ALCOSS: K.1
Classify objects as solids and liquids.

Mastered:
Students can classify objects as solids and liquids.

Present:
Students will observe how to change a liquid to a solid by making ice cream in a bag. Students will create a how-to guide.

Going Forward:
Students will experiment with other liquids and solids to create new recipes for changing liquids to solids and solids to liquids.

Present and Going Forward Vocabulary:
Gas, heat, cool, change

Career Connections:
Chemist, Chef

Advanced Understanding & Activity (Alternate activity):

I CAN…

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. If time and resources allow, these students could teach the class, or other classes, how to make ice cream in a baggie, explaining how the ingredients change from liquid to solid.

K.1

1. Create a how-to guide for changing the state of matter of a liquid (ice cream recipe) to a solid (ice cream).
2. Create a cookbook of different ice cream flavors.
3. Create an interactive bulletin board about solids and liquids.

Ice cream in a baggie recipe
http://chemistry.about.com/cs/howtos/a/aa020404a.htm
http://crafts.kaboose.com/ice-cream-in-a-bag.html

Ice cream in a baggie video instructions
http://www.youtube.com/watch?v=pufDz2Ax5Z0&feature=relmfu
http://www.youtube.com/watch?v=jCUQUI6nWeo

Literature Connections/Resources:

- Garrett, Ginger. Solids, Liquids, and Gases. Danbury, CT; Children's Press. 2005.
- Gibbons, Gail. Ice Cream, The Full Scoop. New York, NY; Holiday House. 2008.
- Lindeen, Carol K. Solids, Liquids, and Gases. Mankato, MN: Capstone Press. 2008.
- Zoehfeld, Kathleen Weidner. What is the World Made Of? All About Solids, Liquids, and Gases. New York, NY: Collins. 1998.

ALCOSS: K.2
Identify the sun as Earth's source of light and heat.

Mastered:
Students can identify the sun as Earth's source of light and heat.

Present:
Students will create a timeline of changes in a shadow on a sunny day to show movement of the Earth over a 6-hour period using hourly photos.

Going Forward:
Students will create an original picture book about the sun.

Present and Going Forward Vocabulary:
Axis, position, length

Career Connections:
Solar Energy Engineer, Space Scientist

Advanced Understanding & Activity (Alternate activity):

Choose one or more of the following activities to complete as alternate activities to the general assignments.

K.2.1 - Kaplan's Depth/Complexity: Details

Students will read *Sun Up, Sun Down* by Gail Gibbons (factual book) about the sun to obtain facts about the sun and Earth's movement. Students will use the knowledge about the sun and Earth to create an original book using text and illustrations. Students will share what they learned with their peers.

K.2.2 - Take photos of a stationary object's shadow each hour from 8 a.m. to 2 p.m. on a sunny day. Create a timeline of the shadow's movement with the photographs. What stationary object did you choose and why? Explain why it changed in length and position each hour.

Literature Connections/Resources:

- Gibbons, Gail. Sun Up, Sun Down. Boston, MA: Sandpiper. 1987.

ALCOSS: K.3

Relate a variety of sounds to their sources, including weather, animal, and transportation sounds.

Mastered:

Students can relate a variety of sounds to their sources, including weather, animal, and transportation sounds.

Present:

Students will discover how we hear sounds and how we create music.

Going Forward:

Students will learn sign language as a means of communication.

Present and Going Forward Vocabulary:

Decibel, vibration, stethoscope, instrument, pitch, and sign language.

Career Connections:

Audiologist, Otolaryngologist, Speech and Language Pathologist, Biologist

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. Make a listening game of sounds in your school and home environment. Record both indoor and outdoor sounds. Play the tape for your classmates and friends to see if they can identify the sounds. Create a poem or song about the sounds you record.	2. Create a jigsaw puzzle of the human ear. Identify and label each of the parts and explain how each part works.	3. Make a stethoscope and listen to a friend's heartbeat. Explain how the stethoscope helps you hear the sound louder and clearer than you would without it.
4. Create a model of the human ear and an animal's ear. Compare and contrast the two ears. How do the size and shape of ears affect our hearing?	5. Create musical instruments and compose a song.	6. Create sign language motions to a well-known song such as *Happy Birthday*. Create a book or PowerPoint presentation of the words and motions and teach it to your classmates.
7. Create a decibel scale chart of loud and soft sounds. Investigate sounds that are so loud that they could damage our hearing. Make a safety book about sounds.	8. Create a play and props to show the path that sounds take as they enter the human ear.	9. Make a book to show how sounds travel. Compare how sounds move through air, solids, and liquids.

Literature Connections/Resources:

- Perkins, AL. The Ear Book. NY: Random House Books. 2007.
- Pfeffer, Wendy. Sounds All Around. NY: Collins. 1998.
- Taylor, Barbara. Hear! Hear!-The Science of Sound. NY: Random House Books. 1991.
- Heller, Lora. Sign Language for Kids: A Fun & Easy Guide to American Sign Language. NY: Sterling. 2004.

ALCOSS: K.4

Identify properties of motion, including change of position and change of speed.

Mastered:

Students can identify properties of motion, including change of position and change of speed.

Present:

Students will use prior experiences with motion to design ramp systems and experiments to expand their knowledge.

Going Forward:

Students will create an amusement park of ramps from recyclable materials for small, toy animals.

Present and Going Forward Vocabulary:

Friction, inertia, momentum

Career Connections:

Engineers, Automobile Designers, Amusement Park Designers, Rocket Scientists

Advanced Understanding & Activity (Alternate activity):

I Can…Create an amusement park of ramps from recyclable materials for small, toy animals. (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.

K.4

1. Make a ramp system that uses two different balls.
2. Make a ramp system that changes the speed of the ball from the beginning to the end.
3. Create an experiment with three different size balls.

Literature Connections/Resources:

- Royston, Angela. My World of Science: Heavy and Light. Mankato, MN: Heinemann Library. 2003.
- Graham, John. Forces and Motion (Hands-on Science). NY: Kingfisher. 2001.
- Brubaker-Bradley, Kimberly. Forces Make Things Move. NY: Collins. 2005.
- Mason, Adrienne. Move It!: Motion, Forces and You. Tonawanda NY: Kids Can Press. 2005.
- DiSpezio, Michale A. Awesome Experiments in Force and Motion. NY: Sterling. 2006.
- Murphy, Patricia J. Push and Pull. Chicago, IL: Children's Press. 2002.
- Branley, Dr. Franklyn M. Gravity Is a Mystery. NY: Collins. 2007.
- Welch, Catherine A. Forces and Motion: A Question and Answer Book. Mankato, MN: Capstone Press. 2007.

ALCOSS: K.5

Predict whether an object will be attracted by a magnet.

Mastered:

Students can predict whether an object will be attracted by a magnet.

Present:

Students will identify uses for magnets in their everyday environment at home, school, and in the community.

Going Forward:

Students will create a board game that uses magnets.

Present and Going Forward Vocabulary:
Magnetic field

Career Connections:
Engineers, Architects, Medical Technician, Physicist

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.

K.5
1. Create a book or poster about the many uses of magnets in my home, school, and community using photographs or drawings.
2. Explore magnetic pull by experimenting with different size magnets and the movement of a paperclip through other objects such as paper, cardboard, or wood.
3. Create works of art using old magnets.
4. Write a song or poem about magnets.
5. Create new and unusual uses for magnets. Draw and list the new ideas.
6. Create a board game that uses magnets.

Literature Connections/Resources:

- Krensky, Stephen. All About Magnets. NY: Scholastic Trade. 1994.
- Branley, Dr. Franklyn M. What Makes A Magnet? NY: Collins. 1996.
- Fowler, Allan. What Magnets Can Do. Chicago, IL: Children's Press. 1995.
- Rosinsky, Natalie. Magnets: Pulling Together, Pushing Apart. Mankato, MN: Picture Window Books. 2004.
- Schreiber, Anne. Magnets (All Aboard Science Reader). Grosset & Dunlap. 2003.
- Tocci, Salvatore. Experiments With Magnets (True Books: Science Experiments). Chicago, IL: Children's Press. 2002.

ALCOSS: K.6
Identify characteristics of animals, including behavior, size, and body coverings.

Mastered:
Students can identify characteristics of animals, including behavior, size, and body coverings.

Present:
Students will further explore animals and their characteristics through activities which include bookmaking , models, observations, etc.

Going Forward:
Students will explore the characteristics and needs of all living things.

Present and Going Forward Vocabulary:
Habitat, diversity, compare, contrast

Career Connections:
Biologist, Veterinarian, Zookeeper

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 new animal. Include details of your animal and why it has these characteristics.	2. Design a habitat for an animal of your choice. Draw your design and label the important parts. Draw your animal in your habitat. Make a model of your habitat and animal.	3. Choose an animal. Research the characteristics of the animal. Compare and contrast the differences and similarities between the parent and baby animal. Use a Venn diagram to record your findings.
4. Create a book of addition math story problems using adult and baby animals.	5. Create a book of subtraction math story problems using adult and baby animals.	6. Make an ABC book about animal habitats.
7. Choose an animal that lives in the zoo. Draw the animal and write or dictate a paragraph describing what his life is like in the zoo from his viewpoint.	8. Observe different animals on a zoo webcam. Choose an animal that you would like to observe and write a letter to the zoo explaining your reasons.	9. Research endangered animals of Alabama. Create a book or poster of the animals. Identify ways we could help these animals to survive.

Literature Connections/Resources:

- Butler, John. While You Were Sleeping. London: Orchard Books. 2002.
- Brenner, Barbara. If You Were an Ant. Englewood Cliffs, NJ: Silver Burdett Press. 1989.
- DK Publishing. First Animal Encyclopedia (DK First Reference Series). NY: DK Children. 2004.
- Hewitt, Sally. All Kinds of Habitats. London: Franklin Watts Ltd. 2001.
- Hughes, Catherine D. National Geographic Little Kids First Big Book of Animals . Des Moines, IA: National Geographic Children's Books. 2010.

ALCOSS: K.7

Classify objects using the five senses.

Mastered:

Students can classify objects by using the five senses according to color, shape, size, sound, taste, smell, texture, and temperature.

Present:

Students will identify smells, sights, tastes, textures, and sounds that are identified with each of the five senses using a "Think Fast" activity.

Going Forward:

Students will research human body parts associated with each of the five senses to include ears, eyes, nose, mouth, hands, and feet.

Present and Going Forward Vocabulary:

Texture, pitch, temperature

Career Connections:

Medical Doctor, Perfumer, Biologist, Scientist

Advanced Understanding & Activity (Alternate activity):

Think Fast

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 "S." How many of these can you complete?

S	Identify three things that you might hear in a big city.
E	Identify three foods that taste delicious.
N	Identify two things that feel sharp when you touch it with your finger.
S	Identify two smells that would alert you that there may be danger.
E	Identity two signs that you might see in a big office building.

Literature Connections/Resources:

- Hill Nettleton, Pamela. Look, Listen, Taste, Touch, and Smell: Learning About Your Five Senses Mankato, MN: Picture Window Books. 2006.
- Aliki. My Five Senses. NY: Collins. 1989.
- Miller, Margaret. My Five Senses NY: Aladdin. 1998.
- Ziefert, Harriet, and Haley, Amanda. You Can't Taste A Pickle With Your Ear. Maplewood, NJ: Blue Apple. 2002.
- Crews, Donald. Parade. NY: Greenwillow Books. 1986.
- Cole, Joanna. The Magic School Bus Explores the Senses. NY: Scholastic. 2001.

ALCOSS: K.8

Identify features of Earth as landmasses or bodies of water.

Mastered:

Students can identify features of Earth as landmasses or bodies of water.

Present:

Students will research and identify areas of land and water in their local, state, country, and/or world environments.

Going Forward:

Students will identify how environmental forces affect areas of land and water.

Present and Going Forward Vocabulary:

Volcanoes, satellite, environment

Career Connections:

Civil Engineer, Engineer, Architect

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 a mountain.	2. Print a satellite picture of your town or city. Label the parts and develop a legend.	3. Make an ABC book of landmasses and bodies of water in and around the United States.
4. Create a book that depicts different kinds of land-masses. Include plants and animals that live in each one.	5. Create a travel brochure of your state that features areas of land and water which tourists would want to visit.	6. Create a model of a volcano.
7. Create a book that shows different bodies of water. Include animals and plants that live in each one.	8. Create a shadow box of a land or water habitat.	9. Write a song or poem about a landmass or body of water.

Literature Connections/Resources:

- Lewis, J. Patrick. Earth and You: A Closer View: Nature's Features. Nevada City, CA: Dawn Publications. 2001.
- Trumbauer, Lisa. What Are Oceans? Mankato, MN: Capstone Press. 2006.
- Schuh, Mari C. What Are Volcanoes? Mankato, MN: Capstone Press. 2006.
- Trumbauer, Lisa. What Are Mountains? Mankato, MN: Capstone Press. 2006.
- Trumbauer, Lisa. What Are Forests? Mankato, MN: Capstone Press. 2006.
- Sweeney, Joan. Me On the Map. NY: Dragonfly Books . 1998.

ALCOSS: K.9

Identify seasons of the year

Mastered:

Students can identify the seasons of the year and seasonal changes in the weather.

Present:

Students will identify changes in plants and animals and the habits of people and animals. Students will compare and contrast seasons.

Going Forward:

Students will compare the seasons in the United States to a country south of the equator.

Present and Going Forward Vocabulary:

Rotation, orbit, tilted, compare, contrast, graph, diagram, equator

Career Connections:

Meteorologist, Climatologist

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. Make a cartoon strip showing seasonal changes in a plant or animal.
2. Create a coloring book of seasonal changes in weather, plants, animals, and people.
3. Keep a daily weather log for one month in each of the four seasons and create a weather graph to compare and contrast the weather in each season.

4. Write a poem about the seasons of the year and illustrate the poem.
5. Design a questionnaire to find out what is the most popular season of the year and why.
6. Make a collage of the four seasons that includes weather, clothing, animal habits, plants, and activities for each season.

Literature Connections/Resources:

- Gibbons, Gail. The Seasons of Arnold's Apple Tree. San Anselmo, CA :Sandpiper. 1988.
- Locker, Thomas. Sky Tree. NY: HaperCollins. 2001.
- Cerbus, Deborah. Changing Seasons Easy Reader. Westminster, CA: Teacher Created Resources. 2004.
- Plazzo-Craig, Janet. What Makes the Weather (Now I Know). Mahwah, NJ: Troll Communications. 1982.
- Greydanus, Rose. Changing Season (Now I Know). Mahwah, NJ: Troll Communications. 1983.
- Borden, Louise. Caps, Hats, Socks, and Mittens: A Book about the Four Seasons. NY: Scholastic Paperbacks. 1992.
- Lionni, Leo. A Busy Year. Philadelphia, PA: David McKay Company. 1995.

ALCOSS: K.10

Identify objects observed in the day sky with the unaided eye, including the sun, clouds, moon, and rainbows.

Mastered:

Students can identify objects observed in the day sky with the unaided eye, including the sun, clouds, moon, and rainbows.

Present:

Students will describe and identify the characteristics of things seen in the daytime and nighttime sky.

Going Forward:

Students will research optical illusions and create one. Determine how it affects your eye.

Present and Going Forward Vocabulary:

Optical illusion

Career Connections:

Astronomer, Meteorologist, Climatologist

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. Make a step book (Dinah Zike) of things you can see in the sky with the unaided eye.	2. Make a timeline of the phases of the moon.	3. Make a poetry book. Choose 5 things you can see in the sky and write and illustrate a poem about each one.
4. Pretend that you caught a ride on a rocket to the moon. Write a story that tells about what you saw on your trip.	5. Paint a mural to show what you can see with the unaided eye in the daytime. Prepare an oral report to describe each one.	6. Write and perform a play about what makes a rainbow.
7. Read the book *Zoo in the Sky: A Book of Animal Constellations* by Jacqueline Mitton. Create a new animal constellation. Illustrate the new constellation and give it a name.	8. Read a book about cloud formations such as *It Looked Like Spilt Milk* by Charles G. Shaw. Observe clouds in the daytime sky. Use a digital camera to create a photo essay of different cloud formations that you captured on film. Create a PowerPoint presentation. Ask students to tell what they see when they look at the pictures. Share what each cloud looked like to you.	9. Look at works of art that depict nighttime scenes such as "Starry Night" by Van Gogh. Create your own painting of a starry night. Include everything you see in the night time sky.

Literature Connections/Resources:

- Gibbons, Gail. Sun Up, Sun Down. Boston, MA: Sandpiper 2008.
- Branley, Dr. Franklyn M. The Sun: Our Nearest Stars. NY: Collins. 2002.
- Gibbons, Gail. Phases of the Moon. East Bridgewater, NJ: Holiday House . 1998.
- Mitton, Jacqueline. Zoo in the Sky: A Book of Animal Constellations. Des Moines, IA: National Geographic Children's Books. 2006.
- Florian, Douglas. Comets, Stars, the Moon, and Mars: Space Poems and Paintings. Orlando, FL: Harcourt Children's Books. 2007.
- Fowler, Allan. All the Colors of the Rainbow. Danbury, CT: Children's Press. 1999.
- Schwartz, Betty Ann. What Makes a Rainbow. Atlanta, GA: Piggy Toes Press. 2000.
- Landau, Elaine. The Moon (True Books). Danbury, CT: Children's Press. 2008.
- Day, John A. A Book of Clouds. NY: Sterling. 2005.
- Shaw, Charles G. It Looked Like Split Milk. NY: Harper Festival. 1992.