

ALCOSS: 1.1

Select appropriate tools and technological resources needed to gather, analyze, and interpret data, such as platform balances, hand lenses, computers, maps, graphs, journals.

Mastered:

Students can select appropriate tools and technological resources needed to gather, analyze, and interpret data.

Present:

Students will use a RAFT to demonstrate how to use tools and technological resources to gather, analyze, and interpret data.

Going Forward:

Students will create new and unusual uses for balances, hand lenses, tape measures, and rulers.

Present and Going Forward Vocabulary:

Measurement, microorganism, ruler, centimeters, inches

Career Connections:

Cartographer, Navigator, Research Scientist, Climatologist, Meteorologist

Advanced Understanding & Activity (Alternate activity):**RAFT** (Student page found in Appendix A)

Students will choose one row. They will write about the TOPIC from the perspective of the ROLE to the AUDIENCE using the FORMAT. You can allow students to choose one item from each of the four columns. Provide an audience for the student to present their product. Students may need to plan their product using the organizational tool, Primary Project Planner.

<u>ROLE</u>	<u>AUDIENCE</u>	<u>FORMAT</u>	<u>TOPIC</u>
Blocks	Balance	Comic Strip	To be balanced, or not to be balanced
Microorganism	Hand Lenses	Role Play	Why am I so small?
Pumpkin	Tape Measure	Speech	My Oh, Oh My, how round am I!
Shoebox	Ruler	Nursery Rhyme	Which numbers should I use?

Literature Connections/Resources:

- Chancellor, Deborah. Maps and Mapping. NY: Kingfisher. 2007.
- Cosgrove, Brian. Eyewitness Weather. NY: DK Children. 2007.
- Moses, Will. Will Moses' Mother Goose. NY: Philomel Books. 2003.

ALCOSS: 1.2

Identify basic properties of objects.

Mastered:

Students can identify the basic properties of objects.

Present:

Students will weigh and measure different objects and solve addition math stories to identify the properties of objects.

Going Forward:

New Question: What do you see as other possible outcomes of weighing and measuring various objects?

Present and Going Forward Vocabulary:

Weight, characteristics, circumference, radius, diameter

Career Connections:

Research Scientist, Biologist, Botanist, Geologist

Advanced Understanding & Activity (Alternate activity):

Students may choose to complete the Oh, That's Good/Oh, That's Bad story or the Web site activities:

- **Oh That's Good/Oh That's Bad Story**

Students will research the following questions.

- Why do we need to weigh and measure objects?
- Why must all states use the same measurement system?
- Why did the United States not convert measurements and weight to the metric system?

Then students will read the Oh, That's Good/Oh, That's Bad! scenario. Students will write and illustrate the chain of events to show the positive and negative situations surrounding the scenario. Students may use additional sheets of paper in order to complete their story.

SCENARIO:

A group of students went on a field trip to the Peach Park in Clanton, AL. There, they found several baskets of peaches. Oh, that's good! No, that's bad! The students needed to find the circumference, radius, diameter, and weight of the delicious peaches. Oh, that's good...

• **Web Site activities**

- Choose three activities from the Web site to complete.
Web site: <http://www.learningscience.org/psc1apropofmaterials.html>

Literature Connections/Resources:

- Challen, Paul. The Metric System (My Path to Math). NY: Crabtree Pub Co . 2009.
- Hightower, Susan. Twelve Snails to One Lizard: A Tale of Mischief and Measurement. NY: Simon & Schuster Children's Publishing. 1997.
- Hirschmann, Kris. Is a Paw a Foot?: All about Measurement (Artist Collection: The Dog). NY: Scholastic Paperbacks. 1996.

ALCOSS: 1.3
Describe effects of forces on objects, including change of speed, direction, and position.

Mastered:

Students can describe effects of forces on objects, including change of speed, direction, and position.

Present:

Students will identify changes in speed, direction, and position when different forces are applied to an object.

Going Forward:

Students will devise ways to deal with changes in force.

Present and Going Forward Vocabulary:

Force, speed, direction, friction

Career Connections:
Engineer, Imagineer, Amusement Park Designer, Automobile Engineer, Civil Engineer

Advanced Understanding & Activity (Alternate activity):

Tic-Tac-Toe (Student page found in Appendix A)

Students will choose three activities in a row, column, or diagonal, just like TIC-TAC-TOE. Then students will complete the contract to submit to their teachers. Students may need to plan their product using the organizational tool, Primary Project Planner.

1. Create a rollercoaster to demonstrate the change in motion using different forces.	2. Devise a way to increase the speed of a marble on a ramp without pushing or pulling.	3. Design a questionnaire to gather information about the positioning of an object when force is applied to change the speed.
4. Write an opinion statement about force.	5. Conduct an investigation to produce information to support your view about force and motion.	6. Invent a machine that can be used to create the greatest force.

7. Prepare a case to present your view about force and motion.	8. Design a set of recommendations for classmates that will show the greatest force.	9. Write a persuasive speech about which force applied would be the best to use for the greatest movement.
--	--	--

Literature Connections/Resources:

- Cobb, Annie. Wheels. NY: Random House Books for Young Readers. 1996.
- Sadler, Wendy. Playgrounds (How Do They Work?). Mankato, MN: Heinemann-Raintree. 2005.
- Wood, Audrey. The Red Racer. NY: Aladdin. 1996.

ALCOSS: 1.4
Describe survival traits of living things, including color, shape, size, texture, and covering.

Mastered:

Students can describe survival traits of living things, including color, shape, size, texture, and covering.

Present:

Students will distinguish between a variety of habitats and natural homes of animals by using a Kaplan Depth and Complexity activity.

Going Forward:

Students will recommend ways to protect natural habitats and identify animals that are native to the habitat.

Present and Going Forward Vocabulary:

Prairie, attributes

Career Connections:
Marine Biologist, Botanist, Climatologist

Advanced Understanding & Activity (Alternate activity):

Kaplan Depth/Complexity (Student page found in Appendix A)

Students will choose which element focus to research and complete the product. Students may need to plan their product using the organizational tool, Primary Project Planner.

ELEMENT	QUESTIONS/ACTIVITY	PRODUCT(S)
LANGUAGE OF THE DISCIPLINE	What terms or words are specific to the work of the marine biologist, botanist, or climatologist? What tools does the marine biologist, botanist, or climatologist use?	Create an ABC book of the terms, words, and tools specific to your chosen discipline.
DETAILS	What are its attributes? What features characterize this? What specific elements define this? What distinguishes this from other things? Choose One Habitat: <ul style="list-style-type: none"> • Ocean, Desert, or Prairie 	Choose one habitat. Research the details of your habitat using the questions provided. You may think of more questions. Present your habitat to the class. You must include a visual aid, such as a poster, PowerPoint, Prezi, video, etc.
PATTERNS	What can be done to protect the habitat? What will happen if there is continuous pollution affecting the habitat? What are possible solutions to prevent endangering animals in the habitat?	Choose a habitat (which can be your community) and research the provided questions. How can you help protect that habitat or endangered animal? Pick one solution to present to your class, PTA, or an interested organization like the Sierra Club or Audubon Society. Present your solution with a visual aid, such as a poster, PowerPoint, Prezi, video, etc.

OVER TIME	How and why do things change or remain the same? What will happen to your habitat if people do not protect the Earth?	Research the questions. Then create a comic book or a skit explaining what happened to the habitat when no one protected it.
-----------	--	--

Research Web site: <http://kids.nationalgeographic.com/kids?source=NavKidsHome>

Literature Connections/Resources:

- Corwin, Jeff. Animals and Habitats of the United States. NY: Puffin. 2009.
- Kalman, Bobbi. The ABCs of Habitats (ABCs of the Natural World). NY: Crabtree Publishing Company. 2007.
- Press, Judy. Animal Habitats! Nashville, TN: Williamson Books. 2005.

ALCOSS: 1.5
 Identify parts of the human body, including the head, neck, shoulders, arms, spine, and legs.

<p>Mastered: Students can identify parts of the human body, including the head, neck, shoulders, arms, spine, and legs.</p>	<p>Present: Students will distinguish and describe body parts by completing a That’s Good! That’s Bad! scenario to help a physician diagnose problems with their bodies.</p>	<p>Going Forward: New Question: Can you identify other body parts? Students will determine what kind of physician to visit for ailing body parts.</p>
---	--	---

Present and Going Forward Vocabulary:
 Ailing, diagnosis

Career Connections:
 Physician for specific body-parts- Orthopedic, Nutritionist, Dietician, Radiologist, Neurologist, Podiatrist

Advanced Understanding & Activity (Alternate activity):
That’s Good! That’s Bad! Chain Story (Student page found in Appendix A)

- Students will research the following questions.
- What are the different organs in the following systems: circulatory, respiratory, digestive, and nervous?
 - How do these systems function within the body?
 - What can cause the system not to function properly?

Then students will read the That’s Good! That’s Bad! scenario. Students will write and illustrate the chain of events to show the positive and negative situations surrounding the scenario. Students may use additional sheets of paper in order to complete their story.

Scenario:
 One day a little boy had to visit his physician because he was experiencing pain throughout his body. While at the physician’s office, the boy could not explain to the physician which body parts were hurting. The little boy needed help distinguishing between his ailing body parts. Oh, that’s bad!

Literature Connections/Resources:

- Oilen, Rebecca and Frost, Helen. Muscular System (Human Body Systems). Capstone Press. 2006.
- Oilen, Rebecca and Frost, Helen. Circulatory System (Human Body Systems). Capstone Press. 2006.
- Frost, Helen. The Respiratory System (Human Body Systems). Pebble Books. 2000.
- Manolis, Kay. The Digestive System (Blastoff! Readers: Body Systems). Children’s Press. 2009.
- Manolis, Kay. The Skeletal System (Blastoff! Readers: Body Systems). Children’s Press. 2009.
- Olesky, Walter G. The Nervous System (Insider’s Guide to the Body). Rosen Publishing Group. 2000.

ALCOSS: 1.6

Recognize evidence of animals that no longer exist.

Mastered:

Students can recognize evidence of animals that no longer exist.

Present:

Students will explore and research information about extinction and complete a Think Fast activity.

Going Forward:

Students will determine ways to replenish endangered species.

Present and Going Forward Vocabulary:

Endangered, extinction

Career Connections:

Paleontologist, Vertebrate Paleontology, Invertebrate Paleontologist, Micropaleontologist, Paleoecologist

Advanced Understanding & Activity (Alternate activity):

Think Fast (Student page found in Appendix A)

Follow the directions at each letter. Write your answers as quickly as possible on a separate piece of paper. Answers must start with the corresponding letter. For example, the answers for the first activity must start with the letter “F.” How many of these can you complete?

F	Name three animals that are extinct.
O	Name four causes of extinction.
S	Recommend ways to protect endangered species from becoming extinct.
S	Identify professionals that study fossils and causes of extinction.
I	Identify extinct plants and the time period they became extinct.
L	Describe the day and life of an extinct animal that is the only one of its kind that exists.

Literature Connections/Resources:

- Charman, Andy. I Wonder Why the Dodo is Dead. NY: Kingfisher. 2007.
- Pallotta, Jerry. The Extinct Alphabet Book. Watertown, MA: Charles Bridge Publishing. 1993.
- Page, Christiane. The Book of Endangered and Extinct Animals. NY: Kingfisher. 2004.

ALCOSS: 1.7

Identify components of Earth’s surface, including soil, rocks, and water.

Mastered:

Students can identify components of Earth’s surface, including soil, rocks, and water.

Present:

Students will identify the components of the Earth’s surface by distinguishing between various characteristics.

Going Forward:

Students will locate various rocks and construct a list of characteristics that identify the properties of the rocks.

Present and Going Forward Vocabulary:

Properties, mineral, sedimentary, metamorphic, igneous

Career Connections:

Geologist, Hydrologist

Advanced Understanding & Activity (Alternate activity):

Tic-Tac-Toe (Student page found in Appendix A)

Students will choose three activities in a row, column, or diagonal, just like TIC-TAC-TOE. Then students will complete the contract to submit to their teachers. Students may need to plan their product using the organizational tool, Primary Project Planner.

1. Create a model of the Earth's surface.	2. Verify the identity of a mineral by performing an acid test using vinegar.	3. Discuss the characteristics of the three types of rocks formed by the Earth.
4. Write an opinion statement about the surface of Earth.	5. Conduct an investigation to produce information to support your view about the components of soil.	6. Decide which planet is similar to Earth.
7. Create new and unusual uses for rocks.	8. Design an experiment for your classmates to use to identify the properties of rocks.	9. Devise ways to protect the soil.

Web site: <http://starchild.gsfc.nasa.gov/docs/StarChild/StarChild.html>

Literature Connections/Resources:

- Aiki. *Fossils Tell of Long Ago*. NY: Collins . 1990.
- Cole, Joanna. *The Magic School Bus Inside the Earth*. NY: Scholastic Press. 1989.
- Taylor, Paul. *Fossil (DK Eyewitness Books)*. NY: DK Children. 2004.

ALCOSS: 1.8
Recognize daily changes in weather, including clouds, precipitation, and temperature.

Mastered: Students can recognize daily changes in weather, including clouds, precipitation, and temperature.	Present: Students will use a RAFT activity to demonstrate how instruments are used to observe the weather.	Going Forward: Students will devise their own ways to recognize daily changes in the weather.
--	--	---

Present and Going Forward Vocabulary:
Anemometer, wind vane

Career Connections:
Meteorologist, Climatologist

Advanced Understanding & Activity (Alternate activity):

RAFT (Student page found in Appendix A)

Students will choose one row. They will write about the TOPIC from the perspective of the ROLE to the AUDIENCE using the FORMAT. You can allow students to choose one item from each of the four columns. Provide an audience for the student to present their product. Students may need to plan their product using the organizational tool, Primary Project Planner.

<u>ROLE</u>	<u>AUDIENCE</u>	<u>FORMAT</u>	<u>TOPIC</u>
Thermometer	Swimming Children	Persuasive Speech	The Temperature Outside Is Great Today!
Rain Gauge	Drops of Rain	Comic Strip	We Keep Growing!
Anemometer	Gust of Wind	Song	I Am Going Really Fast!
Wind Vane	Clouds	Set of Directions	Which way are we going?

Literature Connections/Resources:

- Miles, Elizabeth. *Forecasting the Weather (Heinemann First Library)*. Mankato, MN:

Heinemann-Raintree. 2005.

- Gibbons, Gail. Weather Forecasting. Aladdin. 1993.
- White, Nancy. The Magic School Bus Kicks Up a Storm: A Book About Weather. NY: Scholastic Paperbacks. 2000.

ALCOSS: 1.9

Identify ways to conserve Earth’s resources.

Mastered:

Students can identify ways to conserve Earth’s resources

Present:

Students will use the Good/Bad scenarios to identify the importance of conserving Earth’s resources.

Going Forward:

Students will formulate a plan of ways to conserve Earth’s resources.

Present and Going Forward Vocabulary:

Conservation

Career Connections:
Environmentalism, Conservationist

Advanced Understanding & Activity (Alternate activity):

That’s Good! That’s Bad! Chain Story (Student page found in Appendix A)

Students will research the following questions:

- What Earth’s resources do I use at school, home, church, etc.?
- How can someone conserve those resources?
- To answer the questions, make a T-chart to list the Earth’s resources and the ways that you can conserve them.

Then students will read the That’s Good! That’s Bad! scenario. Students will write and illustrate the chain of events to show the positive and negative effects of conserving and not conserving Earth’s resources surrounding the scenario. Students may use additional sheets of paper in order to complete their story.

Scenario:

A young girl woke up one day and could not determine if it was day or night. She had forgotten how to distinguish between the two. The young girl did not know if she needed to go to bed or go to school. Oh, That’s good....

Literature Connections/Resources:

- Brown, Laurie Krasny and Brown, Marc. Dinosaurs Go Green!: A Guide to Protecting Our Planet (Dino Tales; Life Guides for Families). Boston MA: Little, Brown Books for Young Readers. 2009.
- Lefkowitz, R. J. Save It! Keep It! Use It Again!: A Book About Conservation and Recycling (Finding-Out Book). NY: Crown Pub. 1977.
- Rand, Gloria. Fighting for the Forest. NY: Henry Holt and Co. 1999.

ALCOSS: 1.10
Describe uses of recycled materials.

Mastered:

Students can describe uses of recycled materials.

Present:

Students will explore and research information about recycled materials and complete a Think Fast activity.

Going Forward:

Students will create a model using only recycled materials.

Present and Going Forward Vocabulary:

Recycle, landfill, biodegradable

Career Connections:
 Environmental Engineer, Waste Management Engineer,
 Renewable Energy Consultant

Advanced Understanding & Activity (Alternate activity):

Think Fast (Student page found in Appendix A)

Follow the directions at each letter. Write your answers as quickly as possible on a separate piece of paper. Answers must start with the corresponding letter. For example, the answers to the first activity must start with the letter “R.” How many of these can you complete?

R	Name three ways to use recycled materials.
E	List five positives for recycling materials.
C	List three companies that recycle materials.
Y	Name five ways you can recycle at home and school.
C	List ways the Earth is protected by recycling.
L	Devise a plan to begin a recycling program at your school.
E	Name three negatives of individuals refusing to recycle.

Literature Connections/Resources:

- Bergen, Lara. Don't Throw That Away!: A Lift-the-Flap Book about Recycling and Reusing (Little Green Books). NY: Little Simon. 2009.
- Harlow, Rosie. Garbage and Recycling (Young Discoverers: Environmental Facts and Experiments). NY: Kingfisher. 2002.
- Inches, Alison. The Adventures of a Plastic Bottle: A Story About Recycling (Little Green Books). NY: Little Simon. 2009.

ALCOSS: 1.11
 Compare the day sky to the night sky as observed with the unaided eye.

Mastered:

Students can compare the day sky to the night sky as observed with the unaided eye.

Present:

Students will complete an “I Can...” activity to illustrate how the day sky and night sky compare.

Going Forward:

Students will use their imagination to describe how it would be if day was night and night was day.

Present and Going Forward Vocabulary:

Star, meteor, meteorite,

Career Connections:
 Astronomer, Astronaut, Meteorologist

Advanced Understanding & Activity (Alternate activity):

I Can... (Student page found in Appendix A)

The student will choose one or more “I CAN...” activity(ies) to accomplish, as time permits. Students must research their topics in order to develop the products. Students may need to plan their product using the organizational tool, Primary Project Planner.

1. Illustrate the difference in the day and night sky.
2. Compare and contrast the day and night sky by creating a Venn Diagram.
3. Make a comic strip illustrating changes throughout the day.
4. Research the cause of day and night and write a short story explaining day and night.

Literature Connections/Resources:

- Branley, Franklyn Mansfield. Sun Dogs and Shooting Stars: A Skywatcher's Guide.

Ormond Beach, FL: Camelot. 1993.

- Love, Ann. The Kids Book of the Night Sky. Tonawanda NY: Kids Can Press. 2004.
- Mitton, Jacqueline. Once Upon a Starry Night: A Book of Constellations. National Geographic Children's Books. 2009.