tossed, record the number of times each faces up	Students record experimental probability and make a prediction Example: When a number cube is tossed, tally the number of times each outcome occurs

Appendix

Absolute value	A number's distance from zero on a number line Ex. The absolute value of 2 is equal to the absolute value of -2.
Acute angle	An angle whose measure is less than 90° and greater than 0°
Addends	Numbers that are being added in an addition problem
Adjacent angles	Two angles that have a common side and a common vertex and whose interiors do not overlap
Algebraic equations	A mathematical sentence involving at least one variable and sometimes numbers and operation symbols Ex. $n - 10 = 2$
Algebraic expressions	A mathematical phrase involving at least one variable and sometimes numbers and operation symbols Ex. $n - 2$
Algorithm	A rule or procedure used to complete an exercise or solve a problem
Alternate interior angles	A pair of angles formed when a third line (a transversal) crosses two other lines (These angles are on opposite sides of the transversal and are inside the other two lines.)
Alternate exterior angles	A pair of angles formed when a third line (a transversal) crosses two other lines (These angles are on opposite sides of the transversal and are outside the other two lines.)
Analog clock	A device with an hour, minute and second hand which shows a continuous sweep of time passing rather than in "jumps" Ex. digital
Area	The amount of space in square units
Associative property	The sum or product of three or more numbers is the same, regardless of how the numbers are paired Ex. $a + (b + c) = (a + b) + c$, $a \bullet (b \bullet c) = (a \bullet b) \bullet c$
Attribute	A characteristic of an object (color, shape, size)
Bar graph	A graph that uses horizontal or vertical bars to represent data that do not touch
Basic measures	The units of measurement used to find distance, capacity and weight (The Metric system measures distance with meters, capacity with liters, and mass with grams. The customary system measures distance with inches, feet, yards, and miles, capacity with cups, quarts, and gallons, and weight with ounces, pounds, and tons.)
Benchmark fractions	A fraction that can be used to estimate the size of other numbers: 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1
Box and Whisker plot	Organization of data in a graph that shows the minimum, first quartile, median, third quartile, and maximum values (The graph uses a rectangle (or box) to represent the middle 50% of the date (interquartile range) and line segments (or whiskers) at both ends to represent the remainder of the data.)
Capacity	The maximum amount of liquid a container can hold
Categorical data	Data that can be categorized, such as types of lunch food (Conversely, numerical data is data that is ordered numerically, such as heights of students.)
Center of a circle	The point in the plane of a circle equally distant from all points on the circle
Central tendencies	A single number that is used to describe a set of data (mean, median, mode)
Chord	A line segment joining any two points on a circle
Circle graph	A graph in which a circle and its interior are divided into parts to represent the parts of a set of data
Circumference	The distance around a circle or the maximum distance around a sphere
Combinations	Subsets chosen from a larger set of objects in which the order of the items does not matter Ex. the number of different committees of three that can be chosen from a group of twelve members
Commutative property	The sum or product of two numbers is the same, regardless of the order of the numbers.

	Ex. $a + b = b + a$, $a \bullet b = b \bullet a$
Compatible numbers	A pair of numbers that is easy to work with mentally, also known as friendly numbers Ex. The numbers 25 and 70 are compatible numbers for estimating 22 + 73; the numbers 150 and 5 are compatible for estimating 148 ÷ 5; the numbers 90 and 30 are compatible for estimating 91.3 ÷ 29.7.
Compensatory numbers	Compensatory numbers are used to adjust numbers in a computation after the use of compatible numbers. Ex. 23 + 18 ~ 23 + 20 = 43 (Since two was added to increase 18 to 20 as compatible numbers, two will be subtracted from 43 to compensate for the change. Therefore, two is the compensatory number.)
Complementary angles	Two angles that have measures with a sum of 90°
Composite numbers	A natural number that has more than two factors Ex. 9 is a composite number because it has more than two factors: 1, 3, 9
Composite figure	A figure that is made up of two or more shapes
Composition	A set of numbers together to form a new number using addition or multiplication
Compound event	An event consisting of two or more non-mutually exclusive events
Computational fluency	Computational fluency refers to having efficient and accurate methods for computing. (Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.)
Concave	A polygon with one or more diagonals that have points outside of the polygon
Cone	A three-dimensional shape having a circular base, a curved lateral surface, and one vertex
Congruent	(≅) Having exactly the same size and shape Ex. If you put one figure on top of the other, they would match exactly.
Conjecture	Guesses or conclusions based on assumed or known knowledge, but without proof
Contextual situations	Relating a mathematical problem to a real modeled or illustrated circumstance
Contiguous	Touching, in actual contact, adjacent, and adjoining
Convex	A polygon with all interior angles measuring less than 180 ° (No segment that connects two vertices can be drawn outside of the polygon.)
Coordinate plane	A two dimensional system in which a location is described by its distance from two perpendicular number lines called (Coordinate grid) axes
Corresponding angles	(1) Two angles that lie on the same side of the transversal, in corresponding positions with respect to the two lines that the transversal intersects (The angles are congruent if the two lines are parallel.) (2) (2) When comparing two figures, angles in the same relative position are corresponding angles. (If the figures are similar or congruent, then the corresponding angles are congruent.)
Cube	A polyhedron with six square faces
Cylinder	A three-dimensional figure shaped like a can of soup
Decimal number system	A place value number system based on groupings by powers of ten
Decompose	The process of breaking a number into smaller units to simplify units for problem solving Ex: 64 + 26 can be written as (60 + 4) + (20 + 6), for the purpose of identifying compatible numbers.
Dependent variable	In a function, a variable whose value is determined by the value of the related independent variable
Diameter	A line segment that passes through the center of the circle and has endpoints on the circle (chord)
Difference	The result of a subtraction problem
Digit	A digit is any one of the basic symbols used to write a numeral. Ex: The numeral 23 is made up of the digits 2 and 3.
Distributive property	When one of the factors of a product is written as a sum or difference, multiplying each addend first does not change the

	original product. Ex. $3 \bullet (4 + 5) = (3 \bullet 4) + (3 \bullet 5)$
Divisibility rules	Patterns that make it easier to determine whether a whole number is divisible by another whole number, without actually doing the division
Double bar graph	A bar graph used to compare two similar kinds of data
Double line graph	A line graph with two or more lines or line segments that represent two or more sets of data that reflect change over time
Edge	The line formed where two faces of a three-dimensional figure intersect. Ex. A cube has 12 edges.
Elapsed time	An amount of time between two events
Equalities	A mathematical sentence that contains a symbol in which the terms on either side of the symbol are equal Ex. $7 = 7$, $7 = 3 + x$
Equation	A statement that two mathematical expressions are equal Ex. $5 + 3 = 8$ and $x + 7 = 15$ are equations.
Equiangular	All angles have the same measure. Ex. an equiangular quadrilateral where each angle measures 90°
Equilateral shape	A shape in which all have sides are the same length
Equivalent	Equal in value but in different form
Estimate	A close rather than an exact answer
Even number	Even numbers are numbers ending in a 2,4,6 or 8. (multiples of 2)
Expanded notation	A way to write numbers that reflect the place value of each digit Ex. $343 = 300 + 40 + 3$
Experimental probability	A statement of probability based on the results of a series of trials Experimental probability (event) = $\frac{\text{number of trials resulting in a favorable outcome}}{\text{Total number of trials in experiment}}$
Explicit	A formula whose dependent variable is defined in terms of the independent variable Ex. $y = 2x - 3$
Exponential form	A quantity expressed as a number raised to a power (In exponential form, 32 can be written as 2^5.)
Face	A two-dimensional side of a three-dimensional figure Ex. The faces of a cube are squares.
Factor	One of two or more numbers that are multiplied together to get a product (13 and 4 are both factors of 52 because $13 \bullet 4 = 52$.)
Flip (Reflection)	(See Reflection.)
Frequency table	A table that shows how often each item, number, or range of numbers (interval) occurs in a set of data.
Function table	A table that lists pairs of numbers that shows a function (A set of ordered pairs such that for any input there is only one possible output.)
Histogram	A graphic representation of the frequency distribution of a continuous variable (Rectangles are drawn in such a way that their bases lie on a linear scale representing different intervals (bin width). Therefore, the variable on the x-axis is continuous. Frequency of occurrence appears on the y-axis.)
Identity Property of Addition	If you add zero to a number, the sum is the same as that given number. Ex. $8 + 0 = 8$ and $a + 0 = a$
Identity Property of Multiplication	If you multiply a number, the product is the same as that given number. Ex. $3.5 \bullet 1 = 3.5$ and $a \bullet 1 = a$
Independent variable	In a function, a variable that determines the value of the related dependent variable
Inequality	A mathematical sentence that compares two amounts using the symbols $<$, $>$, $\leq$, $\geq$, $\neq$.

Inferences	Generalizations that are useful in making predictions based on data
Input/Output	(See Independent variable and Dependent variable.) (Independent variable/ Dependent variable)
Integers	The set of whole numbers and their opposites {…-2, -1,0,1,2…}
Interquartile range	The difference between the upper quartile and the lower quartile
Intersecting lines	Lines that cross and have exactly one point in common
Inverse operation	An operation that will undo another operation (Ex. addition and subtraction)
Inverse property	The result of two real numbers that combined will give the identity elements of zero or one (When a number is added to its additive inverse, the sum is zero. When a number is multiplied by its multiplicative inverse, the product is one.)
Irrational numbers	Real numbers that have infinite, but non-repeating, decimal representation
Irregular polygons	A polygon whose sides is not the same length and whose angles are not all congruent
Isosceles triangle	A triangle that has at least two congruent sides
Line	A straight path that extends infinitely in opposite directions
Line of best fit	A line, segment, or ray drawn on a scatter plot to estimate the relationship between two sets of data, also called a trend line
Line graph	A graph in which data points are connected by line or line segments that represent data and reflect change over time
Line plot	A sketch of data in which check marks, X's, or other symbols above a labeled number line show the frequency of each value
Line of symmetry	A line that divides a figure or figures into two congruent parts that are mirror images of each other
Line segments	Part of a line defined by two endpoints
Line symmetry	A figure that can be divided along a line so it has two congruent halves is said to have line symmetry.
Linear equation	An algebraic equation that describes a straight line
Linear pair	Two angles are said to be linear if they are adjacent angles formed by two intersecting lines and form a straight angle (180 degrees).
Logic grid	A grid of rows and columns used to organize information in a problem
Mass	The measure of the amount of matter of an object in the object's mass while an object's weight is a measure of the force with which gravity attracts the object (Although your mass is the same on earth as it is on the Moon, you weigh more on Earth because the attraction of gravity is greater on Earth.)
Mean	The sum of a set of numbers divided by the number of elements in the set (also referred to as average)
Measures of spread	Range
Median	The middle number (or the average of the two middle numbers, when necessary) in a set of numbers that are arranged from least to greatest
Mode	The number that occurs most often in a set of data (there may be one, more that one, or no mode)
Multiple	A number that is the product of the given number and an integer
Natural numbers	Counting numbers {1,2,3,4,5…}
Nets	A two-dimensional shape that can be folded to form a three-dimensional figure
Non-linear	Not a straight line
Non-Standard units	Informal units of measure such as handfuls, arms length, and stride.
Number theory	The exploration of properties and characteristics of numbers
Numerical data	Data consisting of numbers
Obtuse angle	An angle whose measure is greater than 90° and less than 180°
Odd number	A whole number that has 1, 3, 5, 7, or 9 in the ones' place that is not divisible by two
Operation	An action performed on one or two numbers producing a single number result (addition, subtraction, multiplication, division, opposite of a number, and square root of a number)

Order of operations	Rules describing what sequence to use in evaluating expressions
Ordered pair	A pair of numbers of the form (x, y) that give the location of a point on a coordinate plane (The first number in the ordered pair describes the horizontal distance and the second describes the vertical distance.)
Ordinal number	A number used to express position or order in a series, such as first, third, and tenth (Generally, ordinal numbers are used in dates.)
Outcomes	The results of an event (Heads and tails are the two outcomes of the event of tossing a coin.)
Outlier	Numerical data piece that is significantly larger or smaller than the rest of the data set
Parallel lines	Lines that are the same distance apart and never meet
Patterns	A model, plan, or rule using words or variables to describe a set of shapes or numbers that repeat in a predictable way
Percent	Means "hundredths" or "out of 100" Ex. $\frac{45}{100}$ = 45%
Percentage	The expression of a part of a whole (the whole of something is always 100 percent) in terms of hundredths
Perfect square	The product of a number times itself (The square root of any number that is not a perfect square is an irrational number.)
Perimeter	The sum of the lengths of the sides of a two-dimensional figure
Perpendicular lines	Two rays, lines, or line segments that form right angles
Pi	The ratio of the circumference of a circle to its diameter (Pi is the same for every circle, approximately 3.14)
Pictograph	A graph constructed with pictures or symbols (A pictograph makes it possible to compare at a glance the relative amounts of two or more counts or measures.)
Pictorial models	Pictures of items used in modeling
Place value	The relative worth of each number that is determined by its position
Plane figure	A figure that can be entirely contained in a single plane
Polygon	A closed two-dimensional figure made up of segments called sides, which intersect only at their endpoints called vertices
Polyhedron	A closed three-dimensional figure in which all the surfaces are polygons
Polynomial	An expression consisting of two or more terms
Prime factorization	A composite number expressed as the product of factors that are prime numbers
Prism	A polyhedron with two parallel faces (called bases) that are the same size and shape
Probability	A number from zero to one that indicates the likelihood that something (an event) will happen (The closer a probability is to one, the more likely it is that an event will happen.)
Product	The result of multiplication
Proportion	An equation a/b = c/d that states that the two ratios are equivalent
Pyramid	A polyhedron in which one face (the base) is a polygon and the other faces are formed by triangles with a common vertex (the apex) (A pyramid is classified according to the shape of its base.)
Pythagorean theorem	In a right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse $(a^2 + b^2) = c^2$.
Quadrilateral	A polygon with four sides
Quadrant	Any of the four sections into which a rectangular coordinate grid is divided by the intersection of the x- and y-axes (The quadrants are numbered I, II, III, and IV, beginning at the upper right (where x- and y-coordinates are positives) and continuing counterclockwise.)
Qualitative change	Relating to or involving comparisons based on qualities
Quantitative change	Involving distinctions based on quantities
Quartile	The quartiles divide an ordered set of data into four groups of the same size

Quotient	The result of division of one quantity by another (dividend/divisor = quotient)
Radius	A line segment from the center of a circle or sphere to any point on the circle or sphere (also, the length of such a line segment)
Range	The difference between the maximum and minimum in a set of data
Rate	A comparison by division of two quantities with different units
Ratio	Comparisons of two quantities with like units (Ratios can be expressed with fractions, decimals, percents, or words. They can be written with a colon between the two numbers being compared.)
Rational numbers	Any number that can be written in the form a/b where a is any integer and b is any integer except zero
Ray	A part of a line that has one endpoint and extends endlessly in one direction
Real numbers	A set of numbers combining rational and irrational numbers
Rectangular arrays	A rectangular arrangement of objects in rows and columns in which each row has the same number of parts and each column has the same number of parts
Rectangular prism	A prism whose faces (including the bases) are all rectangles
Reflection	A transformation that "flips" a figure over a line or an object over a plane so that it becomes a mirror image of the original (same as a flip)
Regrouping	A process in a mathematical operation where numbers are renamed Ex. 2 tens and 14 ones are equivalent to 34.
Regular polygon	A polygon whose sides are the same lengths and whose angles are equal
Rhombus	A parallelogram whose sides are all the same length (The angles are usually not right angles, but they may be right angles.)
Right angle	An angle whose measure is ninety degrees
Rotation	A transformation obtained by rotating a figure around a given point often referred to as a turn (same as a turn)
Rotational symmetry	In a plane, a figure has rotational symmetry if it can be rotated less than one full turn around a point so that the resulting figure (the image) exactly matches the original figure (the pre-image).
Scalene triangle	A triangle with sides of three different lengths and angles of three different sizes
Rounding numbers	Replacing a number with a nearby number that is easier to work with or better reflects the precision of the data
Scatter plot	A graph with one point for each item being measured (The coordinates of a point represent the measures of two attributes of each item.)
Scientific notation	A method of representing a number as a product of a number between 1 and 10 and a power of 10 Ex. 3456 can be written as 3.456×10^3.
Sequence	A series of numbers that are predictable and can be extended using operations
Skip count	To count by multiples of a number
Similar figure	Figures that are exactly the same shape, but not necessarily the same size
Slide (Translation)	(See Translation.)
Slope	The measure of steepness of a line; the ratios of rise over run; or change in y over change in x
Sphere	A three dimensional shape whose curved surface is, at all points, a given distance from its center point
Square root	The square root of a number n is a number that, when multiplied by itself, results in the number n. Ex. 4 is a square root of 16 because $4 \times 4 = 16$.
Standard units	Units of measure that have an accepted value like inch, cup, meter, and pound
Stem and Leaf plot	A method of organizing data for the purpose of comparison where the "leaf" is the number in the smallest place value and the "stem" includes the numbers in the larger place values
Straight angle	An angle whose measure is 180 degrees (It is formed by two opposite rays.)

Strategy	A method or way of solving a problem
Supplementary angles	Two angles whose measures total 180 degrees
Surface area	The total area of the faces (including the bases) and curved surfaces of a three-dimensional figure
Symmetry	(See line symmetry or rotational symmetry.)
Technology	Tools used to enhance teaching: calculators, interactive graphics programs, spreadsheets, Smart-Board, etc.
Theoretical probability	Identifying, using mathematical expectations, the number of possible ways an event can happen compared to all of the possible events
Three-Dimensional	A figure that has depth, width, and height
Transformation	An operation on a geometric figure by which each point gives rise to a unique image (rotations, dilations, translations, and reflections)
Translation	The motion of sliding an object or picture any direction along a straight line without rotation or reflection (same as a slide)
Transversal	The name given to a line that intersects two or more other lines in a given plane
Trapezoid	A quadrilateral that has exactly one pair of parallel sides (No two sides need be the same length.)
Tree diagram	A method of finding all the possible outcomes of prime factorization or probability situations by systematically listing the possibilities
Trend line	A line segment, or ray drawn on a scatter plot to estimate the relationship between two sets of data (line of best fit)
Turns	A transformation obtained by rotating a figure around a given point often referred to as a turn (same as a rotation)
Two-Dimensional	Objects that have length and width but no thickness
Variable	A symbol such as a letter, box, star, etc. that is used to represent an unknown or undetermined value in an expression or number sentence (equation)
Venn diagram	A pictorial representation of two or more sets showing elements that the sets have in common and elements that are unique to one or the other sets
Vertex (Plural: Vertices)	The point where two sides of a two-dimensional figure meet or the point where two or more edges of a three-dimensional figure meet
Vertical angles	When two lines intersect, the angles that do not share a common side; the angles opposite each other (Vertical angles have equal measures.)
Volume	A measure of the amount of space occupied by a three-dimensional shape, generally expressed in “cubic” units
Whole numbers	The set of natural numbers plus the number zero Ex: 0, 1, 2, 3, 4…
Y-Intercept	The coordinate at which the graph of a line intersects the y-axis

MANIPULATIVES TO CONCEPTS

The following is a listing of SOME of the concepts that can effectively be taught using the given manipulatives.

Manipulative	Concepts
Algebra Tiles	Integers, equations, inequalities, polynomials, similar terms, factoring, estimation
Attribute Blocks	Sorting, classification, investigation of size, shape, color, logical reasoning, sequencing, patterns, symmetry, similarity, congruence, thinking skills, Geometry, organization of data
Balance Scale	Weight, mass, equality, inequality, equations, operations on whole numbers, estimation, measurement
Base-Ten blocks	Place value, operations on whole numbers, decimals, decimal-fractional-percent equivalencies, comparing, ordering, classifications, sorting, number concepts, square and cubic numbers, area, perimeter, metric measurement, polynomial
Calculators	Problems with large numbers, problem solving, interdisciplinary problems, real-life problems, patterns, counting, number concepts, estimation, equality, inequality, fact strategies, operations on whole numbers, decimals, fractions
Capacity Containers	Measurement, capacity, volume, estimation
Clocks	Time, multiplication, fractions, modular arithmetic, measurement
Color Tiles	Color, shape, patterns, estimation, counting, number concepts, equality, inequality, operations on whole numbers and fractions, probability, measurement, area, perimeter, surface area, even and odd numbers, prime and composite numbers, ratio, proportion, percent, integers, square and cubic numbers, spatial visualization
Compasses	Constructions, angle measurement
Cubes	Number concepts, counting, place value, fact strategies – especially turnaround facts, classification, sorting, colors, patterns, square and cubic numbers, equality, inequalities, averages, ratio, proportion, percent, symmetry, spatial visualization, area, perimeter, volume, surface area, transformational geometry, operations on whole numbers and fractions, even and odd numbers, prime and composite numbers, probability
Cuisenaire Rods	Classification, sorting, ordering, counting, number concepts, comparisons, fractions, ratio, proportion, place value, patterns, even and odd numbers, prime and composite numbers, logical reasoning, estimation, operations on whole numbers
Decimal Squares	Decimals – place value, comparing, ordering, operations, classification, sorting, number concepts, equality, inequality, percent, perimeter, area
Dominoes	Counting, number concepts, fact strategies, classification, sorting, patterns, logical reasoning, equality, inequality, mental math, operations on whole numbers
Fraction Models	Fractions – meaning, recognition, classification, sorting comparing, ordering, number concepts, equivalence, operations, perimeter, area, percent, probability

Geoboards	Size, shape, counting, area, perimeter, circumference, symmetry, fractions, coordinate Geometry, slopes, angles, Pythagorean Theorem, estimation, percent, similarity, congruence, rotations, reflections, translations, classification, sorting, square numbers, polygons, spatial visualization, logical reasoning
Geometric Solids	Shape, size, relationships between area and volume, volume, classification, sorting, measurement, spatial visualization
Math Balance Invicta, number	Equality, inequality, operations on whole numbers, open sentences, equations, place value, fact strategies, measurement, logical reasoning
Miras	Symmetry, similarity, congruence, reflections, rotations, translations, angles, parallel and perpendicular lines, constructions
Money	Money, change, comparisons, counting, classifications, sorting, equality, inequality, operations on whole numbers, decimals, fractions, probability, fact strategies, number concepts
Number Cubes	Counting, number concepts, fact strategies, mental math, operations on whole numbers, fractions, decimals, probability, generation of problems, logical reasoning
Numeral Cards	Counting, classification, sorting, comparisons, equality, inequality, order, fact strategies, number concepts, operations on whole numbers, fractions, decimals, logical reasoning, patterns, odd and even numbers, prime and composite numbers
Pattern blocks	Patterns, one-to-one correspondence, sorting, classification, size, shape, color, geometric relationships, symmetry, similarity, congruence, area, perimeter, reflections, rotation, translations, problem solving, logical reasoning, fractions, spatial visualization, tessellations, angles, ratio, proportions
Polyhedra Models	Shape, size, classification, sorting, polyhedra, spatial visualization
Protractors	Constructions, angle measurement
Rulers Tape Measures	Measurement, area, perimeter, constructions, estimation, operations on whole numbers, volume
Spinners	Counting, number concepts, operations on whole numbers, decimals, fractions, fact strategies, mental math, logical reasoning, probability, generation of problems
Tangrams	Geometric concepts, spatial visualization, logical reasoning, fractions, similarity, congruence, area, perimeter, ratio, proportion, angles, classification, sorting, patterns, symmetry, reflections, translations, rotations
Ten-frames	Fact strategies, mental math, number concepts, counting, equality, inequality, place value, patterns, operations on whole numbers
Thermometers	Temperature, integers, measurement
Two-Color Counters	Counting, comparing, sorting, classification, number concepts, fact strategies, even and odd numbers, equality, inequality, operations, ratio, proportions, probability, integers

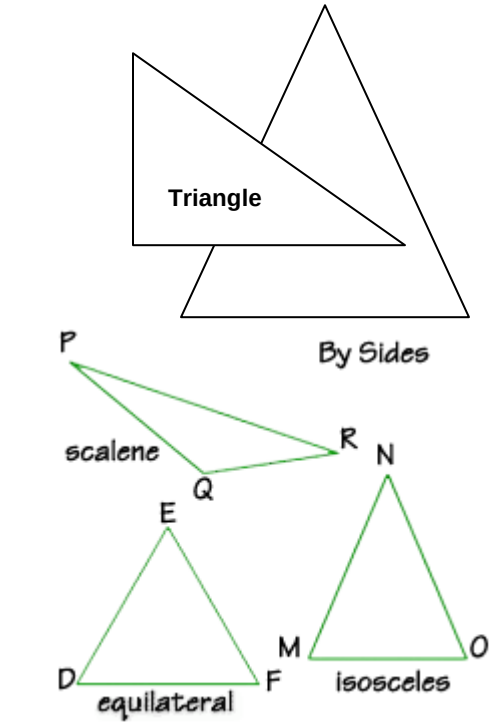
CONCEPTS TO MANIPULATIVES

The following is a listing of SOME of the manipulatives that can effectively be used to teach the given concept.

Concepts	Manipulative
Angles	Protractors, compasses, geoboards, miras, rulers, tangrams, pattern blocks
Area	Geoboards, color tiles, base-ten blocks, decimal squares, cubes, tangrams, pattern blocks, rulers, fraction models
Classification, sorting	Attribute blocks, cubes, pattern blocks, tangrams, 2-color counters, Cuisenaire rods, dominoes, geometric solids, money, numeral cards, base-ten materials, polyhedra models, geoboards, decimal squares, fraction models
Coordinate Geometry	Geoboards
Constructions	Compasses, protractors, rulers, miras
Counting	Cubes, 2-color counters, color tiles, Cuisenaire rods, dominoes, numeral cards, spinners, 10-frames, number cubes, money calculators
Decimals	Decimal squares, base-ten blocks, money, calculators, number cubes, numeral cards, spinners
Equations/inequalities Equality/inequality Equivalence	Algebra tiles, math balance, calculators, 10-frames, balance scale, color tiles, dominoes, money, numeral cards, 2-color counters, cubes, Cuisenaire rods, decimal squares, fraction models
Estimation	Color tiles, geoboards, balance scale, capacity containers, rulers, Cuisenaire rods, calculators
Factoring	Algebra tiles
Fact Strategies	10-frames, 2-color counters, dominoes, cubes, numeral cards, spinners, number cubes, money, math balance, calculators
Fractions	Fraction models, pattern blocks, base-ten materials, geoboards, clocks, color tiles, cubes, Cuisenaire rods, money, tangrams, calculators, number cubes, spinners, 2-color counters, decimal squares, numeral cards
Integers	2-color counters, algebra tiles, thermometers, color tile
Logical reasoning	Attribute blocks, Cuisenaire rods, dominoes, pattern blocks, tangrams, number cubes, spinners, geoboards
Mental Math	10-frames, dominoes, number cubes, spinners
Money	Money
Number Concepts	Cubes, 2-color counters, spinners, number cubes, calculators, dominoes, numeral cards, base-ten materials, Cuisenaire rods, fraction models, decimal squares, color tiles, 10-frames, money
Odd, Even, Prime, Composite	Color tiles, cubes, Cuisenaire rods, numeral cards, 2-cold counters
Patterns	Pattern blocks, attribute blocks, tangrams, calculators, cubes, color tiles, Cuisenaire rods, dominoes, numeral cards, 10-frames
Percent	Base-ten materials, decimal squares, color tiles, cubes, geoboards, fraction models
Perimeter/Circumference	Geoboards, color tiles, tangrams, pattern blocks, rulers, base-ten materials, cubes, fraction circles, decimal squares
Place Value	Base-ten materials, decimal squares, 10-frames, Cuisenaire rods, math balance, cubes, 2-color counters
Polynomials	Algebra tiles, base-ten materials
Pythagorean Theorem	Geoboards

Ratio/Proportion	Color tiles, cubes, Cuisenaire rods, tangrams, pattern blocks, 2-color counters
Similarity/Congruence	Geoboards, attribute blocks, pattern blocks, tangrams, miras
Size/Shape/color	Attribute blocks, cubes, color tiles, geoboards, geometric solids, pattern blocks, tangrams, polyhedra models
Spatial Visualization	Tangrams, pattern blocks, geoboards, geometric solids, polyhedra models, cubes, color tiles
Square/Cubic numbers	Color tiles, cubes, base-ten materials, geoboards
Surface area	Color tiles, cubes
Symmetry	Geoboards, pattern blocks, tangrams, miras, cubes, attribute blocks
Tessellations	Pattern blocks, attribute blocks
Transformational Geometry, translations, rotations, reflections	Geoboards, cubes, miras, pattern blocks, tangrams
Volume	Capacity containers, cubes, geometric solids, rulers
Whole Numbers	Base-ten materials, balance scale, number cubes, spinners, color tiles, cubes, math balance, money, numeral cards, dominoes, rulers, calculators, 10-frames, Cuisenaire rods, clocks, 2-color counters

Polygons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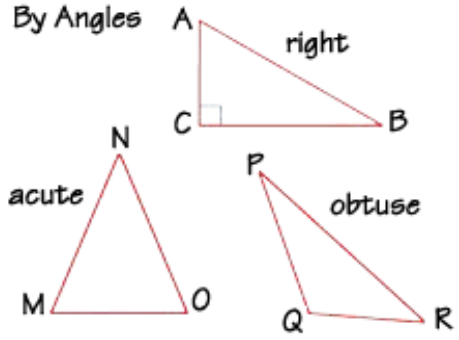
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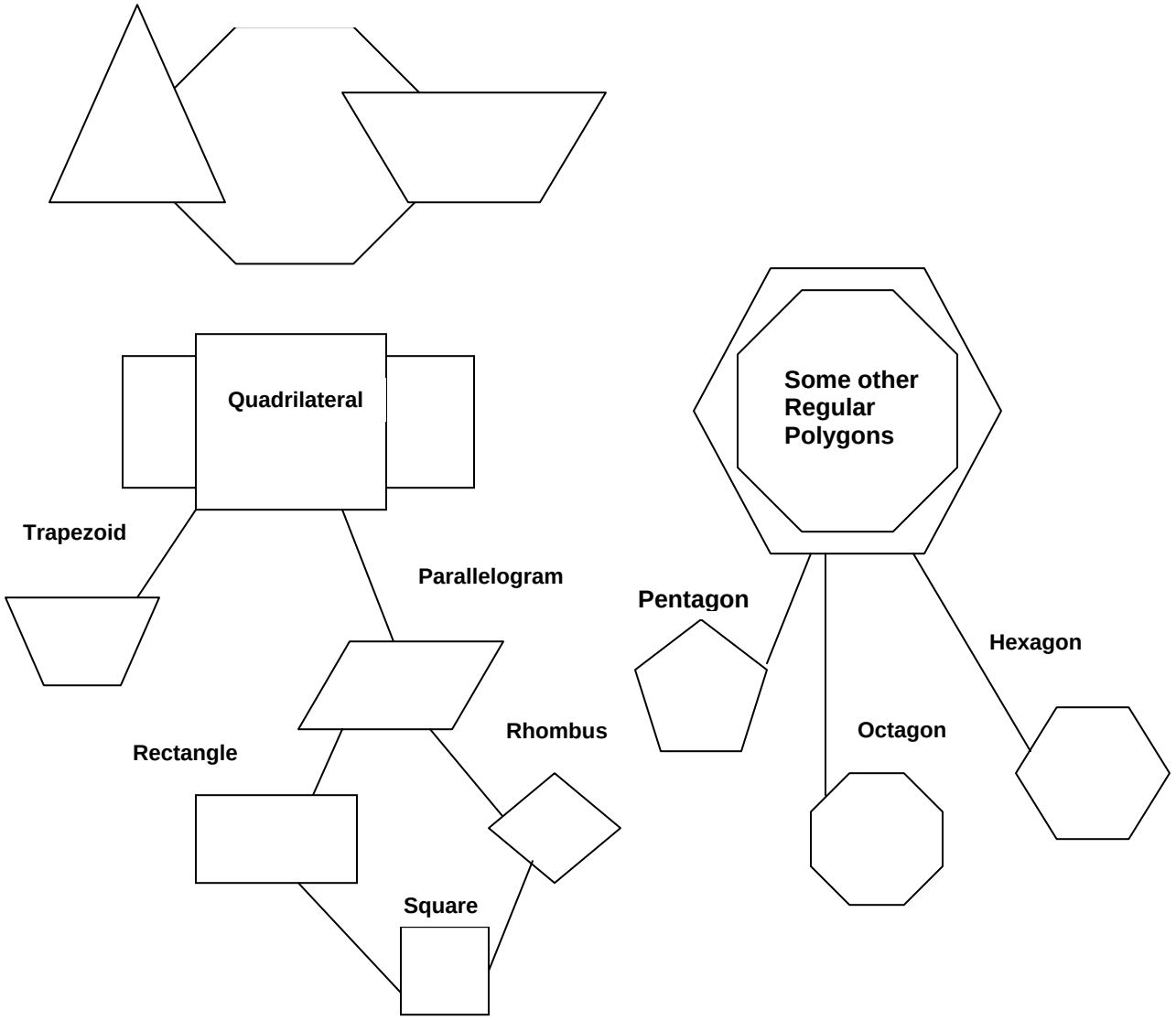
Quadrilateral
Trapezoid
Parallelogram
Rectangle
Rhombus
Square
Some other Regular Polygons
Pentagon
Hexagon
Octagon

Resource Guide to the Arkansas Curriculum Framework for Students with Disabilities for Science Grades 5 and 7

Summer 2006

Strands	Content Standards
Nature of Science	
1. Characteristics and Processes of Science	Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Life Science	
2. Living Systems: Characteristics, Structure, and Function	Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
3. Life Cycles, Reproduction, and Heredity	Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
4. Populations and Ecosystems	Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Physical Science	
5. Matter: Properties and Changes	Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
6. Motion and Forces	Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
7. Energy and Transfer of Energy	Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Earth and Space Science	
8. Earth Systems	Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
9. Earth's History: Changes in Earth and Sky	Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
10. Objects in the Universe	Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.

*Each grade level continues to address earlier ***Student Learning Expectation***s.

A minimum of 20% of instructional time in science must be spent in inquiry and conducting hands-on investigations.
Equipment, training, and grant information are available through the Arkansas Centers for Mathematics and Science Education.

Life Science	***Content Standard 2***: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
LS.2.5.2- Examine cells on a microscopic level	All living things are made of cells. Students will have an understanding about cells through the use of pictures/ visuals/ etc.	Identify a cell versus something that is not a cell using a picture, magnifying glass, or a microscope.	Examine a picture or visual representation of a cell and draw or create a model of the cell.	Peel an onion and examine the cell using a magnifying glass.	Compare and contrast various types of cells using the Internet and/or a microscope. Draw or print out the cells.
LS.2.5.4- Model and identify the parts of animal cells and plant cells	Identify the cytoplasm, nucleus, and cell membrane of animal and plant cells.	Identify the various parts of an animal or plant cell by matching using a visual model.	Create a model of an animal or plant cell.// Example: --Gelatin- cytoplasm --Orange- (take out pulp and pour gelatin into orange)- cell membrane --Grapes- (nucleus) --Hair gel and found objects in plastic baggie	Dissect food as a representation of an animal or plant cell. Example: -- turtle candy (chocolate- cell membrane, caramel- cytoplasm, nuts- nucleus) -- hot pockets or pita sandwich	Create and label a model of an animal or plant cell. Example: --modeling clay --make turtle candy

Life Science	***Content Standard 4***: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
LS.4.5.12- Conduct investigations in which plants are encouraged to thrive.	Discover the basic needs of plants.	Identify plant needs using a visual (flashcards or picture symbols) or object representation. Example: --Water versus another object --Food versus another object -- Sun versus dark	Demonstrate the elements needed for plants to thrive using picture symbols to create games (i.e., card games, matching card game, bingo)	Explore the school grounds to discover reasons why different areas do not contain healthy plants. Identify the missing elements (water, soil, sun). Using a teacher made worksheet/ Venn Diagram, chart the missing elements.	Plant a variety of plants in a variety of conditions. The students will determine the missing need- water, sun, or soil. Have the student compile a data sheet to show missing elements and growth rate. Measure growth. Compare/contrast.
LS.4.5.15- Conduct field studies identifying and categorizing organisms in a given area of an ecosystem.	Discover and experience areas that certain organisms live.	Use the school campus and/or community to discover different areas (i.e., rocks, pond or stream, etc.) and explore the types of organisms in each area.	Identify organisms. Examples: Look under a rock for: --moss --worm --beetle --pill bugs	Collect and document (drawings/ photographs) organisms found. Example: --scavenger hunt	Replicate with art an ecosystem that you have explored. Examples: --poster --diorama --clay/modeling clay --photo collage --found objects
LS.4.5.16- Evaluate positive and negative human effects on ecosystems.	Recognize human impact on the environment.	Identify human effects. Positive Examples: --planting trees --recycling --picking up trash	Identify human effects. Negative Examples: --littering --oil spills --forest fires --cars and smog	Make a positive impact on the environment. Examples: --pick up trash --recycle --animal feeders --plant trees/flowers	Research positive and/or negative human impact on the environment using the Internet.

Physical Science	***Content Standard 5***: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS.5.5.3- Identify common examples of physical properties.	Find objects with common physical properties.	Explore two physical characteristics using everyday objects. Examples: --hard/soft --rough/smooth --color Follow the exploration with questions and/or a worksheet demonstrating understanding about various physical properties.	Investigate textures using a touch box and record the observations. Examples: --find the soft object --find the rough object	Participate in a scavenger hunt finding objects with similar physical properties. Examples: --soft objects --green objects --rough object --soft and rough	Investigate common physical properties of objects using a Venn diagram.
PS.5.5.7- Demonstrate the effect of changes in the physical properties of matter.	Objects remain the same even though a physical change has occurred.	Create a mosaic out of whole ceramic pieces or whole colored sheets of paper.	Demonstrate physical changes. Examples: --cut orange into pieces; it's still an orange --water added to powdered drink mix is still water --paint a piece of paper --straw/bendable straw --blending whole food	Create a crayon shaving between wax paper to demonstrate physical change. Making paper with a blender. Candy making mold	Take a nature walk and record observations of change. Examples: --stick that's broken --crack in sidewalk --tree that's fallen After the walk, take a stick, measure it, and break into pieces. Show by measurement that the broken pieces equal the whole stick.

Physical Science	***Content Standard 5***: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS.5.5.9- Conduct investigations demonstrating expansion and contraction	Change in temperature effects the expansion and contraction of objects.	Pop popcorn or microwavable pork rinds using a microwave.	Place a full container of water in the freezer and record the changes in the water.	Place a balloon on top of a bottle. Put bottle in ice water. Put in hot water. Balloon will expand. Record the results.	Cook food in the microwave and observe the change in size. Example: --Hot dog --Baked potato --Sausage biscuit (packaging changes)

Physical Science	***Content Standard 6:*** Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS 6.5.2 Conduct investigations using: • levers (e.g. toothbrush) • pulleys • inclined planes-ramps, wedges, and screws • wheels and axles	Simple machines make work easier.	Locate simple machines in the school environment. Example: Can opener, pencil sharpener, hand mixer, ramps, toy cars, scissors.	Use simple machines. Example: --Raise the flag --Open a can --Pulling a nail from a board --Pepper or salt mill	Sort simple machines by type using actual objects, picture symbols, etc.	Make simple machines and demonstrate use. Example: --Make a ramp --Make a seesaw --Pencil and spool for wheel and axle or pulley
PS 6.5.6 Conduct investigations using potential energy or kinetic energy.	Potential energy is stored in an object at rest. Kinetic energy is an object in motion.	Identify objects, picture symbols, etc. as having potential or kinetic energy.	Use an object to demonstrate potential and kinetic energy. Example: --Kitchen timer --Mixer --Battery operated item --Roll a ball	Model or act out activities that demonstrate use of potential and kinetic energy. Example: Playground equipment --swing --slide	Predict how the height of a ramp will effect the distance an object will travel.

Physical Science	***Content Standard 7***: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy and using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS 7.5.2 Investigate how light travels and interacts with an object or material.	Light travels in straight lines. Light reflects, absorbs and refracts (bends).	Make shadows Example: Trace silhouettes. Make finger shadow animals. Identify object by observing the shadow.	Use black and white objects in the sun to identify/measure the temperature difference.	Use a prism or water to separate light into the colors of the rainbow.	Reflect light beams with a mirror to find the location of the reflected beam. Example: Use a light pointer for making choices. Explain how light travels
PS 7.5.4 Design and conduct investigations of transparent, translucent, and opaque as applied to light.	Transparent objects allow light to pass through and objects to be seen clearly. Translucent objects allow some light to pass through. Opaque objects do not allow light to pass through.	Distinguish which is easier to see through using three types of glass: translucent, transparent, and opaque. Example: --Drinking glasses --Eyeglasses --Storage containers	Sort objects by type of container: transparent, translucent, and opaque containers. Example: --In a store --In a kitchen	Identify the use of transparent, translucent, and opaque as required by function. Example: --Windows --Shower doors --Doors and walls --Eyeglasses --Picture frames	Make a model or object to illustrate transparent, translucent and opaque objects. Example: Clear plastic, waxed paper, aluminum foil. Art project using paint, wax crayons, etc. Christmas ornaments.

Earth and Space Science	***Content Standard 8***: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS 8.5.2 Investigate the growth of crystals.	Crystals are minerals that have formed into geometric shapes.	Identify an object as crystal or not. Example --rock crystal candy --crystals in rocks --rock salt	Model the structure of crystals using food, paper, etc. Example --pretzels and marshmallows --gumdrops and toothpicks	Make crystals. Example: --salt solution evaporated --borax solution evaporated on window --Epsom salt solution evaporated on window.	Find pictures and information about crystals formations using books and/or the internet.
ESS 8.5.7 Identify characteristics of sedimentary, igneous, and metamorphic rocks	Sedimentary rocks are formed in layers of mud and sand settling over time. Igneous rocks are formed when molten lava cools. Metamorphic rocks have been changed inside the earth over time.	Demonstrate how sedimentary rocks form Example: Shake up sand, soil, and pebbles in a jar of water and watch it settle.	Demonstrate how igneous rocks form. Example: Make hard sugar candy (peanut brittle).	Demonstrate how metamorphic rocks form. Example: Make chocolate chip cookies.	Create something from rocks. Example: --rock jewelry --rock turtle or other animal

Earth and Space Science	***Content Standard 8***: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology				
Grade 5	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS .8.5.11 Investigate the formation of soil.	Soil is formed from very fine rock fragments mixed with decayed plant and animal material.	Identify soil apart from rocks, plants, etc.	Make simple observations about different samples of soil Example: Compare soil samples brought by students by shaking each soil sample in a jar of water and observe settled soil.	Make soil by composting Example: --newsprint --vegetable scraps --coffee/tea grounds --worms --grass clippings/leaves --keep moist and covered. --stir occasionally. Or—Make edible dirt. (See appendix for recipe)	Examine composting in the community or state

Earth and Space Science	***Content Standard 10***: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 5***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS.10.5.2 Demonstrate the order of planets and other space objects in our solar system.	Planets and objects in our solar system are in an established order.	Identify the planets and other objects in our solar system (e.g. sun, moon planets, asteroids, comets)	Make a map of the solar system with the sun in the center out of candy, fruit, vegetables, etc.	Make a map of the solar system including the sun using familiar objects.	Make a map of the solar system including the sun.
ESS.10.5.3 Compare the properties of planets in our solar system: • size • shape • density • atmosphere • distance from the sun • orbital path • moons • surface • composition	Each planet has distinct identifying properties.	Order planets in Earth's solar system by size.	Order planets in Earth's solar system by placement relative to the sun.	Write a descriptive poem or riddle about each planet to illustrate identifying properties of that planet (e.g. moons, density, gravity, atmosphere, distance from the sun, etc.).	Mark the position and orbits of the planets around the sun, using sidewalk chalk for the playground or parking lot, and walk around the orbits.

Life Science	***Content Standard 2***: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
LS.2.7.2 Analyze how two or more organs work together to perform a function (e.g., mouth and stomach to digest food)	Two or more organs work together in a body system to perform specific functions.	Identify organs that work together. Example: --Mouth/stomach --Nerves/brain --Nose/lungs	Play a game to match organs that work together. Example: --Concentration --Operation	Make a tracing of the student's body shape. Use picture symbols or line drawings of organs to place organ systems where they belong in the body.	Make a model of two organs that work together and write a report about it. Example: Bones/muscles
LS.2.7.6 Identify human body systems: • nervous • digestive • circulatory • respiratory • excretory • integumentary • skeletal/muscular • endocrine • reproductive	There are different systems that work in the human body.	Identify systems in the human body Example: --Picture symbols --Models --x-rays - Transparencies/ overlays	Choose a body system and label some parts of that system.	Draw or trace a body system.	Explore body systems using technology.
LS.2.7.8 Investigate functions of human body systems.	Each body system has a different function.	Identify the job of human body systems Example: --Digestive system breaks down food for use by the body. --Circulatory system moves blood through the body.	Sequence the activities of body systems Example: Trace the movement of food through the body.	Sequence the activities of body systems and match each part to its job.	Name and describe the function of human body systems.

Life Science	***Content Standard 3***: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
LS.3.7.5 Dissect a poultry egg to analyze its structure (e.g., paper, plastic, or clay models, virtual dissection, or specimen dissection.)	Look closely at a part of the reproductive system as represented by an egg.	Break open a raw or hard-boiled egg. Look at the egg and name the parts to develop vocabulary.	Discuss and trace vocabulary naming the parts of the egg.	Make a model of an egg to show the parts of the egg. Example: --Model made of paper in booklet form. --Model made of modeling clay	Investigate egg hatching and match the parts of the egg to the end result of the hatching process. Example: --Video --Field trip to see eggs hatch --Incubate eggs*
LS.3.7.6 Dissect a flower to analyze the reproductive system of angiosperms. (e.g., paper, plastic, or clay models; virtual dissection; or specimen dissection)	Look closely at the reproductive system as represented by a flower.	Look at a flower and name the parts to develop vocabulary.	Discuss and trace vocabulary naming the parts of a flower.	Make a model of a flower to show the parts of a flower.	Look at a variety of flowers to identify the parts. Respond to questions about the activity. Example: --Invite a florist. --Take a field trip. --Use pressed flowers or picture symbols.

Physical Science	***Content Standard 5***: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS.5.7.5 Demonstrate techniques for forming and separating mixtures: • mixing • magnetic attraction • evaporation • filtration • chromatography • settling	A mixture can be separated and form a liquid into its parts in many ways.	Mix together a variety of items to make a mixture. Example: --Trail mix --Cereal mix --Rice and paper clips --Nuts and bolts --Sand and rocks --Fruit Salad or Tossed Salad --Epsom salts and water painted on black paper	Use colored markers to mark on wet coffee filters. Watch the colors wick through the filters.	Separate metal objects from non-metal objects using a magnet. Example: --Paper clips and rice --Iron filings and pencil shavings. --Iron fortified cereal)	Predict what will happen when you attempt to separate a mixture and check the prediction. Example: Will the magnet separate the paper clips from the rice?
PS.5.7.8 Investigate the effect of variables on solubility rates.	Stirring, heating, and/or crushing will speed up dissolving.	Add a substance to both a container of hot water and a container of cold water. Compare the rate of dissolving and document using a lab sheet may be used to document results Example: --Gelatin --Sugar cubes --Bouillon cubes	Add the same amount of a substance to two containers of water. Stir or shake one. Compare the rate of dissolving and document using a lab sheet may be used to document results Example: --Drop of food coloring --Sugar --Flavored drink mix	Using a solid substance and the same substance crushed into bits, add each to different containers of water. Compare the rate of dissolving and document using a lab sheet may be used to document results Example: --Sugar cube --Bouillon cube --Aspirin --Hard candy	Following an investigation of dissolving, record observations on data sheet and answer questions about results.

Physical Science	***Content Standard 6***: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces, using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS.6.7.5 Explain how Newton's three laws of motion apply to real world situations (e.g., sports, transportation)	Fundamental laws govern the motion of everything in the universe.	Demonstrate that objects in motion stay in motion and objects at rest stay at rest unless acted upon by an outside force. Example: Play a game using a ball. The ball remains still until it is pushed, hit, or thrown. Example: --Croquet --Pool --Baseball --Bowling	Demonstrate that when a force is placed on an object, the object will accelerate in the direction of the force. Example: Play a game using a ball. When the ball is hit, pushed or thrown, the ball will accelerate in the direction it is pushed, hit or thrown. Example: --Push a bowling ball down a ramp. --Hit a baseball. --Throw a ball. --Miniature golf.	Demonstrate that when a force acts on an object, it is balanced by an equal and opposite force. Example: --Put a fishing line several feet long through a straw. --Inflate a balloon, twist, and use a clothespin to hold in air. --Tape the balloon to the straw. --Pull the string taut with the straw at one end of the string. --Release the air from the balloon. --The balloon will move down the string.	Give examples of Newton's of motion using picture symbols or actual objects and record observations on a data sheet and answer questions about the results

Physical Science	***Content Standard 7***: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
PS.7.7.1 Identify natural resources used to supply energy needs.	Many of our energy needs are met using resources from nature.	List in words or pictures resources in nature used to supply energy. Example: --Sun --Water --Wood --Fossil fuels	Using pictures of a variety of environments, mark or circle the natural resources that are energy sources.	Collect pictures of natural resources and use them to make a collage.	Collect pictures of natural resources and write or tell how they are used as sources of energy.
PS.7.7.2 Describe alternatives to the use of fossil fuels: • solar energy • geothermal energy • wind • hydroelectric power • nuclear energy • biomass	Other forms of energy exist that can be used in place of fossil fuels.	Find items or pictures of energy sources that are alternatives to fossil fuels. Example: --Water wheel --Sun	Draw or trace pictures of natural resources that are alternatives to fossil fuels.	Use energy sources that are alternatives to fossil fuels. Example: --Make sun tea --Roast marshmallows over a fire. --Cook hot dogs over a charcoal fire. --Make a solar oven.	Use technology to gather information about alternatives to the use of fossil fuels. Example: Make a booklet
PS.7.7.3 Conduct investigations to identify types of potential energy and kinetic energy.	Recognize that there are different types of potential (stored in an object at rest) kinetic energy (an object in motion).	Identify objects, picture symbols, etc. as having potential or kinetic energy.	Use an object to demonstrate potential and kinetic energy. Example: --Kitchen timer --Mixer --Battery operated item --Roll a ball	Model or act out activities that demonstrate use of potential and kinetic energy. Example: Playground equipment --Swing --Slide	Predict how the height of a ramp will effect the distance an object will travel and record the results on a lab sheet.

Earth and Space Science	***Content Standard 8***: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS.8.7.5 Identify elements of weather: • temperature • air pressure • wind speed • wind direction • humidity	Many factors determine the weather.	Record daily weather conditions from a source and post conditions in the classroom, office, or daily announcements. Example: --newspaper --internet --telephone --radio station	Choose clothing and activities appropriate for the day's weather. Example: --match rain with raincoat or umbrella	Look at pictures of different environments and identify the elements of weather that determine the climate of each one. Example: --rainforest --tundra --desert	Record daily weather conditions and chart the weather over a period of time (e.g. two weeks).
ESS.8.7.6 Conduct investigations using weather devices: • anemometers • barometers • sling psychrometers • thermometers • weather charts	Scientists use instruments to measure the weather.	Use thermometer to measure the temperature.	Make a pinwheel or anemometer and use to measure wind speed.	Use a barometer to measure the barometric pressure and record weather conditions along with the barometric pressure.	Chart and compare weather conditions in various regions of the country. Example: --my city/ grandparent's city --my city/ nation's capitol
ESS.8.7.7 Predict weather conditions using data on the following: • temperature • air pressure: highs, lows, fronts • clouds • wind speed • wind direction • humidity	Indicate how the weather conditions will change.	Use data to select the symbol or picture that indicates the weather forecast.	Predict what to wear based on the weather forecast.	Predict the weather for an upcoming event. Example: --holiday --field trip --recess	Predict weather conditions by observing elements of the weather and record results on a lab sheet.

Earth and Space Science	***Content Standard 9***: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS.9.7.3 Compare and contrast Earth's magnetic field to those of natural or human-made magnets with: • North and South poles • Lines of force	The earth has a magnetic field that attracts and repels objects.	Experiment with objects and magnets and sort into two groups-magnetic and non-magnetic.	Recognize that magnets push and pull on objects. Example: --Toys that use magnets to build or draw. --Magnetic maze toys	Make a needle compass using a cork, a needle, and a bowl of water.	Give directions using a compass to another location on the school campus and record the results
ESS.9.7.5 Research ways in which people have used compasses.	People use compasses to find their way.	Identify and locate pictures of people who use compasses in their work or leisure. Example: --forester --hiker --hunter --military --land survey	Read an article or book that explains how people use compasses.	Interview someone whose job requires the use of a compass.	Research, using technology, how people use or have used compasses.

Earth and Space Science	***Content Standard 10***: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.				
Student Learning Expectation ***Grade 7***	***Essence of Student Learning Expectation***	***Less Complex*** → ***More Complex***			
ESS.10.7.1 Identify and model the causes of night and day.	Night and day are caused by the rotation of the earth on its axis.	Using pictures to identify if an activity is a daytime or nighttime activity.	Act out the rotation of the earth, using a light to represent the sun, to illustrate the cause of day and night.	Use a globe and a flashlight to demonstrate the cause of day and night.	Label a diagram, draw picture, or make a model to illustrate the causes of day and night.
ESS.10.7.3 Identify and model the cause of planetary years.	A planetary year is caused by the revolution of a planet around the sun.	Use a calendar to show that an Earth year is 12 months.	Act out the revolution of the earth around the sun to illustrate the cause of a planetary year.	Using a globe to represent the earth and a table lamp to represent the sun, demonstrate the cause of a planetary year.	Label a diagram, draw a picture, or make a model to illustrate the cause of a planetary year.
ESS.10.7.5 Identify and model the causes of seasons.	The tilt of the earth on its axis causes the earth's seasons.	Use picture symbols of the earth tilted on its axis to identify the four seasons of the year and position the pictures to match a diagram illustrating the cause of the seasons.	Use a globe to represent the earth and a table lamp to represent the sun and demonstrate the tilt of the earth as it revolves around the sun, which causes the earth's seasons.	Draw or trace a picture to illustrate the causes of the earth's seasons.	Label a diagram or make a model to illustrate the causes of the earth's seasons.

Science Glossary

Absorption	When white light wave passes through a substance the energy of certain colors may be taken in by the substance and converted to a different form of energy
Acid precipitation	Rain or snow produced when gases, released by burning fossil fuels, mix with water in the air
Adaptation	Any structure or behavior that helps an organism survive in its environment; develops in a population over a long period of time
Amplitude	The distance between a wave's midpoint and its crest or trough
Anemometer	A device used to measure wind speed
Angiosperm	A flowering plant with seeds enclosed in a fruit such as an apple
Asexual reproduction	A type of reproduction in which a new organism is produced from one parent
Atmosphere	The mixture of gases, solids, and liquids that surrounds a celestial body
Atom	Smallest unit of matter that cannot be broken down by chemical means
Axis	The imaginary line through Earth's center from the North Pole to the South Pole
Barometer	An instrument for measuring air pressure
Biomass	Organic material from plants or animals that is used to produce energy
Biosphere	All parts of Earth where life exists
Carbon cycle	The flow of carbon through Earth's ecosystems
Carbon dioxide-oxygen cycle	The flow of carbon dioxide and oxygen through Earth's ecosystems
Carnivore	An animal that feeds on other animals
Carrying capacity	The largest number of individuals that an environment can support over time
Cell	The smallest unit of an organism that can perform life functions
Cell theory	The major theory that the cell is the basic unit of life; organisms are made up of one or more cells; and all cells come from other living cells
Chemical change	Any change where one or more of the original materials changes into other materials
Chemical property	Characteristic of a substance that allows it to change to a new substance
Cirrus	A cloud that is thin, feathery, and high in the sky, usually associated with sunny weather
Clay	A sedimentary material with grains smaller than 0.002 mm in diameter
Climate	Average of weather conditions in a given area over a period of years
Closed Circuit	Circuit having a complete path for current flow
Comet	A ball of ice, rock, and frozen gases that orbits the sun
Commensalism	A symbiotic relationship that benefits one partner but not the other
Communication	An exchange of information from one organism to another

Community	All of the populations of different species that live in the same place at the same time and interact with each other
Compound machines	Combination of two or more simple machines
Compound	Pure substance produced when two or more elements combine and whose properties are different from the elements from which it is formed
Compression	Process of being pressed together
Cumulus	A cloud that looks like puffy white cotton, usually associated with fair weather
Conductors	Materials that transfer energy from one particle to another
Conifer	A tree that produces seeds in cones and has needle-like leaves
Conservation of matter (mass)	Law that states that matter is neither created nor destroyed, only changed in form
Consumer	Organism that cannot make its own food
Control	In an experiment, the standard for comparison
Convection	Transfer of thermal energy through liquid and gases
Complete metamorphosis	Complete reorganization of the tissues of an animal during its life cycle from egg to larva to pupa to adult, usually involving the addition of legs and wings
Coriolis effect	Force that changes the direction of solids, liquids, and gases to the right in the northern hemisphere and to the left in the southern hemisphere as a result of earth's rotation
Crustal deformation	Alteration of Earth's crust by forces applied by the movement of the tectonic plates
Decomposer	Organisms that break down and absorb nutrients from dead organisms
Density	The amount of mass in a given volume (D=m/v)
Dependent variable	Factor being measured in an experiment, found on the vertical or Y-axis on a graph
Deposition	The dropping of sediment from wind or water
Dichotomous key	System used for identifying plants, animals, rocks, or minerals that is made up of a series of paired descriptions to choose between
Dominant trait	Form of a trait that masks another form of the same trait
Earthquake	A sudden movement of Earth's crust caused by the release of stress accumulated along geologic fault lines or by volcanic activity
Ecosystem	Populations interacting with the living and non-living parts of the environment
Egg	The female sex cell
Electricity	The interaction of electric charges
Electromagnet	A temporary magnet made by passing electric current through a wire coiled around an iron bar
Elements	A pure substance that is made of only one kind of atom
Embryo	Fertilized egg that has begun to divide
Embryonic development	The growth of a fertilized egg from a single cell to multi-cells
Empirical evidence	Data that can be detected, observed, or measured

Endothermic	A chemical reaction in which more energy is taken in than given off
Energy	The capacity to cause change and do work
Environment	The surroundings and conditions in which an organism lives
Erosion	Transportation of soil and rock by wind, water, gravity, and ice
Estivation	An adaptation for survival in hot, dry weather during which an animal becomes inactive and all body processes slow down
Eukaryote	Cell with a nucleus
Evaporation	To change from a liquid into a gas
Exothermic	A chemical reaction in which more energy is given off than is taken in
Experimental design	The design of a suitable experiment to test a hypothesis
Extinction	The dying out of an entire species
Fault	A crack in Earth's crust along which rock moves
Field force	A force applied without physical contact
Field study	Planned small or large group activities that provide opportunities for students to practice skills in a variety of settings other than an actual classroom; conducting *scientific investigations* in a natural setting
Force	Any push or pull that tends to produce a change in the speed or direction of motion of an object
Fossil	The preserved remains or traces of an organism that lived in the past
Fossil fuels	Fuel such as coal, natural gas, or oil that formed underground millions of years ago from decaying organic matter
Frequency	The number of complete waves that pass a given point in a given amount of time
Friction	A force that opposes motion whenever two surfaces rub against each other
Galaxy	A large system of stars moving together through space
Gene	A section of DNA that controls specific cell activities and characteristics of every organism
Geothermal energy	Heat energy below Earth's surface
Glaciation	Any change in the landscape caused by glacial movement
Global warming	An increase in Earth's temperature caused by gases in the atmosphere that trap heat
Gravity	The force of attraction that exists between any two objects
Greenhouse effect	The natural heating process caused when gases trap heat in the atmosphere
Habitat	The place in an ecosystem where an organism lives
Heat	The transfer of thermal energy
Herbivore	An animal that eats only plants
Hibernation	An adaptation for winter survival during which an animal becomes inactive and all body processes slow down
Homeostasis	The process by which an organism's internal environment is kept stable in spite of changes in the external environment
Humidity	Water vapor in the air
Humus	Material in the soil that formed from decayed plant and animal matter

Hydroelectric	Production of electricity by flowing water
Hypothesis	Explanation for a question or a problem that can be formally tested
Igneous	Rock formed by the solidification of magma or lava
Igneous intrusion	A body of solidified magma intruded into rock layers
Imprinting	A process in which newly hatched birds or newborn mammals learn to follow the first object they see
Incomplete metamorphosis	The life cycle of an animal, such as the grasshopper, whose form does not change substantially through its life stages from egg to nymph to adult
Independent variable	The one factor changed in an experiment; represented on the horizontal or X-axis of a graph
Innate behavior	Behavior that an organism is born with and does not have to learn
Inorganic	Not alive and none of its components have ever been alive
Insulators	Materials that prevent the transfer of energy
Invertebrate	An animal without a backbone
Jet stream	Narrow belt of strong winds near the top of the troposphere
Kinetic energy	Energy of motion
Lab activities	Inquiry-based *scientific investigations*
Law	A descriptive generalization about how some aspect of the natural world behaves under stated circumstances, often stated in the form of a mathematical equation
Law of conservation of momentum	The rule that, in the absence of outside forces, the total momentum of objects in an interaction does not change
Learned behavior	Behavior that an organism is not born with and must acquire
Light minute	The distance that light travels in one minute
Light year	The distance that light travels in one year
Limiting factor	Any living or non-living factor that restricts the number of individuals in a population
Lithosphere	The crust and the rigid upper mantle that is broken into plates
Living	Anything that is or has ever been alive
Longitudinal wave	A wave in which the particles vibrate parallel to the direction of wave motion
Lunar eclipse	A darkening of the moon when passed through Earth's shadow
Magnetic reversal	Earth's magnetic field reverses and the poles switch places
Magnetism	The force associated with some motion of electrical charges or by the field of force produced by a magnet
Mass	A measure of the amount of matter in an object (K-4 uses weight interchangeably)
Matter	Anything that has mass and occupies space
Metal	An element that conducts heat and electricity
Metamorphic	Rock formed by the effect of heat, pressure, and chemical action on other rocks

Meteor	A rock from space that is burning up in the atmosphere (commonly referred to as a falling star)
Microwave energy	A wavelength of energy in the electromagnetic spectrum
Migration	The instinctive seasonal movement of animals
Mimicry	The structural adaptation involved in some species where one species resembles another
Mixture	The combination of two or more substances that have not chemically combined
Molecule	The combination of atoms chemically bonded together
Moon phase	A change in appearance of the moon as it revolves around Earth
Mutualism	A symbiotic relationship that benefits both partners
Natural resources	Minerals, fossil fuels, trees, and other valuable materials that occur naturally
Natural selection	The idea that those organisms best adapted to their environment will be the ones most likely to survive and reproduce
Neap tide	During the first and last quarter moon phases, the tides are not as high or not as low as a normal tide
Newton	The metric unit for forces (Newton)
Non-living	Anything that is not now or never has been alive
Nuclear energy	The potential energy stored in the nucleus of an atom
Nucleus	The control center of the cell
Nutrients	The substance in food that produces energy and materials for life activities
Omnivore	An animal that eats both plants and animals
Opaque	Does not allow light to pass through
Open circuit	A break in the conductive path so that no current flows
Orbit	The path an object follows as it revolves around another object
Organ	Structures made up of different types of tissues that work together to do a certain job
Organ system	System made up of different types of organs to do a certain job
Organic	Anything that is or has ever been alive
Organism	A living thing
Parallel circuit	A circuit that provides more than one path for the electrical current to follow
Parasitism	A symbiotic relationship in which one organism benefits and the other is harmed
Periodic table	Organizational chart of the elements
Phloem	Tubes that move food in plants
Physical property	Characteristic that can be observed or measured
Pitch	How high or low a sound is
Planetary year	The length of time it takes a planet to orbit the sun
Plate tectonics	Theory which states that pieces of Earth's crust are moving around on the mantle
Population	All the members of one species in a particular area
Potential energy	Stored energy
Precipitation	Any form of water that falls to the earth

Predator	Any animal that hunts and kills other animals for food
Prey	An animal that a predator feeds upon
Producer	An organism that makes its own food
Prokaryote	Organism without a nucleus
Proton	Positively charged particle in an atom's nucleus
Punnett Square	A tool that can show how genes combine
Radiation	Transfer of thermal energy as waves
Reactivity	The ability of a substance to go through a chemical change
Recessive trait	Physical characteristic resulting when no dominant gene is present
Reflect/reflection	Change in the direction of a light ray as it bounces off an object
Refract/refraction	A bending of a light ray when it passes at an angle from one transparent substance into another transparent substance in which its speed is different (such as when it passes through air into water)
Reproduction	The production of offspring by an organism
Richter scale	A scale that measures the amount of energy released by an earthquake
Sand	A sedimentary material finer than a granule and courser than silt, with grains between 0.06 mm and 2.0 mm in diameter
Scatter plot	A graph with one point for each item being measured
Scavenger	An animal that feeds on the bodies of dead organisms
Sedimentary rocks	Rock formed in layers from sediment
Seismograph	Instrument which detects and records earthquakes
Selective breeding	The process of selecting a few organisms with desired traits to serve as parents of the next generation
Series circuit	Having only one path for electrons to flow
Sexual reproduction	The joining of a male sperm cell and a female egg cell
SI units	International System of Units metric system
Silt	A sedimentary material consisting of very fine particles intermediate in size between sand and clay with grains between 0.002 mm and 0.05 mm in diameter
Simple machine	Machine that works with only one motion
Sling psychrometer	Instrument used to measure relative humidity
Soil profile	Layers of soil in an area
Solar eclipse	An alignment of the sun, moon, and Earth where the moon blocks the sun from Earth's view
Solar energy	Radiant energy that comes from the sun
Solar system	A star that is orbited by a group of planets, comets, and other objects
Solubility rate	Speed at which a substance dissolves
Solute	A substance that is dissolved

Solution	A mixture in which the particles of each substance are mixed evenly
Solvent	A substance that dissolves other materials
Species	A group of similar organisms whose members successfully reproduce among themselves
Speed	The distance that an object moves in a certain period of time $S = d/t$
Sperm	The male sex cell
Spring tide	During the full moon and new moon phases, high tides are higher and lower than normal
Stability	The condition where a substance does not go through chemical changes easily
Stratus	A long, layered cloud
Structural adaptation	Adaptation that involves body parts or color
Temperature	Measure of the average motion of the particles in a substance (heat)
Tension	A stress created by pulling
Territorial behavior	Activities associated with the defense of an area
Theory	A unifying explanation that has the ability to explain what has been observed; predict what has not yet been observed; be tested further by experimentation; be modified as required by the acquisition of new data; be modified only with compelling empirical evidence, verification, and peer review; be supported by sufficient empirical evidence to make abandonment unlikely
Thermometer	Instrument used to measure temperature
Tissues	Group of similar cells that work together
Translucent	Describes matter that allows, some, but not all, of the light that hits it to pass through, and that scatters some light
Transparent	The ability of light to pass through without refraction
Transverse wave	A wave in which the particles vibrate at right angles to the direction of the wave
Tropism	The response of a plant to something in its environment
Variable	Measurable factor, characteristic, or attribute of an individual or a system
Vertebrate	Animals with a backbone
Water cycle	The movement of water through Earth's ecosystems
Wavelength	Distance between any point on one wave to a corresponding point on the next wave, such as crest to crest or trough to trough
Weathering	The breakdown of a material into smaller and smaller pieces by mechanical or chemical means
Weight	The downward pull of gravity on an object (K-4 uses mass interchangeably)
White light	Contains all the colors of the visible spectrum (colors of the rainbow)
Xylem	Vessels in a plant that carry water and nutrients from the roots to the leaves

Appendix

Suggested Science Labs-Grades 5-8

Grade	Strand	Suggested Laboratory or Activity
5th	Nature of Science	Accurate observations lab Use mean, median, and mode Interpret scientific data using charts, graphs, stem and leaf plots
	Life Science	Use microscopes to identify cells Model parts of animal and plant cells Separate plant pigments for cell Demonstrate cellular respiration Energy pyramids Design food webs Investigate the carbon dioxide and oxygen cycle Create ecosystems Create system for plant growth Field study to categorize organisms
	Physical Science	Identify physical properties of objects Model the motion and position of molecules in the states of matter Model expansion and contraction Classify simple machines Investigate various simple machines Investigate potential/kinetic energy Investigate how light is absorbed, refracted, or reflected by matter Investigate matter that is translucent, transparent, or opaque Interactions of light, matter, and color perception
	Earth and Space Science	Grow crystals Investigate mineral properties Identify minerals Identify rocks Investigate the formation of soil Show how sedimentation occurs Model the rock cycle Analyze fossil record

Grade	Strand	Suggested Laboratory or Activity
6th	Nature of Science	Accurate observations lab Use mean, median, and mode Interpret scientific data using charts, graphs, stem and leaf plots
	Life Science	Model and explain the functions of animal and plant organs Dissect animal and plant organs Simulate how organisms compete for resources Simulate natural selection
	Physical Science	Determine density of various materials Construct a density column and test various objects Investigate acid/base indicators Physical and chemical changes lab Conservation of mass lab Investigate forces using SI units Calculate direction based on changes of force Calculate the speed of an object based on force Investigate the transfer of energy
	Earth and Space Science	Model the layers of the earth Demonstrate convection currents and how they cause plate movements Demonstrate *variables* within volcanoes that cause different types of eruption Investigate Arkansas landforms created by internal forces: plateau, mountains, earthquake faults Map patterns of earthquake and volcanic activity Model major geological events on land and in the ocean Model rock layer sequencing based on fossils Model phases of the moon

Science Lab/Activity Report Sheet

What is the date?_____ **What is the month**?_____

Hypothesis: What you did you do today? What do you think would happen?

_____
_____

Materials-What supplies did you use?

_____
_____

Procedures-What did you do?

_____
_____

Observations-What did you see happen?

_____
_____

Results-Illustrate what happened.

Resources:

- Your local school science department is a good source of materials and equipment.
- University of Arkansas Cooperative Extension Service
- *U of A Division of Agriculture/Poultry Science, Dr. Susan E. Watkins 479-575- 4952
- NASCO (Science supply vendor)
- Arkansas Game and Fish Commission
- Project Wild, Pat Knighten
- Arkansas Geological Society
- Modern Woodsman of America
- U. S. Forestry Service
- Project Learning Tree, Mary Ann Halsey, mahalsey@arkforest.org
- Weyerhauser
- NOAA
- Arkansas Department of Environmental Quality
- Project Wet, Philip Osborne
- NASA
- Visit a weather station
- Heifer Project, Perryville
- Arkansas State Fair or the county fair

Helpful Websites

www.Brainpop.com
www.kathimitchell.com
www.weatherbug.com
www.tinships.org
www.edhelper.com
www.enature.com
*www.aragriculture.org/poultry/Fun_With_Incubation/photogallery

Create a Graph
www.plt.org