

Science for Students with Significant
Disabilities
Part 2 of 5

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5th Grade ESS 8.5.7

Characteristics of Rocks

| | | | | | |
|---|---|---|--|---|---|
| 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 8.5.7 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 |



Dinosaurs lived millions of years ago. Fossils are all that is left of them today. How did the dinosaurs become fossilized?

Let's make some Yummy Sediment to find out!

1. Imagine a dinosaur walking through a river. Pour a layer of blue pudding into your cup. This is the ancient river bed.
2. Add the dinosaur candy on top of the river. These are the dinosaurs that died millions of years ago in the river bed.

The dinosaurs were able to be fossilized because they had hard parts, like bones. Tissues were eaten or rotted away.

3. Cover the dinosaurs with a layer of cookie crumbs. This is the mud and sand (sediment) that settled over the dinosaurs.

These sediments were carried by rivers and streams and were deposited in the ancient river bed. These sediments are deposited in layers over time.

4. Put a layer of chocolate pudding into your cup, followed by white puddings and then cookie crumbs. Continue layering. The coloring of the various layers (sediment) is due to the particles that make up the soil, clay, mud, etc. at different times.

As sediments are deposited in the river bed, the deepest layers have more and more pressure put on them from the massive weight of the sediments on top. These become sedimentary rock. The layers near the bottom also become hotter as they are pushed down to the earth's core. When layers are pushed down so hard and become very hot, they change from sedimentary rock into metamorphic rock.

www.K5CHALKBOX.com

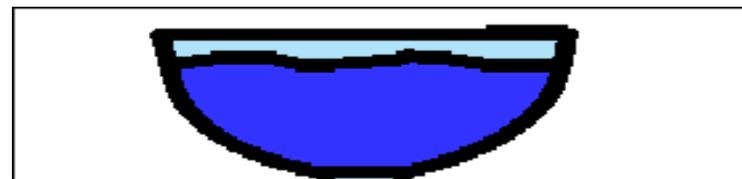
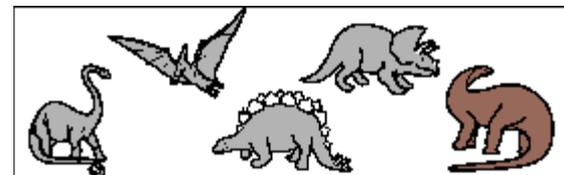
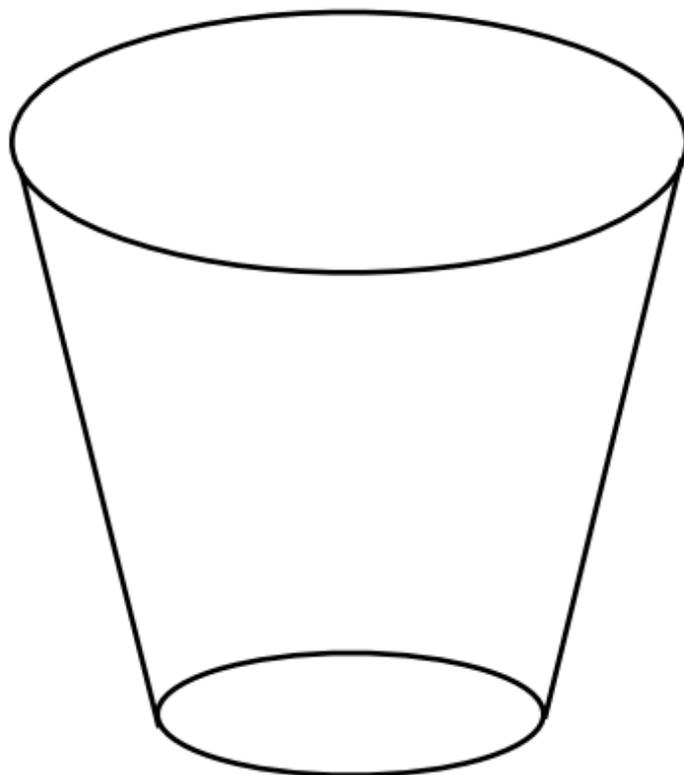
- You will need:
- clear plastic cups - one per child
- spoons
- vanilla pudding (half colored blue, half left white)
- chocolate pudding
- dinosaur edible candies (Betty Crocker cake decorations work well)
- crushed Oreos and graham crackers (for different colors)
- Tip: I buy the premade pudding and just color some of the vanilla ones. I plan on 1/2 cup of each color per student, depending on the size of my cups.

Sedimentary Rocks

. Draw and label your cup below. Use these words for labeling:

Fossils
Sedimentary Rock

Sediment
Metamorphic Rock

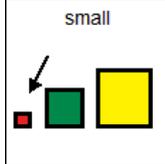
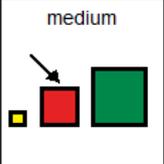
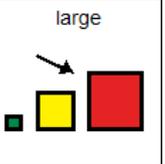
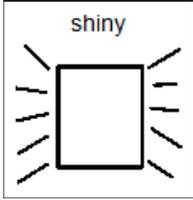
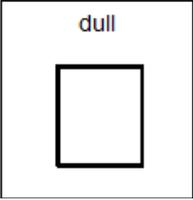


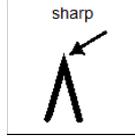
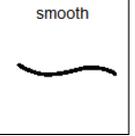
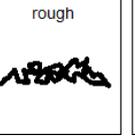
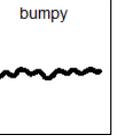
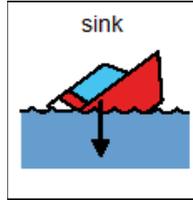
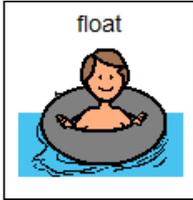
Fossils

Sediment

Rock Report

Rock Report

| | |
|--------------------------|--|
| Color | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">brown </div> <div style="text-align: center;">white </div> <div style="text-align: center;">black </div> <div style="text-align: center;">gray </div> <div style="text-align: center;">red </div> </div> |
| Size | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">small </div> <div style="text-align: center;">medium </div> <div style="text-align: center;">large </div> </div> |
| Layer or No Layer | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">layer </div> <div style="text-align: center;">no layer </div> </div> |
| Shiny or Dull | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">shiny </div> <div style="text-align: center;">dull </div> </div> |

| | |
|----------------------|---|
| Texture | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">sharp </div> <div style="text-align: center;">smooth </div> <div style="text-align: center;">rough </div> <div style="text-align: center;">bumpy </div> </div> |
| Sink or Float | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">sink </div> <div style="text-align: center;">float </div> </div> |

Here is a picture of my rock

My rock is

Igneous

Metamorphic

Sedimentary

Classify the Three Basic Types of Rocks

Different Types of Rocks

1. Igneous rocks come from _____

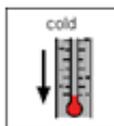
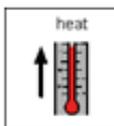


Volcano



Rainstorm

2. Igneous means "made by _____"



3. Circle two examples of Igneous rocks



Granite



Sandstone



Basalt



Mar

4. Fossils can be found in this type of rock



Granite



Sandstone

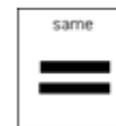
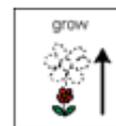
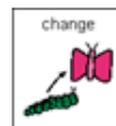


Basalt

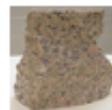


Marble

5. "Metamorphic" comes from the word that means to _____



6. Circle an example of a metamorphic rock.



Granite



Sandstone



Basalt



Marble

Rocks

ESS 8.5.9

Directions: Identify the different types of rocks.

1. Circle the different types of sedimentary rocks.



Sandstone



Chert



Breccia



Slate

2. Circle the different types of igneous rocks.



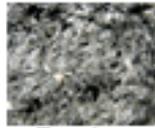
Breccia



Slate



Obsidian



Pumice

3. Circle the different types of metamorphic rocks



Obsidian



Schist



Sandstone



Slate



Slate



Schist



Obsidian

Answers: 1. 1 2 3 2. 3 4 3. 2 4

Provide large pictures for students to point or eye gaze as a response or actual rock samples to assist the students in communicating their responses.

Types of Rocks

Directions: Choose the type of rock that best completes each sentence.

Metamorphic

Igneous

Sedimentary



Granite



Quartz



Basalt

1. Granite, quartz, and basalt are types of _____ rocks.



Limestone



Sandstone

2. Limestone and sandstone are examples of _____ rocks.



Slate



Marble



Quartzite

3. Slate, marble, and quartzite are examples of _____ rocks.

5th Grade LS 2.5.2

Examine Cells on a Microscopic Level

| | | | | | |
|--|--|--|---|---|---|
| <p>Life Science</p> | <p>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.</p> | | | | |
| <p>Student Learning Expectation</p> <p>Grade 5</p> | <p>Essence of Student Learning Expectation</p> | <p>Less Complex  More Complex</p> | | | |
| <p>LS.2.5.2- Examine cells on a microscopic level</p> | <p>All living things are made of cells. Students will have an understanding about cells through the use of pictures/ visuals/ etc.</p> | <p>Identify a cell versus something that is not a cell using a picture, magnifying glass, or a microscope.</p> | <p>Examine a picture or visual representation of a cell and draw or create a model of the cell.</p> | <p>Peel an onion and examine the cell using a magnifying glass.</p> | <p>Compare and contrast various types of cells using the Internet and/or a microscope. Draw or print out the cells.</p> |

Identify the Cells

red blood cells



yes

no

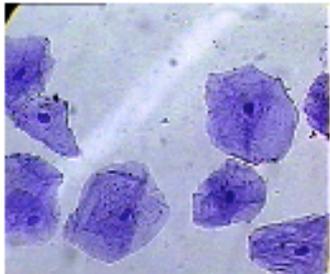
cheerios



yes

no

cheek cells



yes

no

coral polyp



yes

no

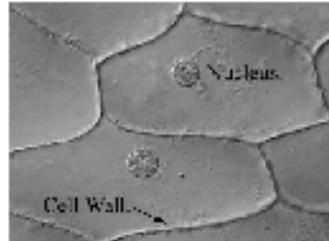
nerve cells



yes

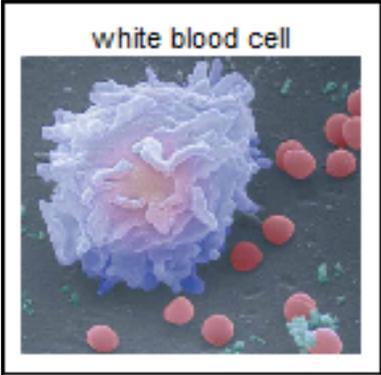
no

onion cell



yes

no



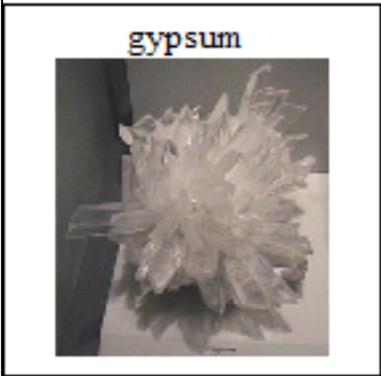
yes

no



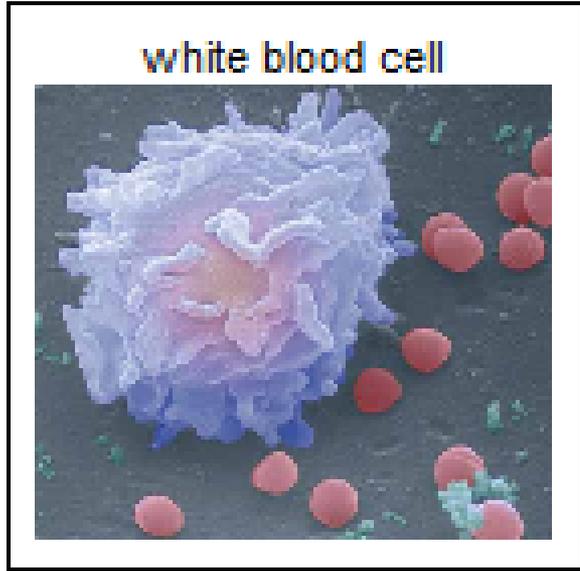
yes

no



yes

no



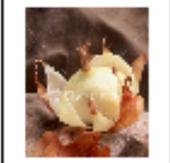
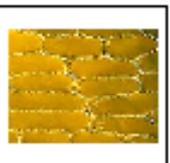
Provide large pictures one at a time and give the student yes/no cards or 2 switches with yes/no responses.

Onion Cell

LS 2.5.2

Peel an onion and look at the cells using a microscope.



| | | | | | |
|--|---|--|---|--|---|
| 1. |  | You need a whole onion. | | | |
| 2. |  | Peel the onion and remove the very thin film on the back of a section. | | | |
| 3. |  | Lay the film on a glass slide, put a drop of water on it, and a coverslip. | | | |
| 4. |  | Put the slide in the microscope and adjust it until it is in focus. | | | |
| 5. |  | The onion cells are lined up like bricks in a wall. | | | |
| 6. |  | Do you see the onion cells? | <table border="1"><tbody><tr><td>yes </td><td>no </td></tr></tbody></table> | yes  | no  |
| yes  | no  | | | | |

Include photos of the student performing the task. This is just a data sheet and it cannot stand alone.

5th Grade LS 4.5.12

Plants Encouraged to Thrive

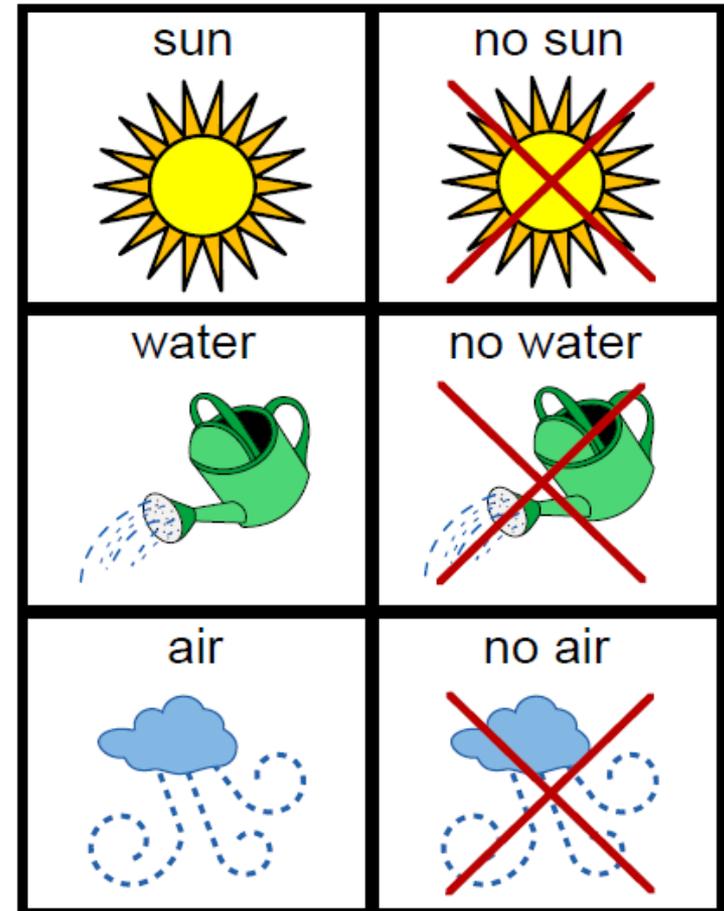
| | | | | | |
|---|---|--|--|--|---|
| Life Science | Content Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology. | | | | |
| Student Learning Expectation Grade 5 | Essence 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. |

This simple flower experiment will allow students to observe the effects of air, water and sun on plant growth.

LS 4.5.12

- Get four plants with flowers. Discuss the things plants need to grow; water, air, sun and soil. (All of our plants will have soil.)
- Plant 1: Put by a window where it can get sun and air. Tell the students we will water this plant. Water every couple of days or as needed.
- Plant 2: Put by the window so it gets sun and air. But we will not water this plant.
- Plant 3: Put by the window and cover it with a box. It can get air in the box but no sunlight. It will also have no water.
- Plant 4: Put by the window in a glass jar. It will get sun but no air and no water.
- Put cards on each plant indicating, sun, no sun, water, no water, air, no air.
- Fill out the chart. Predict which plant you think will grow and be the most healthy.

|  Write your name and circle the number of plant you think will grow the best. | | | | | | |
|---|--------------|----------|----------|----------|----------|-----------------|
|  name | | | | | | |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |
| | thinks plant | 1 | 2 | 3 | 4 | will grow best. |





Measuring Plant Growth



LS 4.5.12

| Inches | sunlight  | no sun  | sunlight  | no sun  | sunlight  | no sun  | sunlight  | no sun  | sunlight  | no sun  | sunlight  | no sun  |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | |
| | Day 3 | | Day 6 | | Day 9 | | Day 12 | | Day 15 | | Day 17 | |

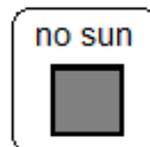
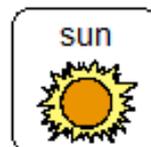
*Use green strips of construction paper to measure the plant. Place the strip of paper beside the plant, cut it off at top of the plant. Glue the strip of paper on the chart.

Plant Growth Worksheet

Directions: Write the correct answer.

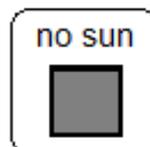
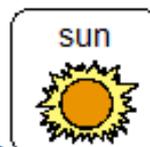
What is your prediction?

The plant will grow taller with _____



Which plant grew taller?

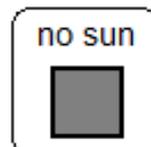
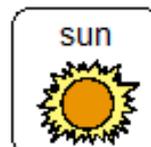
The plant with _____



grew taller.

Why do you think this happened?

Plants need _____



to grow.

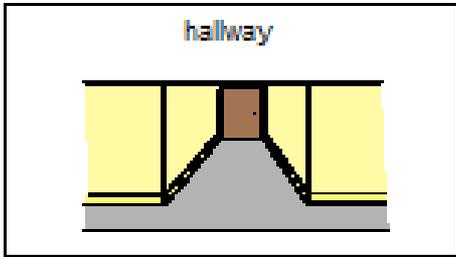
Was your prediction correct? _____

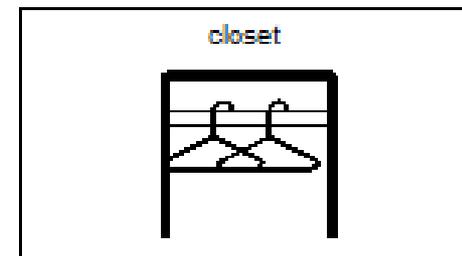
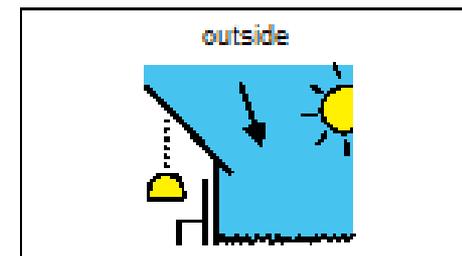
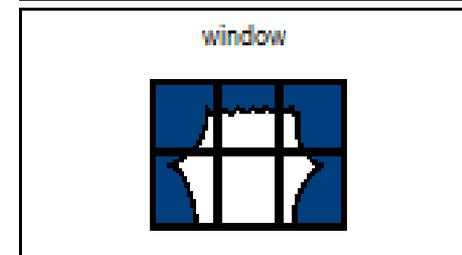
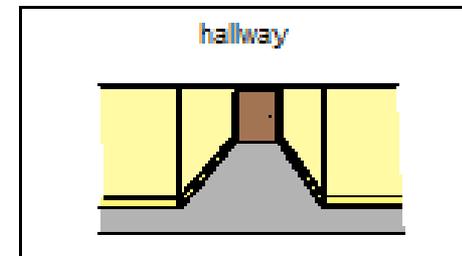


Missing Elements



Healthy plants need water, good soil, and sun. Locate areas on the school grounds where you find unhealthy plants. What are the missing elements?

| describe area | element missing? | | |
|--|------------------|-----------------------|-----------------------|
|  | water | <input type="radio"/> | no |
| | good soil | <input type="radio"/> | no |
| | sun | yes | <input type="radio"/> |
| | water | yes | no |
| | good soil | yes | no |
| | sun | yes | no |



Provide picture/word cards for students who cannot write the description of the location.

5th Grade PS 5.5.9

Expansion and Contraction

| | | | | | |
|--|---|---|---|---|--|
| 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) |

Expansion Experiment with Soap

PS 5.5.9

Materials



what



you



need



microwave



Ivory soap



Dove soap



Glass bowl

Let's begin by testing the two soaps to see if they float in water:

1



pour



water



into



a glass bowl.

2



put



Dove soap



into



the bowl.

3



put



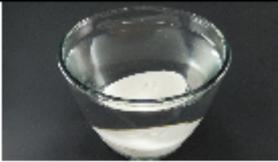
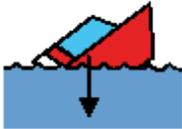
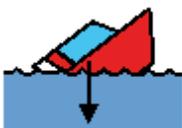
Ivory soap



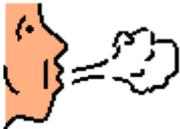
into



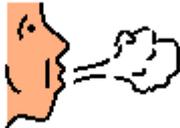
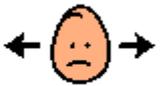
the bowl.

| | | | | | |
|---|--|---|---|----|--|
| 4 |  what happened |  to the Dove soap? |  sink | or |  float |
| 5 |  what happened |  to the Ivory soap? |  sink | or |  float |

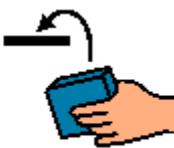
The Ivory soap floats because it is filled with pockets of air.

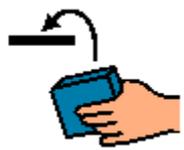
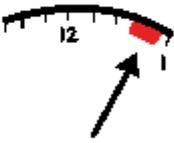
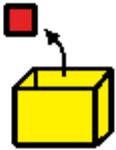
| | |
|--|--|
|  Ivory soap |  air |
|--|--|

Dove soap does not float. Do you think Dove soap is filled with pockets of air?

| | | | | | |
|---|---|---|------------|---|--|
| 6 |  Dove soap |  air | yes / no ? |  yes |  no |
|---|---|---|------------|---|--|

Now let's see what happens when you place the different bars of soap in the microwave.

| | | | | | |
|---|--|--|---|---|--|
| 7 |  cut |  Dove soap |  into pieces |  put on |  plate |
|---|--|--|---|---|--|

| | | | | | |
|----|--|---|--|--|---|
| 8 |  cut |  Ivory soap |  into pieces |  put on |  plate |
| 9 |  put |  plate with Ivory soap pieces |  into |  the microwave | |
| 10 |  turn on |  the microwave |  for 1 minute | | |
| 11 |  open |  the microwave |  take out |  the soap | |

How does the Ivory soap look after you put it in the microwave?

| | | | |
|----|--|--|---|
| 12 |  it expanded |  it looks the same |  it melted |
|----|--|--|---|

13



put



plate with Dove soap pieces



into



the microwave

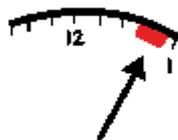
14



turn on



the microwave



for 1 minute

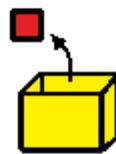
15



open



the microwave



take out



the soap

How does the Dove soap look after you put it in the microwave?

16



it expanded



it looks the same



it melted

The Ivory soap expanded but the Dove soap did not.

Do you think the air pockets caused the Ivory soap to expand?

17



think



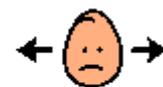
air pockets



expand

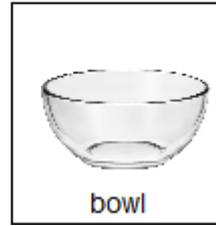


yes



no

Materials



Experiment 1 Contraction



Fill the water bottle with hot water.



Shake the water bottle.



Open the bottle.



Pour the hot water into the bowl.



Place the balloon over the top of the bottle.

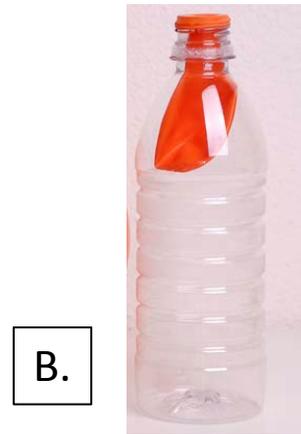


Observe the balloon.

What happened to the balloon?



The balloon expanded outside of the bottle.



The balloon contracted inside the bottle.

Experiment 2 Expansion



Place the bottle in the freezer for 20 minutes.
Fill the bowl with hot water.



Place the balloon over the top of the bottle.



Place the bottle in the bowl of hot water.



Hold the bottle in place and observe the balloon.

What happened to the balloon?

A.



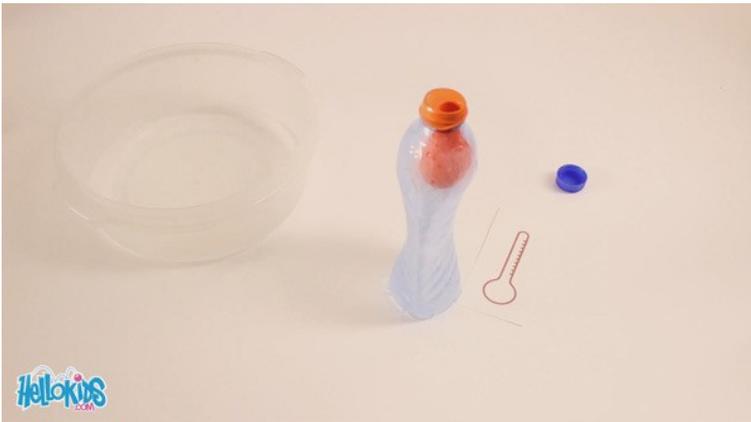
The balloon expanded.

B.



The balloon did not expand.

Conclusion



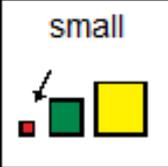
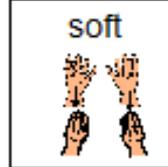
- In **experiment 1**, warm air contained into the bottle is slowly getting **colder**. When air is cooling down, it **contracts**, and takes up **less space**. The balloon is stopping up the mouth opening, and therefore, exterior air cannot get inside of the bottle instead of contracted air. So the balloon is **drawn up** instead.
- In **experiment 2**, cold air contained into the bottle is **warming up** when you put it in hot water. When air warms up, it **expands**, and therefore takes **more space**. The balloon is stopping up the mouth opening, so it receives the air and **inflates**.

The Expansion of Popcorn

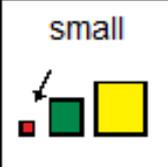
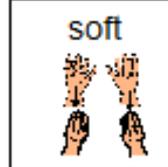
Demonstrate how the change in temperature affects the expansion of objects by popping popcorn.

Mark your answers.

1. What did the unpopped kernels look like?

| | | | |
|---|--|---|--|
| small  | big  | hard  | soft  |
| orange  | white  | corn kernels  | popcorn  |

2. What did the popped kernels look like?

| | | | |
|---|--|---|--|
| small  | big  | hard  | soft  |
| orange  | white  | corn kernels  | popcorn  |

3. What caused the change in the popcorn?

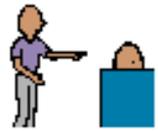
| | |
|---|---|
| heat  | cold  |
|---|---|

4. Which word describes the change in the popcorn?

contraction

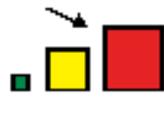
expansion

Expansion of Water Experiment



Find

2



large



empty



plastic



bottles.



Fill



the



bottles



with



the



same



amount



of



water.



Place

1



bottle



in



the



warm



classroom

&

and



the



other



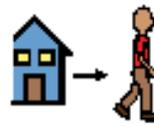
in



the



freezer.



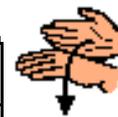
Leave



the



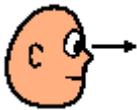
bottles



over



night.



Observe



the



changes



in



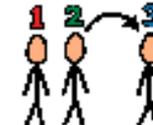
the



bottles



the



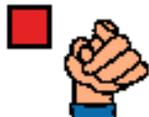
next



day.



Record



your

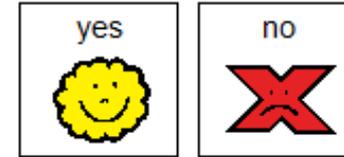


findings.

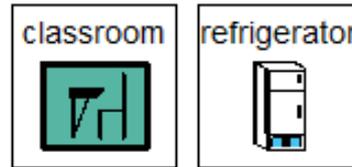
The Expansion of Water

Follow the procedure to demonstrate the affect of temperature on the expansion of water.

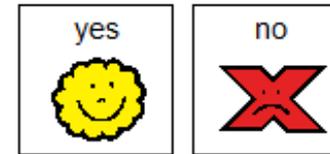
1. Did the water level stay the same in either bottle?



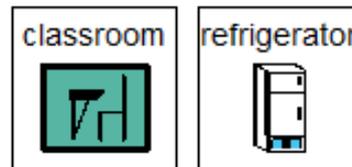
2. If yes, which bottle?



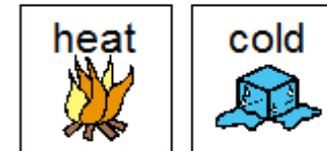
3. Did the water level change in either bottle?



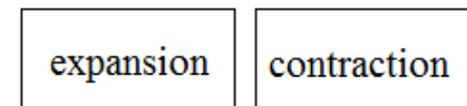
4. If yes, which bottle?



5. What caused the change in the water level?



6. Which word describes the change in the water level?



5th Grade PS 5.5.7

Changes in Physical Properties of Matter

| | | | | | |
|---|---|---|---|--|--|
| 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 | Essence of Student Learning Expectation | Less Complex  More Complex | | | |
| Grade 5 | | | | | |
| 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. |

Demonstrate Physical Change

Perform the following actions that demonstrate physical change. Label the actions that caused the change without altering the composition of the matter.

| Before | After | action that causes physical change |
|---|--|------------------------------------|
| paper  | paper wad  | |
| cheese  | grated cheese  | |
| poster board  | torn paper  | |
| pencil  | broken pencil  | |
| paper  | pieces of paper  | |
| Play-doh  | Play-doh snake  | |

| |
|-------|
| wad |
| roll |
| tear |
| grate |
| cut |
| break |

Mosaics

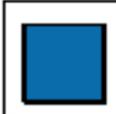
PS 5.5.7

Demonstrate a physical change by creating a paper mosaic.

1. Cut or tear colored paper into strips.

 or   

2. Cut or tear colored paper into squares.

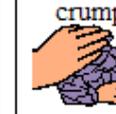
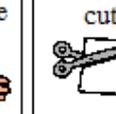
 or  

3. Glue the squares onto the background shape.

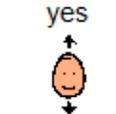
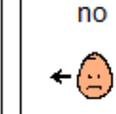
How did you change the physical form of the paper?

tear crumple cut

Did you form a new substance with new properties?

yes no

What kind of change did you create?

physical change or chemical change



5th Grade PS 5.5.3

Identify Common Examples of Physical Properties

| | | | | | |
|--|---|--|--|--|--|
| 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. | <p>Explore two physical characteristics using everyday objects.</p> <p>Examples: --hard/soft --rough/smooth --color</p> <p>Follow the exploration with questions and/or a worksheet demonstrating understanding about various physical properties.</p> | <p>Investigate textures using a touch box and record the observations.</p> <p>Examples: --find the soft object --find the rough object</p> | <p>Participate in a scavenger hunt finding objects with similar physical properties.</p> <p>Examples: --soft objects --green objects --rough object --soft and rough</p> | <p>Investigate common physical properties of objects using a Venn diagram.</p> |

Physical Property Examples

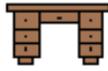
- Color
- Solubility
- Odor
- Hardness
- Density
- Melting Point
- Boiling Point



Physical Properties Scavenger Hunt

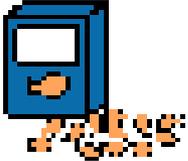
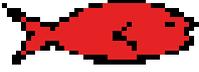
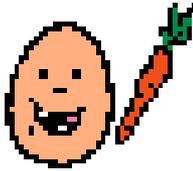
PS 5.5.3

Directions: Walk around your classroom and school and identify the objects you find with similar physical properties.

| | Physical Property | EXAMPLES FOUND | | | | |
|---|---|--|--|---|--|---|
| 1 |  green |  tree |  crayon |  chair |  shirt |  book |
| 2 |  hard |  desk |  computer |  table |  rock |  book |
| 3 |  soft |  pillow |  sweater |  blanket |  hat |  cotton balls |
| 4 |  salty |  chips |  crackers |  French fries |  pretzels |  popcorn |
| 5 |  rough |  pebbles |  stick |  pine cone |  sandpaper |  wood |
| 6 |  smooth |  pencil |  flag pole |  door |  table |  slide |

Physical Properties 2 Snack Foods

Use these picture cues to complete the Venn Diagram comparing the physical properties of the 2 snack foods.

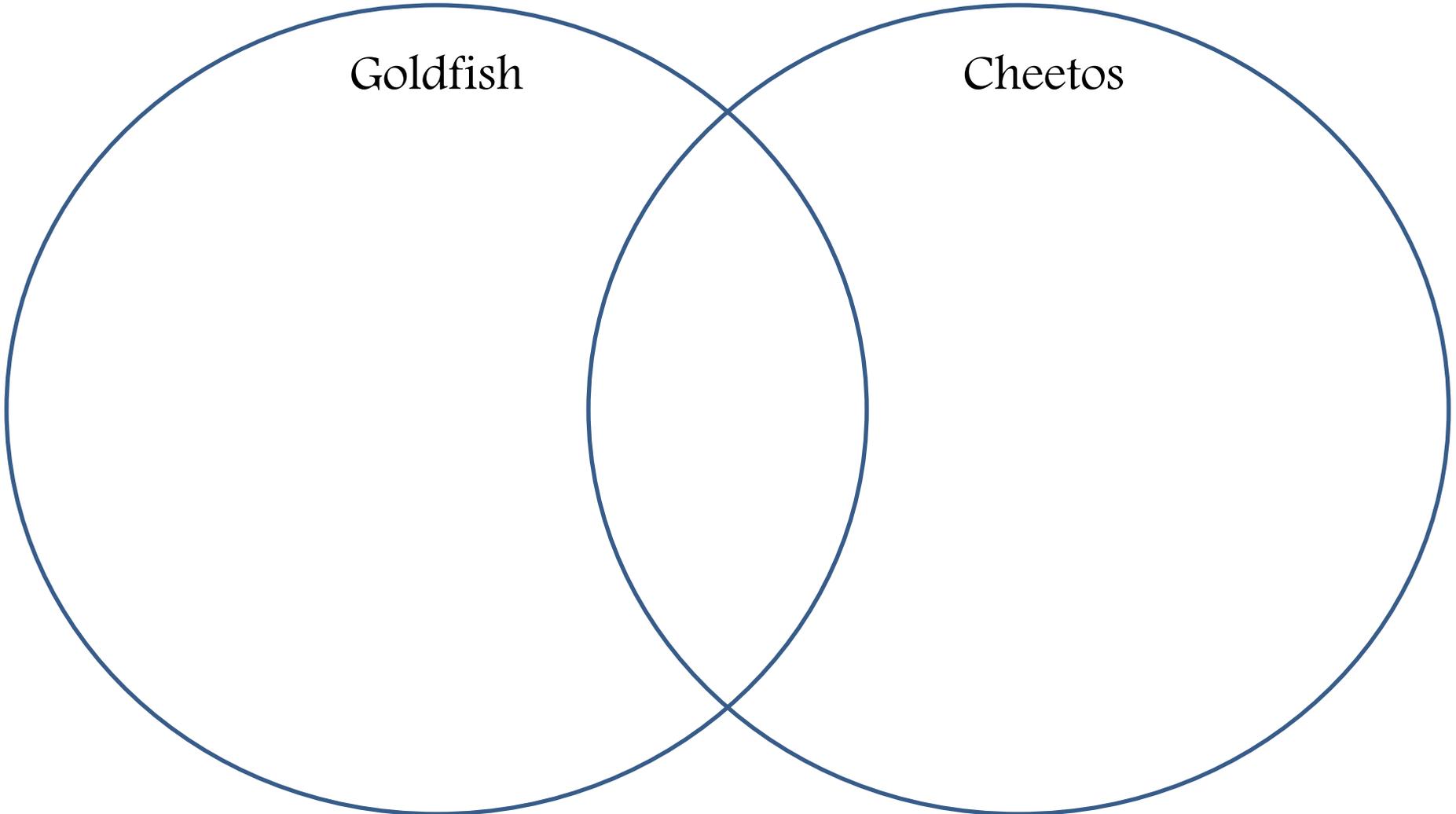
| | | | | |
|---|--|---|--|--|
| <p>Goldfish</p>  | <p>Cheetos</p>  | <p>salty</p>  | <p>orange</p>  | |
| <p>snack foods</p>  | <p>fish shape</p>  | <p>stick shape</p>  | <p>crunchy</p>  | |
| <p>long</p>  | <p>short</p>  | <p>cheese flavored</p>  | <p>come in a box</p>  | <p>come in a bag</p>  |

Common Physical Properties

- Compare the physical properties of two snack foods. Look at their texture, color, shape, and taste, length, and odor. Glue the picture/word card in the correct area of the Venn Diagram

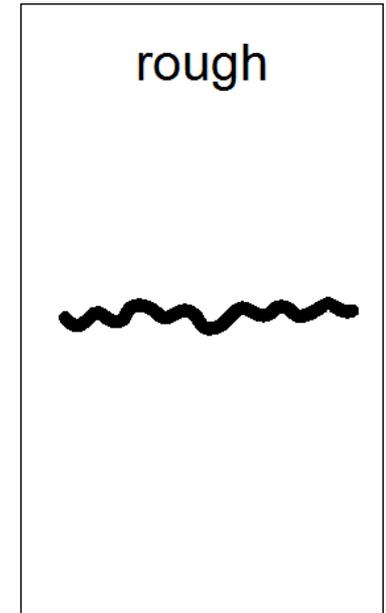
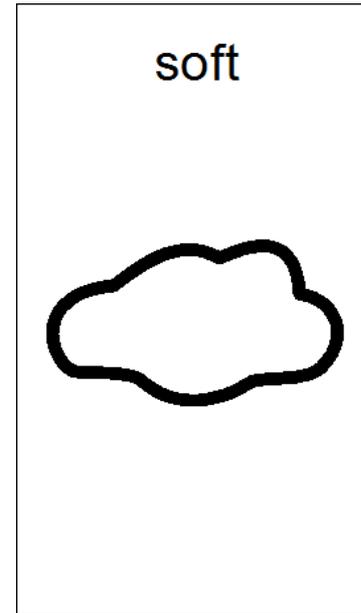
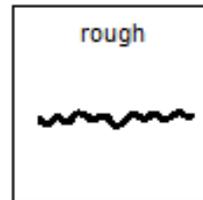
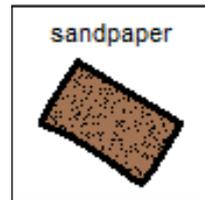
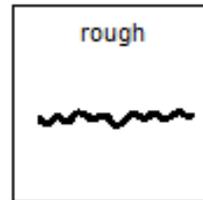
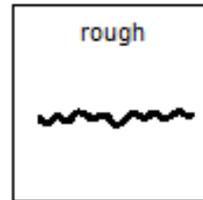
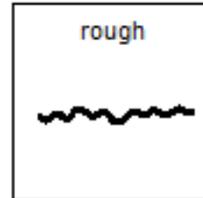
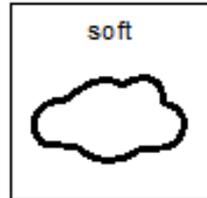
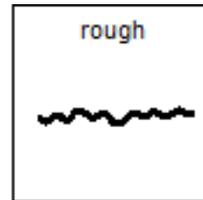
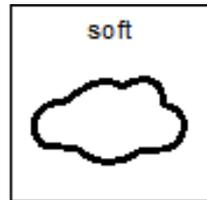
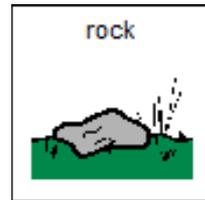
Goldfish

Cheetos



Soft or Rough

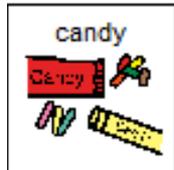
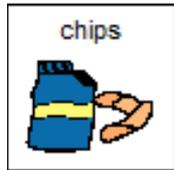
Reach into the touch box without looking. When you feel something, say, "I feel something soft" or "I feel something rough". Pull the object out, look at it, and record your answers.



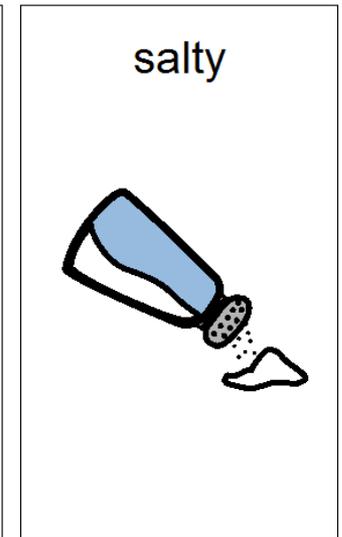
Use photo/word cards or a communication device to assist non-verbal students in communicating their findings.

Sweet or Salty

Taste and decide if the food is sweet or salty. Mark your answer.



Pictures for communication



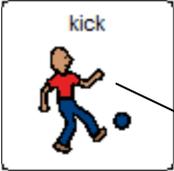
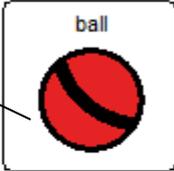
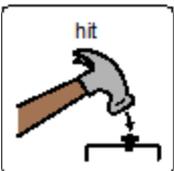
5th Grade PS 6.5.6 & 7th Grade PS 7.7.3 Potential & Kinetic Energy

| 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 6.5.6 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. |
| 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. |

Potential and Kinetic Energy

Matching Worksheet

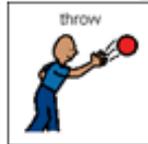
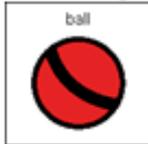
Directions: Draw a line to the matching potential and kinetic forces.

| | |
|---|--|
| <p>kick</p>  | <p>stand</p>  |
| <p>go</p>  | <p>ball</p>  |
| <p>run</p>  | <p>car</p>  |
| <p>drive</p>  | <p>wheelchair</p>  |
| <p>hit</p>  | <p>hammer</p>  |

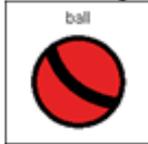
- -Potential energy is stored energy (object is at rest)
- -Kinetic energy is the energy used while moving
- -When an object is put into motion, potential energy turns into kinetic energy
- -When an object comes to rest, kinetic energy turns into potential energy

Energy

1. Which picture demonstrates potential energy?



2. Which picture demonstrates kinetic energy?



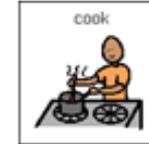
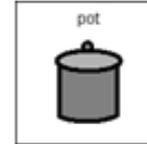
3. Which picture demonstrates potential energy?



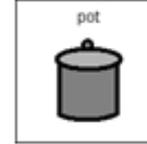
4. Which picture demonstrates kinetic energy?



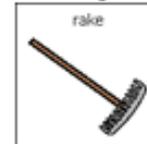
5. Which picture demonstrates potential energy?



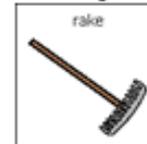
6. Which picture demonstrates kinetic energy?



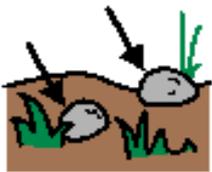
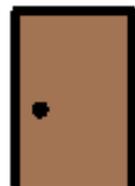
7. Which picture demonstrates potential energy?



8. Which picture demonstrates kinetic energy?



Make larger versions of each photo card. Have the student answer the questions by eye gazing or touching the picture/word card representing his/her response. Give the student a stamp or dauber to mark the answer on the work sample.

| | | | |
|---|--|---|---|
| <p>go</p>  | <p>swing</p>  | <p>push</p>  | <p>throw</p>  |
| <p>kick</p>  | <p>drive</p>  | <p>hit</p>  | <p>jump</p>  |
| <p>volleyball</p>  | <p>hammer</p>  | <p>car</p>  | <p>rocks</p>  |
| <p>wheelchair</p>  | <p>swing set</p>  | <p>trampoline</p>  | <p>door</p>  |

Have the student match the pictures representing kinetic and potential energy or sort the pictures by potential and kinetic.

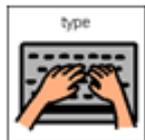
Types of Energy

Directions: Identify the picture that demonstrates kinetic energy for each example of potential energy.

1. Cleaner



2. Keyboard



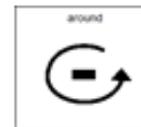
3. Bike



4. Elevator



5. Ferris wheel



6. Mixer



7. Broom

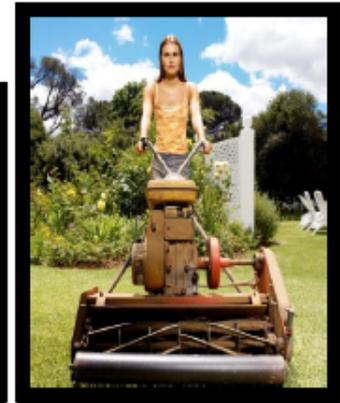


Science N2Y



Great photographs that can be used to illustrate kinetic and potential energy.





Can use a T Chart to sort the photos by kinetic or potential energy.

5th Grade PS 6.5.2

Simple Machines

| | | | | | |
|---|---|---|--|--|--|
| 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: <ul style="list-style-type: none"> 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 |

Simple Machines

PS.6.5.2 Conduct investigations using

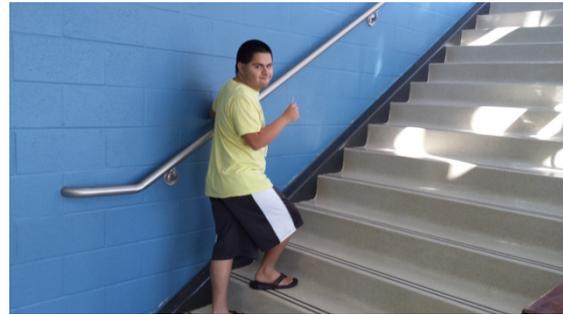
- *levers
- *pulleys
- *inclined planes
- *wedges
- * screws
- * wheels and axles

- Show pictures of students sweeping, going up stairs or ramps, pushing a wagon or wheelchair. Have them identify what simple machine they are investigating.

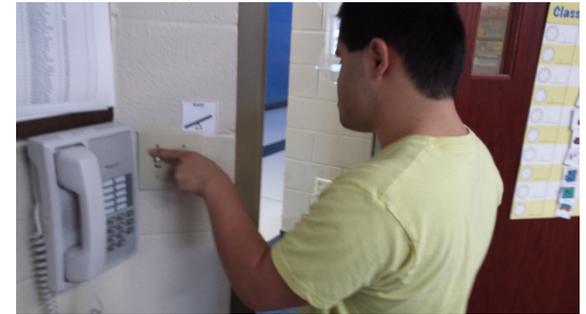
Conduct Investigations Using Simple Machines



Bottle cap-screw



Stairs- inclined plane



Light switch-lever



Screen-pulley



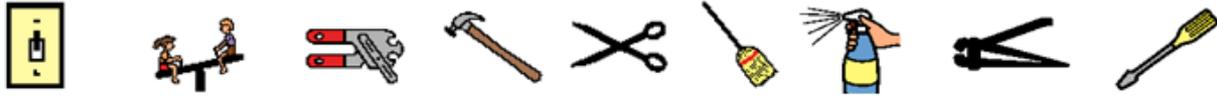
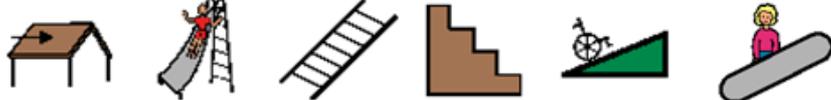
Broom-lever



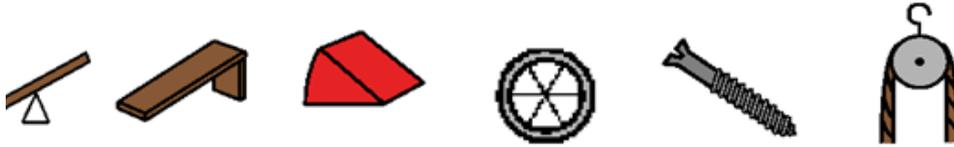
Fan-wheel and axle

Show the student identifying the simple machine then investigating the machine by using it correctly.

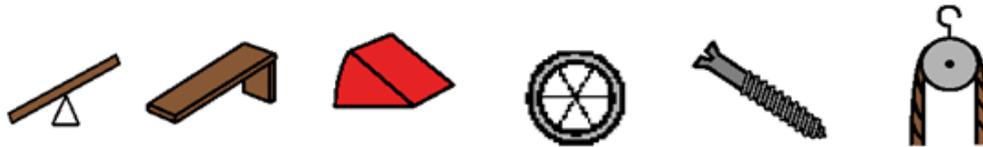
Simple Machines Scavenger Hunt

| Simple Machine | Examples (mark each simple machine you find) | # of objects |
|---|---|--------------|
| <p>Lever</p>  |  <p>light switch see-saw can opener hammer scissors broom spray bottle nail clippers screw driver</p> | |
| <p>Inclined Plane</p>  |  <p>roof slide ladder stairs ramp escalator</p> | |
| <p>Wedge</p>  |  <p>nail ax doorstop knife saw fork shovel zipper</p> | |
| <p>Wheel and Axle</p>  |  <p>fan clock bike wheel doorknob car wheel wheelbarrow cart</p> | |
| <p>Screw</p>  |  <p>light bulb lid jar lid bottle cap screw</p> | |
| <p>Pulley</p>  |  <p>elevator flag pole drape cord fishing pole reel garage door blinds</p> | |

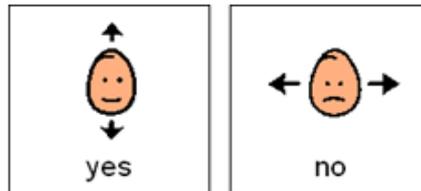
1. Which simple machine did you find the most of?



2. Which simple machine did you find the least amount of?



3. Did you find any simple machines that were not in the scavenger hunt?

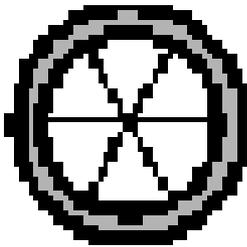


4. How many simple machines did you find in all? _____

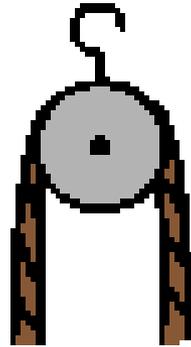
Simple Machine Cards

Use the cards to help students communicate what simple machines they have identified in their environment or on a work sample.

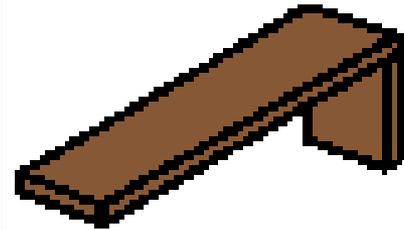
wheel & axle



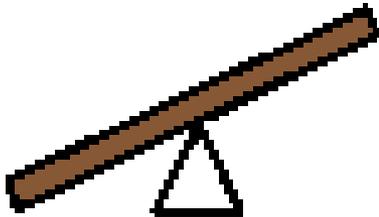
pulley



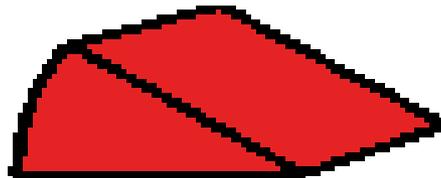
inclined plane



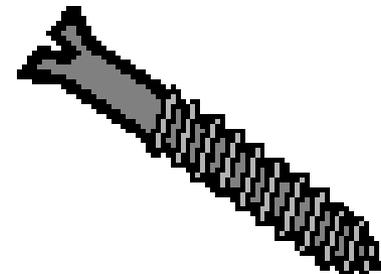
lever



wedge



screw



Simple Machines Walk

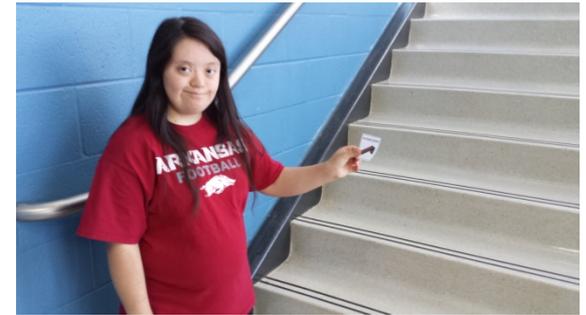
Have the student use the cards to identify the simple machine he/she has found in the school environment. If the student is non-verbal have him/her use an augmentative communication device with the pictures on the overlay. If the student is unable to walk around and locate the objects, provide some for them to investigate.



lever



wheel and axle



Inclined plane



wedge

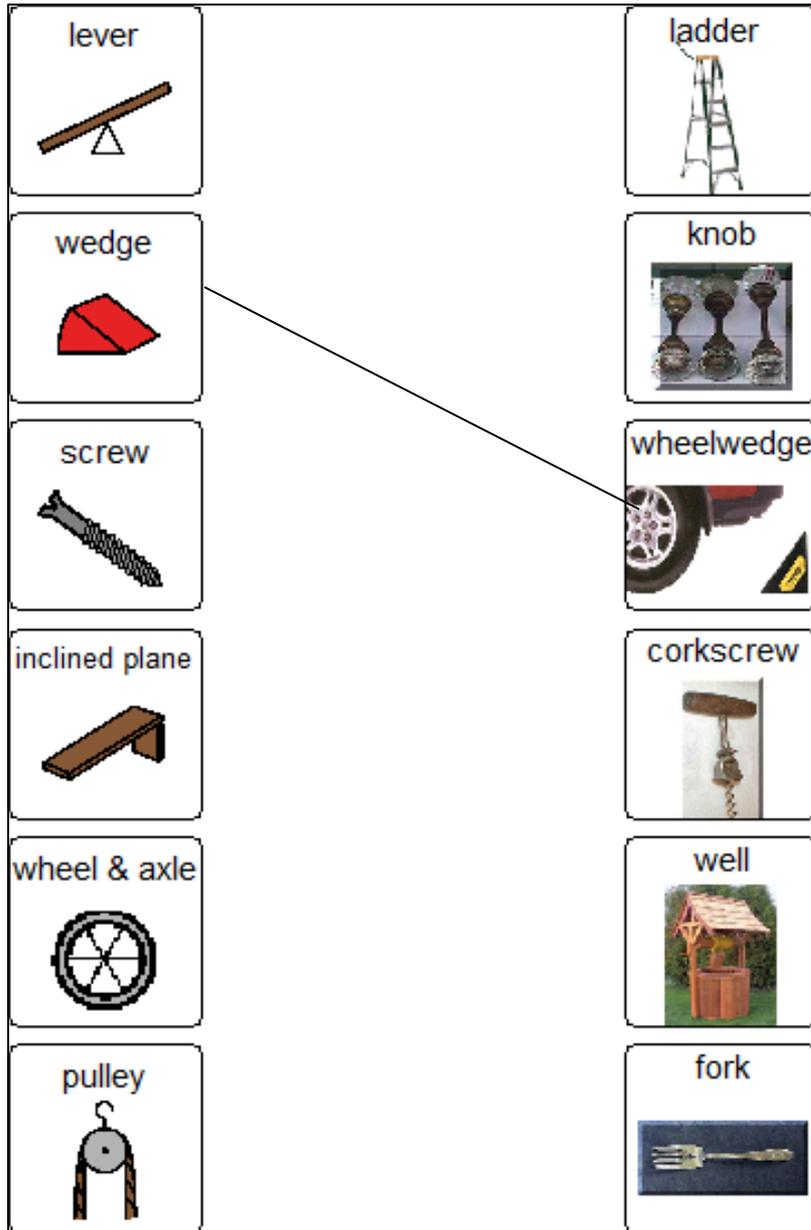


lever



lever

Simple Machines

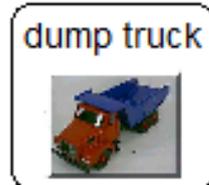
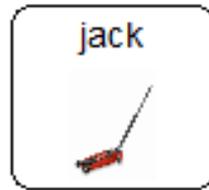
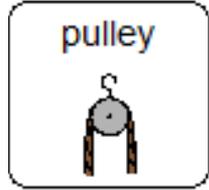
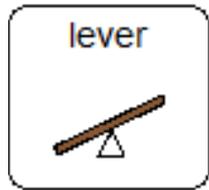
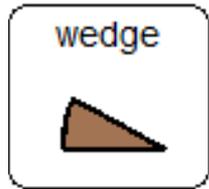


If the student is physically unable to draw the line connecting the simple machine to the example, have them first identify what the answer then use an alternate method of connecting the two, i.e., pipe cleaner, color dots, cut out strips of paper. If the student isn't able to manipulate any of these options, hand over hand is allowable as long as you show or explain how the student communicated his/her answer.

Simple Machines

PS 6.5.2

Directions: Identify the simple machines. Mark your answers.



5th Grade ESS 8.5.2

Investigate the Growth of Crystals

| | | | | | |
|---|---|--|--|--|--|
| 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. |

Name: _____

Crystals

Is the object crystal? Mark your answer.

rock salt



yes

no

s'mores



yes

no

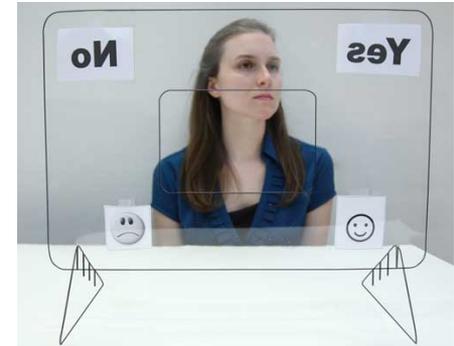
pyrite



yes

no

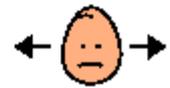
1.



yes



no



Yes

No

Modes of Communication

rock crystal candy



yes

no

quartz



yes

no

baseball bat



yes

no

2.

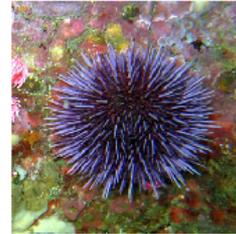
amethyst



yes

no

sea urchin



yes

no

gypsum



yes

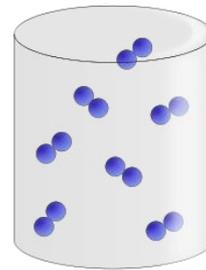
no

3.

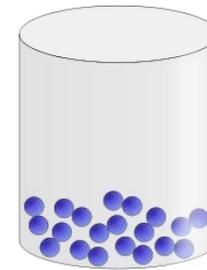
5th Grade PS 5.5.6

States of Matter

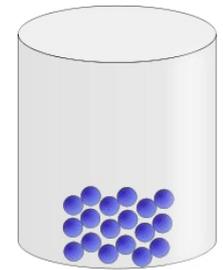
- PS 5.5.6 Explain how heat influences the
- states of matter of a substance:
- solid
- liquid
- gas



Gas



Liquid



Solid

Properties of Matter

PS 5.5.6

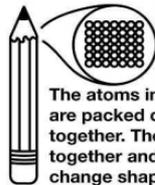
Why Does Matter Matter?

by Kelly Hashway

What do trees, air, and water have in common? They all have matter. That means they take up space. You might be wondering why these things look so different if they all have matter. Everything found on Earth can be grouped into one of three states of matter: solid, liquid, or gas. In order to figure out which state of matter an object fits in, we have to examine its properties. The properties we look at are shape, mass, and volume. Mass is the amount of matter an object has, and volume is the amount of space the matter takes up.

Solid

Solids are easy to recognize. They have definite shape, mass, and volume. Trees are solids. They are made up of tiny particles called atoms. These atoms are packed closely together, and they hold the solid in a definite shape that does not change. If you look around your house, you will see lots of solids. Televisions, beds, tables, chairs, and even the food you eat.



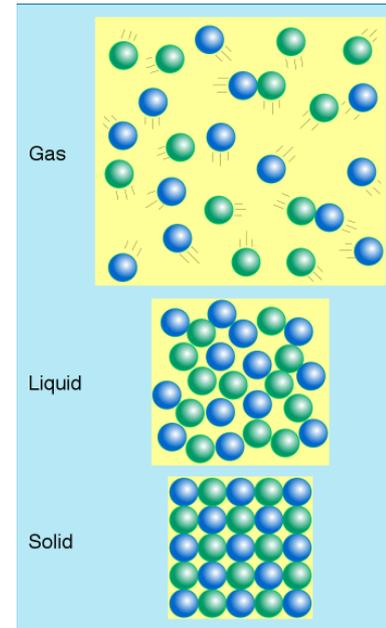
The atoms in a solid are packed closely together. They bond together and do not change shape.

Liquid

Liquids do not have definite shape, but they do have definite mass and volume. Liquids are similar to solids because their atoms are close together, but what makes a liquid different is that those atoms can move around. Liquids can change shape by flowing. If you've ever spilled a glass of milk, then you know it spreads out across the floor. It does this because the milk is taking the shape of the floor. Since liquids do not have a definite shape of their own, they will take the shape of their containers. This is why the same amount of milk can look different in a tall glass, a wide mug, or spread out on your kitchen floor.

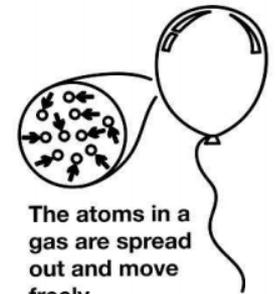


The atoms in a liquid are close together. They slide around.



Gases do not have definite shape or volume. Like liquids, gasses will take the shape of their containers. If a gas is not in a container, it will spread out indefinitely. This is because the atoms in a gas are spaced farther apart than in a solid or a liquid. And being spread out like this allows them to move around freely. Think about the air you breathe everyday. That air is spread across the empty space around the earth. You've probably also noticed that you usually cannot see the air. This is another property of gases. Even though we cannot see them, you come in contact with them everyday. There's air in the tires of your family car and your bicycle. The sun is made up of gases, and the clouds in the sky are mostly made from water vapor.

Gas



The atoms in a gas are spread out and move freely.

STATES OF MATTER

All About SOLIDS

Put examples here

table



log



book



PROPERTIES of a solid

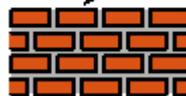
solid

property

hot dog



brick



Definite shape

Strong bond

STATES OF MATTER

Picture

Definition

GAZ

LIQUID

SOLID

Not tightly packed
Allowing movement



smoke



Atoms not touching
Each other, but floating
around



table



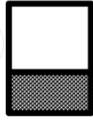
Atoms are tightly
packed together



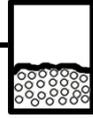
water



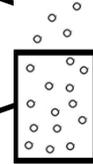
Three States of Matter



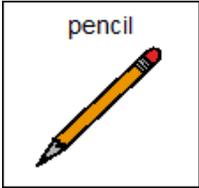
Solid



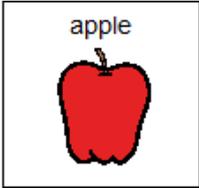
Liquid



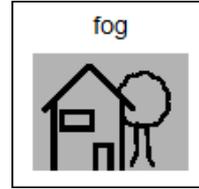
Gas



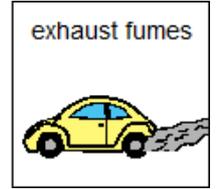
pencil



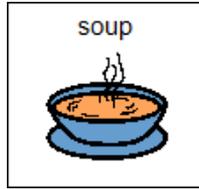
apple



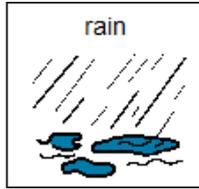
fog



exhaust fumes



soup



rain

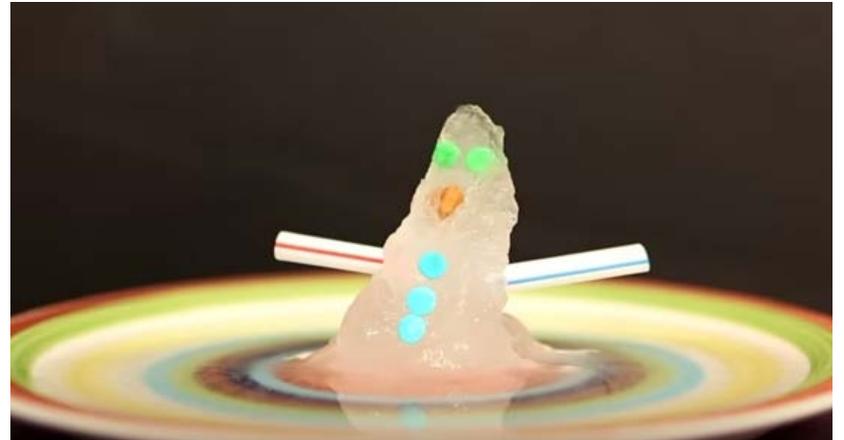
Pictures to use on work samples



Experiment with Solids and Liquids



Freeze water with the touch of a finger.



Build a snowman with water and ice.

Materials Needed



plate



timer



crushed ice



glass



freezer



Purified Water

Procedure: Experiment 1: Turning a Liquid into a Solid



1. Freeze water bottles for 2 hours 15 minutes



2. Carefully open the water bottle.



3. Tip the glass and carefully pour in water.



4. Dip one finger into a bowl of crushed ice, making sure to leave ice on the finger.



5. Gently touch the surface of the water.

I. What happened to the water in the glass?

A.



The water remained a liquid.

B.



The water turned into a solid.

Procedure: Experiment 2 Turning a Liquid into a Solid



1. Pour water into a plate till it reaches the surface.



2. Place the plate into the freezer and leave it for two hours.

2. What happened to the water in the plate?

A.

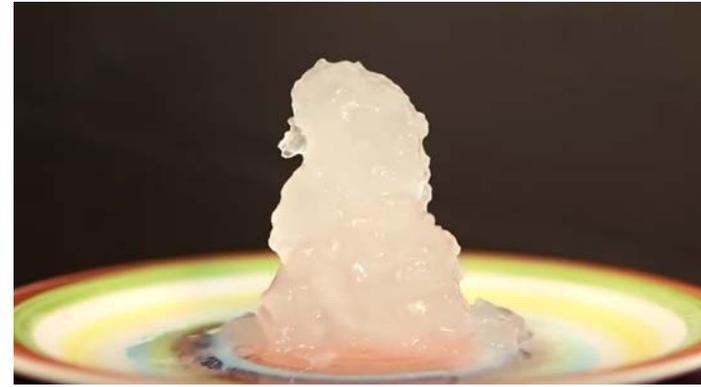


It froze into a solid.

B.



It remained a liquid.



3. Next, pour very cold water on top of the frozen water and watch it as it changes.

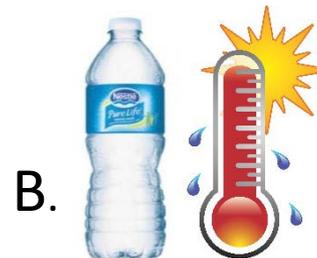


You can mold the water into a snowman and decorate it using straws, wiggly eyes, sprinkles, and tip of a carrot.

3. Why did the frozen water on the plate change?



The water in the bottle was colder than the water on the plate.



The water in the bottle was warmer than the water on the plate.

Experiment with Gasses



experiment page

submitted by Chrissy Wostmann

Balloon Fiesta

Experiment



NEED



blow dryer



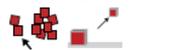
plastic bag



oven mitt



What We Know:

- A hot air balloon filled with hot air can rise. 
- Molecules are further apart in hot air so it is lighter. 
- Hot air has fewer molecules and are further apart. 
- Molecules are closer together in cold air so it is heavier. 

Step 1: Ask a Question

• If we fill a plastic bag with hot air will it rise or fall? 

Step 2: Make a Guess / Hypothesis

| | | |
|---|---|---------------|
| <p>I think...</p> <p>Hot air will make the bag rise.</p> <div style="text-align: center;"></div> | <p>Hot air will make the bag fall.</p> <div style="text-align: center;"></div> | <p>Other:</p> |
|---|---|---------------|

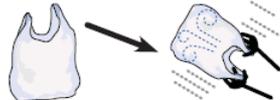
September 26, 2011

65
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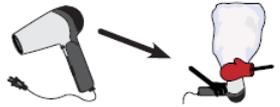


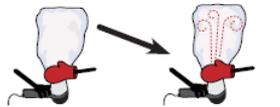
Step 3: Do an Experiment

1. Open the bag and fill it with air by pulling it quickly in the air around you.


2. Close off the bag with your hand but leave a small opening.


3. Put a hair dryer in the opening. Hold the bag using oven mitt.


4. Heat the air in the bag with the hair dryer for a few minutes.


5. Let go of bag. Turn off hair dryer.


6. Observe.



September 26, 2011

66
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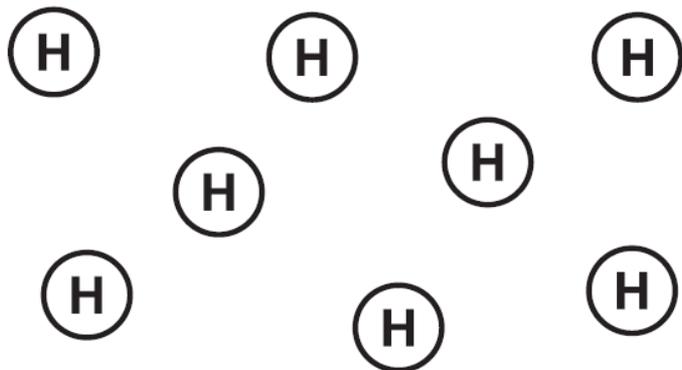


Step 4: Organize Data

Color the **HOT (H)** air molecules **RED**.



Color the **COLD (C)** air molecules **BLUE**.



Step 5: Find the Conclusion

Did the hot air make the bag lighter?



yes



no



Did the hot air make the bag heavier?



yes



no



Did the bag rise up into the air?



yes



no



Was your guess / hypothesis correct?



yes



no

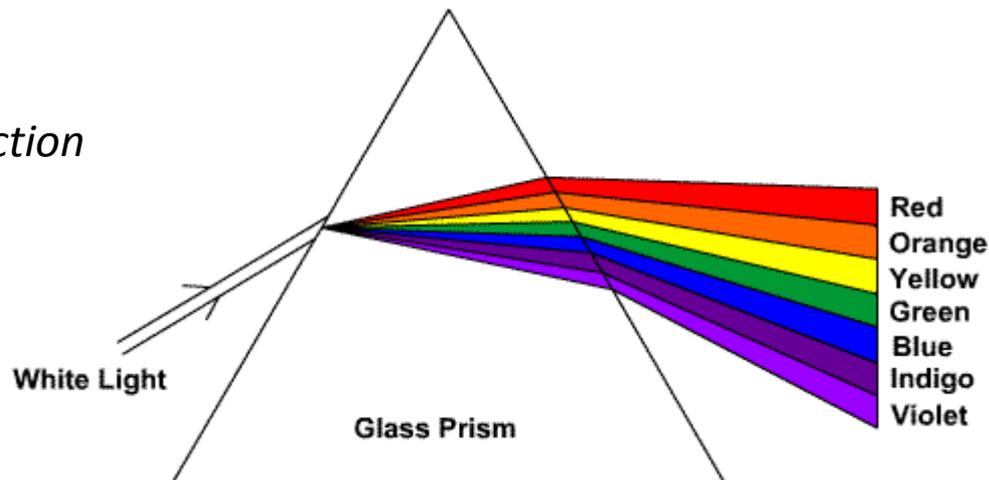


5th Grade PS 7.5.2

Light Investigations

| | | | | | |
|--|--|--|---|---|--|
| 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 |

Light absorption, refraction, and reflection

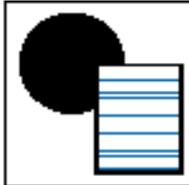
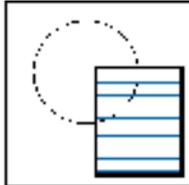
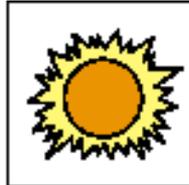


Light Can Be Absorbed

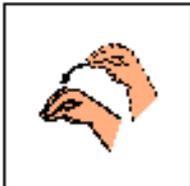
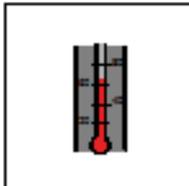
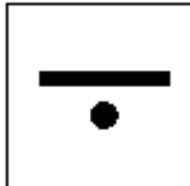
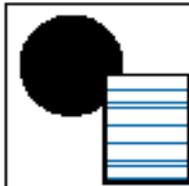
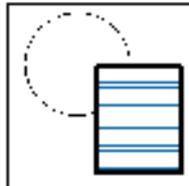
PS 7.5.2

Follow the procedure to demonstrate how absorbed light energy is converted into heat energy.

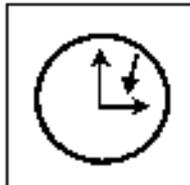
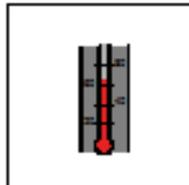
Put a piece of black construction paper white construction paper on a sunny windowsill.

1.   AND    

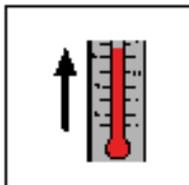
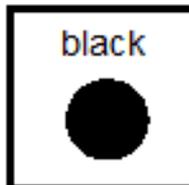
Put a thermometer under each piece of paper.

2.      

Wait a few hours, then check the temperatures.

3.  2 or 3    

Which color of paper had a hotter temperature?

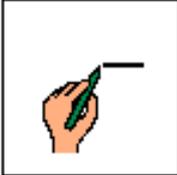
4.      

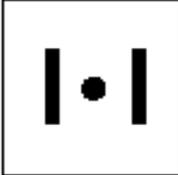
Refraction of Light Rays

Name: _____

Follow the procedure to demonstrate the bending of light rays. Place a mark in the last box when each step is completed.

1. Draw an arrow in the middle of an index card.





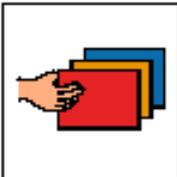
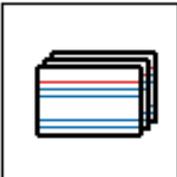
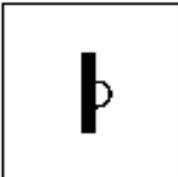


2. Fill a jar with water.



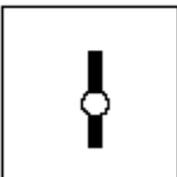


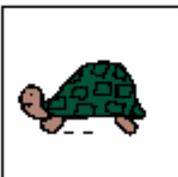
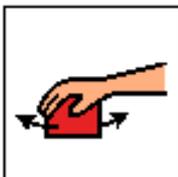
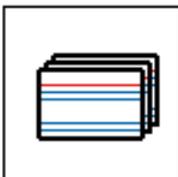

3. Place the card behind the jar.

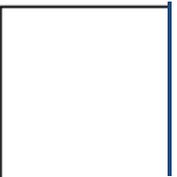






4. Stand in front of the jar and slowly move the card away.



Refraction of Light Rays Outcome

What happened when

you

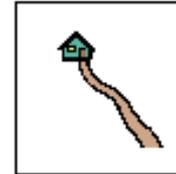
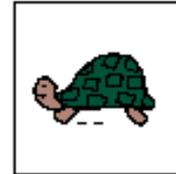
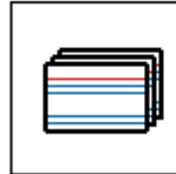
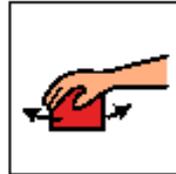
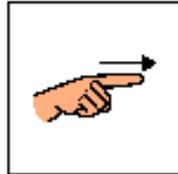
moved

the card

slowly

away

from the jar?



Did the arrow change

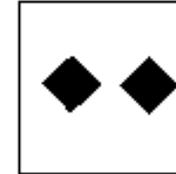
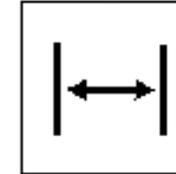
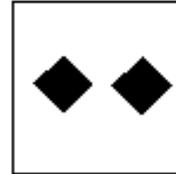
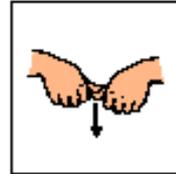
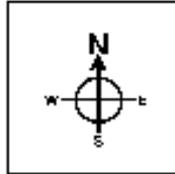
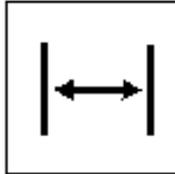
direction or

stay

the same?

changed

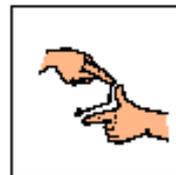
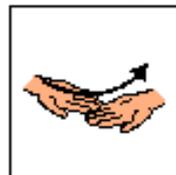
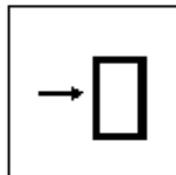
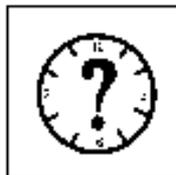
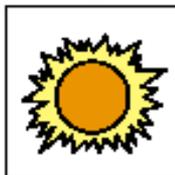
the same



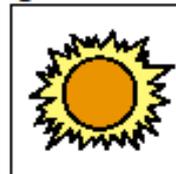
What does light do when it enters a new material at an angle?

goes straight

bends



What is the science word for when light bends?



refracts

reflects

Name: _____

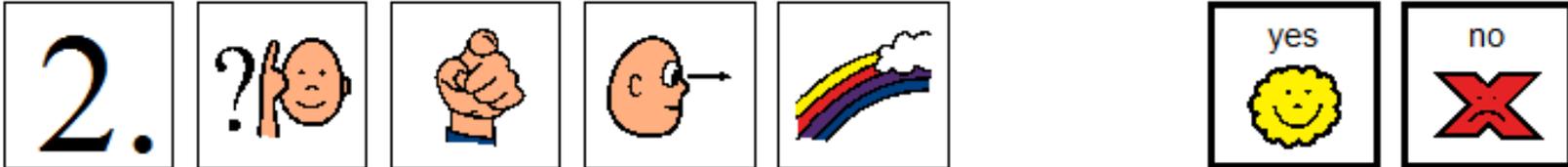
Refraction of Light Through a Prism

Follow the procedure to demonstrate how light bends, or refracts, when it enters a prism.

1. Hold up a prism so that sunlight shines on it.

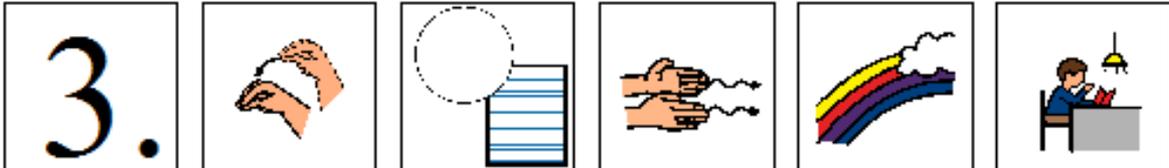


2. Do you see a rainbow?



Put a piece of white paper in the path of the rainbow to study it.

3.



4. Color and label the colors of the rainbow in order on your worksheet.



Refraction of Light Through a Prism.

PS 7.5.2

Directions: Cut out the color cards and put them in order as you see them.

| |
|--|
| |
| |
| |
| |
| |
| |
| |
| |



5th Grade PS 7.5.4

Light Investigations

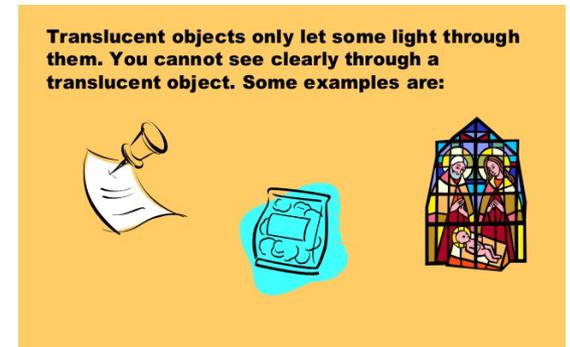
| | | | | | |
|---|--|--|---|---|---|
| Physical Science | Content Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy and using appropriate safety procedures, equipment, and technology | | | | |
| Student Learning Expectation Grade 5 | Essence of Student Learning Expectation | Less Complex → More Complex | | | |
| PS 7.5.4 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. |



Opaque



Transparent



Translucent

Multiple Choice

Name: _____

Directions: Conduct experiments and mark the correct answer.

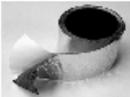
1. What objects are translucent?

| | | | | | | |
|---|---|--|---|---|---|--|
| styrofoam  | wax paper  | aluminum  | fabric  | glass  | plastic  | magnifying glass  |
|---|---|--|---|---|---|--|

2. What objects are transparent?

| | | | | | | |
|---|---|--|---|---|---|--|
| styrofoam  | wax paper  | aluminum  | fabric  | glass  | plastic  | magnifying glass  |
|---|---|--|---|---|---|--|

3. What objects are opaque?

| | | | | | | |
|---|---|--|---|---|---|--|
| styrofoam  | wax paper  | aluminum  | fabric  | glass  | plastic  | magnifying glass  |
|---|---|--|---|---|---|--|

Multiple Choice

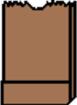
Name: _____

Directions: Mark the correct answer.

1. What objects are translucent?

| | | | | | | |
|---|--|--|---|--|---|--|
| toilet paper  | newspaper  | sandpaper  | paper  | bag  | window  | tissues  |
|---|--|--|---|--|---|--|

2. What objects are transparent?

| | | | | | | |
|---|--|--|---|--|---|--|
| toilet paper  | newspaper  | sandpaper  | paper  | bag  | window  | tissues  |
|---|--|--|---|--|---|--|

3. What objects are opaque?

| | | | | | | |
|---|--|--|---|--|---|--|
| toilet paper  | newspaper  | sandpaper  | paper  | bag  | window  | tissues  |
|---|--|--|---|--|---|--|