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| **Overview of First Grade Science** | |
| **Unit** | **Suggested Pacing** |
| Science Inquiry | 1-2 weeks |
| Force and Motion | 4-5weeks |
| Earth and the Universe | 3-4 weeks |
| Earth Systems, Structures and Processes | 3-4 weeks |
| Ecosystems | 4-5 weeks |
| Molecular Biology | 3-4 weeks |
| Review | 1-2 weeks |

**2012 Charlotte-Mecklenburg Schools**

**First Grade**

**S.E.R.G**

**(Science, Essentials, Resource, Guide)**

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| **STRAND: SCIENCE INQUIRY 1st Quarter** | | | |
| **Resources for Clarifying Objective:**  **This lesson is used as introduction to classroom routines in science, student expectations and an introduction to resources and vocabulary** | | | |
| **Essential Question** | **Criteria for Success: “I Will”** | **Suggested Resources/Activities** | **Writing Prompt** |
| How do scientists think when doing an experiment? | ‐I will demonstrate how scientists use observations and questioning strategies to explore scientific problems. | **Textbook:** A – 54: Scott Hotton The Plant Man – Patterns; F- 54 Geologist Ji Qiang How is a fossil like a piece of a puzzle; E – 54 Young Inventor Becky Schroeder Glo-sheet.  Activity Resources page 1 – 3136 - 137  **Activities: Inquiry and wonder -** Science is the investigation of how the world around you works, its, patterns and its oddities. The teacher support students’ natural curiosity by creating meaningful, hands on science experiences and by the development of questioning Strategies: What do you think scientists do? Answers may vary. The teacher should not say” right and move on”. The teacher will need to ask follow up questions such as… What kind of things do they look at? Why do you think they look at …? I am not sure What do you think?  **Resource**: Doing What Scientists Do: Children Learn to Investigate Their World by Ellen Doris 1991.  Ten-Minute Field Trips: A Teacher’s Guide to Using the School Grounds for Environmental Studies by Helen Ross Russell 1998.  Animals in the Classroom: Selection, Care and Observation by David C. Kramer 1989.  Lab Coats:  Use a pillowcase – cut out the head and the arms. Add marker to decorate with name a ideas about science. | Draw a picture of a scientist and tell what you think a scientist does. |
| **Helpful Websites;**   1. Discovery Education: “Scientific Method: Thinking like a Scientist” (15:00 min) http://player.discoveryeducation.com/index.cfm?guidAssetId=993284E0-2579-43E6-BD04-E9EAB00A2195&blnFromSearch=1&productcode=DSCE 2. [http://www.mrdisposable.com/product/LC5 - cost is 1.85](http://www.mrdisposable.com/product/LC5%20-%20cost%20is%201.85) for an open front | | | |

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| **STRAND: FORCE AND MOTION 1st Quarter** |
| **Essential Standard:**  **1.P.1** Understand how forces (pushes or pulls) affect the motion of an object. |
| **Clarifying Objective:**  1.P.1.1 Explain the importance of a push or pull to changing the motion of an object.  1.P.1.2 Explain how some forces (pushes and pulls) can be used to make things move without touching them, such as magnets.  1.P.1.3 Predict the effect of a given force on the motion of an object, including balanced forces. |
| **Unpacking: What does this standard mean that a student will know and be able to do?**  1.P.1.1  Students know a force is a push or pull. Students know a force, a push or a pull, can change the motion of an object in three ways: go faster, slower or change the direction of the motion. Students know a force (push or pull) is needed to start objects moving, keep objects moving or stop objects that are moving.  1.P.1.2  Students know magnets exert an unseen force that makes some things move without touching them. Students know magnets have poles that attract or repel each other.  1.P.1.3  Students know the size of the change in motion of an object is based on the amount of force applied to the object. Students know that balance is associated with position and weight. |
| **Essential Vocabulary: 1st Grade**  **Force, motion, balance, unbalanced, pole, attract, repel, unseen forces, push, pull, magnet, direction, gravity, friction** |

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| **STRAND: FORCE AND MOTION 1st Quarter** | | | | |
| **Resources for Clarifying Objective:**  1.P.1.1 Explain the importance of a push or pull to changing the motion of an object. | | | | |
| **Essential Question** | **Criteria for Success: “I Will”** | **Suggested Resources/Activities** | | **Writing Prompt** |
| 1. How can I demonstrate types of force using touch? | ‐I will model setting an object in motion by pushing and pulling objects. | **Textbook:**  Pg. F2- F9 Force and Motion: Things Move  **Activities:**   * 4-Door Vocabulary Book: Students will make a foldable book with 4 shutter doors. On the front they will write one vocabulary word on each door; Push, Pull, Force, and Position. On the inside the students will write the definition on the door and a picture of the definition on the other side. (*refer to page F3 for more details)* * Sing the Push and Pull song to the tune of Row, Row, Row your Boat (link #3) * Use cars, trucks or balls to model how to move an object by pushing or pulling * Use picture cards to have students identify a push or pull situation * Push or Pull interactive website (link below) * Give a bag of items and have student decide if it is best to push or pull each item and group them accordingly. * Discovery education: “Making Things Move” Fun-damentals * Discovery Ed. Reading passages: “Force and Dogs”, “Playground motion” * On the count of 3 have the students jump as high as they can. Discuss why do you think you always come down after you jump? After you have talked about it Read “I Fall Down.” There are short hands one lesson you can do throughout the story (select which ones you will do prior to reading it). After reading and doing the activities in the book take the students out to the playground. (Re-Read page 10 and 11). On the playground have the students sit where they can view all of the equipment. Select one student to go down the slide. What pulled them down the slide? Have another student throw a ball up (or in the basketball hoop) What pulled the ball back down? Have the students investigate other equipment that gravity plays a roll in. Evaluation: Have the students finish the sentence “Gravity pulls….” (Possible answer: Gravity pulls me down the slide.)   **Informational Text:**  I Fall Down by Vicki Cobb | | Cut out objects from magazines that can be pushed or pulled. Then sort on a venn diagram push,  pull and push, and pull objects.  Then have the students write about why each picture belongs in each group. |
| **Helpful Websites;**   1. http://www.bbc.co.uk/schools/scienceclips/ages/5\_6/pushes\_pulls.shtml 2. GO TO: www.discoveryeducation.com \*Elementary Science \* Force and Motion \*Intro to Force and Motion 3. Push and Pull Song Lyrics: http://www.cape.k12.mo.us/blanchard/hicks/news%20pages/scienceforcepoems.htm 4. Discovery Education – science Techbook for NC first grade | | | | |
| 2. How can I change the speed and direction of an object in motion? | ‐I will model changing the speed of an object by rolling it down ramps of different inclines.  ‐I will compare the speed of objects as they travel down ramps of equal and different angles of inclines(changing the incline of ramps).  ‐I will perform changing the direction of an object in motion by pushing or pulling it while it is moving. | **Activities:**   * Steeper, Steeper, Steeper- Changing inclines activity (link to lesson plan below Link #1) * Dance: Cha-cha Slide to start discussing direction. Describe the way things move by adding North, East, South, and West. Which ways to move weren’t mentioned in the song? Curve, zigzag etc. * Use the Steeper, steeper, steeper incline planes and then place a book at the end to change the speed and directions of the car. What happens when the book is placed 2ft, 4ft, and 6 feet away from the end of the ramp? Why? * Marble Drop: Create a marble track (lesson plan link #2 below) * Get a map of our school layout. Then draw a line map of how to get to the playground from your classroom. Then write step-by-step directions of how to get there.   **Informational Text:**   * Mama Zooms by Jane Cowen-Fletcher * Roll, Slope, slide: A book about ramps by Michael Dahl, * Rolling by Patricia Whitehouse. | | Writing Link: pg. F20: How Fast Do things move? Choose two things to write about (from the picture on page F20) How do they move? Which moves the slowest? The fastest? Write to compare their speeds. |
| **Helpful Websites;**   1. http://www.peepandthebigwideworld.com/resources/pdf/peep-event-ramps.pdf (lesson Idea: Steeper, steeper, steeper) 2. http://www.pbs.org/parents/creativity/challenge/marbledrop.html (Marble Drop: Create a Marble Track) 3. http://new.schoolnotes.com/files/lutherrh/Forces\_MotionLessonPlan.pdf 4. Discovery Education – science Techbook for NC first grade | | | | |
| 3. Can I show how to use forces to start, stop, and keep an object in motion? | ‐I will demonstrate pushing or pulling an object to move it.  ‐I will demonstrate stopping an object in motion by using force.  ‐I will keep an object in motion by pushing it after it is already moving. | **Activities:**   * The following Activity can be broken down over two or three days: * On the board or chart paper write "Motion stops because . . ." and draw a circle around it. Elicit students' responses and write their responses as "branches" off of the web. Focus student responses by providing prompts, such as: What would make a car stop? A dancer? A football? A plane? A baseball player sliding into home? Explain that these forces acting on objects and people are called friction. Refer back to the web and underline those ideas that clearly demonstrate the role that friction plays in stopping motion Explain to students that the amount or force of friction depends on two things: the type of surfaces that are touching (e.g., waxed kitchen floor versus rocky pavement) and the force pressing the surfaces together (e.g., pulling an empty wagon versus one filled with bricks) Then create two ramps one with a towel and one with a smooth surface. Have the students "Will the matchbox car move faster on the smooth surface or the rough surface?" Before students perform their race, have them complete the prediction portion of their activity sheets. Students should write one sentence indicating which surface they believe the car will travel faster on. Then have students test the two ramps and record their findings. Conclude the lesson with a class discussion and have the students write their conclusion on their prediction sheet of paper (Link #1) * Ask students: “How can we make the ball or toy car stop moving or change directions?”  1. Students make work alone or with a partner to complete this investigation. Have students use various objects such as a text book, block, air, another toy car to explore various ways to answer the question. Students record their findings in their science notebooks. Encourage students to illustrate or write their findings. (I placed a book in front of the toy car and it stopped. I made two cars travel toward each other and they both changed directions.)You may choose to ask the following questions to help those who are “stuck”:    1. What would happen if you placed an object in the path of the ball or toy car? (It changes directions or stops)    2. What else could be done to change the object’s direction or stop it?    3. Does the amount of force affect what happens to the object?   **Informational Text:**   1. Ann’s Wagon by Judy Nayer *(grade-level book: refer to page F1.B in Teacher Edition Chapter 11)* | | After Reading Ann’s Wagon: How do wheels help us travel or pull heavy loads?  Students will write a story about a world with no wheels. How would life be different if we didn’t have wheels?  After Activity have students write about the following question: If you push tow objects toward each other, what happens when they hit each other? |
| **Helpful Websites:**   1. http://www.discoveryeducation.com/teachers/free-lesson-plans/friction-in-our-lives.cfm 2. http://www.lakeshorelearning.com/media/product\_guides/DD354.pdf 3. Discovery Education – science Techbook for NC first grade | | | | |
| **Resources for Clarifying Objective:**  1.P.1.2 Explain how some forces (pushes and pulls) can be used to make things move without touching them | | | | |
| 4. Can I demonstrate how magnets repel and attract each other? | ‐I will locate the poles on a magnet.  ‐I will name the two poles on a magnet.  ‐I will demonstrate how a magnet can attract another magnet.  ‐I will demonstrate how a magnet can repel another magnet. | **Textbook:**  **1.** Pg. F26-F31 Things Magnets Move.  2.Pg. F32-F35 A Magnet’s Poles  **Activities**:   * Use bar magnets to show opposites repel * Mystery bags: place a magnet in a paper bag. Have one student describe it without saying what it is. Other students can ask questions. Then have the students in the group draw a picture of what was described. See if they can label the magnet correctly. (lesson plan link #1 below also PowerPoint Link #3) * Each student gets a magnet and a then one bag of items per group. Which of the following items do you think a magnet will stick to, and why? What will move to a magnet? Lesson on pg. F 27. * Where on the bar Magnet is the pull strongest? Pg. F33Explore Activity * Magnetic Classroom: Have the students take a magnet around the classroom or school and find objects that the magnet is attracted to or repels. Make a list of their observations. * Draw a picture chart. In one column draw pictures that magnets are not attracted to on the other page draw pictures that they are attracted to. Then write about the difference of the objects for each column.   **Informational Text:**  1.Brain Pop Magnets (link #2) | | Draw a picture of any type of magnet and items that are attracted to it. Then write about why this magnet attracts these objects. |
| **Helpful Websites:**   1. http://leadingthejourney.com/PDFs/magnetism.pdf (lesson 1: Unseen Forces: Lesson Plan) 2. http://mrhardy.wikispaces.com/Magnetism.swf 3. http://www.graves.k12.ky.us/powerpoints/elementary/symjchandler.ppt 4. Discovery Education – science Techbook for NC first grade | | | | |
| 5. How can I show the unseen force of magnets? | ‐I will move a magnet by using another magnet without them touching.  ‐I will use supporting details to explain the unseen force of magnets. | **Textbook:**  Pg. F36-F39 Things Magnets Pull Through  **Activities:**   * Can a magnet pull through things: Explore Activity pg. F37. * Activity Resource book pg.160 or in Teacher Edition on pg. F37Magnet Show * Use different types of magnets to move another magnet across the table (place a start and end line on the table) Can you cross the finish line without having the magnets touch? How did you do it? * Place a white sheet of paper in the bottom of a tin pan then sprinkle iron filings on the top of the paper. Have the students pick up the pan and place a bar magnet underneath. Students will see the magnetic field around the magnet. Draw in their science notebook what they see. Then have them place two magnets underneath the pan; first north and north facing each other, then north and south facing each other. In their science notebooks have the students draw pictures for each situation: one magnet, same pole magnets, opposite pole magnets. Then answer the following question in their notebooks: What happens to the magnetic field when you bring two magnets together? * Student created magnets, take a magnet and rub a paper clip. Then see how many other paper clips you can pick up. Why is this happening? How can you pick up more paper clips?   **Informational Text:**  *1. What Makes a Magnet?* by Franklin M. Branley | |  |
| 6 How does the amount of force applied to an object change its speed? | ‐I will increase the speed and lower the speed of an object by applying a force to the object. (Ex. Gently rolls a ball then kicks it to increase the speed). | **Activities:**   * Have students roll a ball to a line 4 feet away then have them push it to a line 8 feet away. How were you able to get the ball to the 8 foot line? What did you have to change between rolling the ball to the 4ft. line and the 8 ft. line? * Use cars roll it down the ramp using gravity only and mark how far it rolls. Then use the same car and place a weight on top of it and roll it down the same ramp again only using gravity to move it. How did the distance change and why? (more weight can slow it down) * Discovery education: “changing speed of motion” Exploration * Use the bucket balances to compare weights of different objects. | |  |
| **Helpful Websites:**   1. GO TO www.discoveryeducation.com \* Elementary Science \* Force and Motion \* Motion\* Changing the Speed of Motion\* Explore 2. http://www.coreknowledge.org/mimik/mimik\_uploads/lesson\_plans/762/MAGNETISM%20%20THE%20UNSEEN%20FORCE.pdf 3. Discovery Education – science Techbook for NC first grade | | | | |
| **Resources for Clarifying Objective:**  1.P.1.3 Predict the effect of a given force on the motion of an object, including balanced forces. | | | | |
| 7. How can I balance an object based on its weight and position? | ‐I will balance the weight of objects using a scale.  ‐I will change the position of a teeter‐totter in order to balance two different weights (Ex. Move a fulcrum under a lever). | | **Activities:**   * Read *Mirette on the High Wire*. Stop reading the story when Bellini, admits he is afraid. Discuss the difficulties the Great Bellini is having. What advice would you give him to help him with his fears?   What do you know about balance that could help him feel more comfortable on the high wire? Brainstorm ideas and have students word process a letter giving him advice on how to balance on the high wire.   * Ask students to stand by their desks. Have them lift up their left foot to one side and off the floor. Now, have them move the wall and place the side of their foot and their right shoulder against the wall. Tell them that they must keep their right foot and shoulder pressed against the wall. Invite them to try to lift their left foot just as they did a few minutes earlier. They will not be able to do it. Because they are against the wall they cannot adjust their bodies’ center of gravity. * Balance, Balance, Balance Activity: Each group member cuts out at least one unusual shape from the construction paper. (If there are less than six students in the group, decide which shapes should be duplicated to give a total of six shapes.)   Students will pull one piece of string through each straw. Attach the shape to one end of the string with tape. Attach the other end of the string to the clothes hanger. Students discuss and decide how the shapes and straws are to be arranged on the mobile so that it balances. Students draw a picture of the arrangement in their science notebooks. Encourage them to make any necessary modifications to balance their mobile. Provide an explanation of why or why it did not work. Remind students that the shapes, as well as the straws, should be balanced on the mobiles. (2009 NC DPI Lesson)   * Balancing on a High Wire: Have students cut out the balancing toy pattern. Have students place the paper clip anywhere on the pattern. Have students use their index finger and try and balance the figure.   Have students record their results in their science notebooks. Discuss what happens. (The figure will not be balanced.) What would happen if the paper clip was moved to another location? What would make the pattern balance? (Have students continue to move the paper clip around. If students do not discover that a second paper clip is needed, lead them to this discovery by reminding them of how difficult it was to balance on one leg.)   * Review with the class that a force is a push or a pull. Explain that forces act in pairs, and they can either be balanced or unbalanced. Discuss balanced and unbalanced forces as you complete the following: Index cards **•** *Small paper cup* **•** *Empty soda bottle* **•** *Water* **•** *Tissue paper.* **Directions**1. After moistening the tissue paper with water, use it to plug the hole in the top of the soda bottle. 2. Flip the cup upside down and place it over the top of the bottle. 3. Squeeze the bottle and tell students to watch what happens. What happened? Were the forces balanced or unbalanced? Explain that when you placed the cup on the bottle, the forces were balanced, so nothing moved. When you squeezed the bottle, the air inside the bottle suddenly had more force. The forces became unbalanced, causing the cup to move. After the experiment, make “balanced force” and “unbalanced force” vocabulary cards and discuss what they learned about these concepts. * Use the Fourth Grade Math Balances (in the math investigration kits for Algebra). Models for students how to make things balanced on each side of the beam.   **Informational Text:**   * + - *Mirette on the High Wire* by Emily Arnold McCully     - *Barnyard Bigtops* by Jill Kastner     - *High Wire Henry* by Mary Calhoun     - *The Napping House* by Audrey Woods |  |
| **Helpful Websites:**   1. http://www.dpi.state.nc.us/curriculum/science/units/elementary/ (GO TO: 1st Grade Balance and Motion: Scroll all the way to the bottom to get the high beam cutout) 2. Discovery Education – science Techbook for NC first grade | | | | |

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| **STRAND: EARTH IN THE UNIVERSE 2nd Quarter** |
| **Essential Standard:**  **1.E.1** Recognize the features and patterns of the earth/moon/sun system as observed from Earth. |
| **Clarifying Objective:**  1.E.1.1 Recognize differences in the features of the day and night sky and apparent movement of objects across the sky as observed from  Earth.  1.E.1.2 Recognize patterns of observable changes in the Moon’s appearance from day to day. |
| **Unpacking: What does this standard mean that a student will know and be able to do?**  1.E.1.1  Students know that objects in the sky have patterns of movement. Students know the sun is a star that can only be seen in the daytime, but the  moon can be seen sometimes at night and sometimes during the day. Students know there are more stars in the sky than anyone can count,  but they are not scattered evenly, and they are not all the same in brightness or color. Students know the sun, moon and stars all appear to  move slowly across the sky.  1.E.1.2  Students know the moon looks a little different every day but looks the same again about every four weeks. They know that the moon’s  observable changes follow a pattern. |
| **Essential Vocabulary: 1st Grade**  Pattern, star, moon, cluster, Earth, brightness, sun, scatter, appear, full moon, new moon, half moon, first quarter moon |

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| **STRAND: EARTH IN THE UNIVERSE 2nd Quarter** | | | |
| **Resources for Clarifying Objective:**  1.E.1.1 Recognize differences in the features of the day and night sky and apparent movement of objects across the sky as observed from | | | |
| **Essential Question** | **Criteria for Success: “I Will”** | **Suggested Resources/Activities** | **Writing Prompt** |
| 1. Can I explain how the objects in the sky move in a pattern? | ‐I will demonstrate how the earth moves around the sun. (Ex. Using a flashlight and a ball). | **Textbook:**   Unit C The Sky and Weather C16-C19  Imagine It! Unit: Our Neighborhood  Imagine It! Weather  Reading In Science pages 139- 143  Activity Resource page 66  **Activities:**   * Earth, Moon and Sun Virtual Lab (link #1) * Pick one student to act as the Earth and one to act as the Moon. Ask student how long it takes for the Earth to spin around—24 hours. Explain that the Moon rotates much slower—it takes a little more than 27 days for the Moon to rotate all the way around. Ask students, "Which spins faster, the Earth or the Moon?" Explain that the Moon rotates and orbits around the Earth at the same time. Ask the “Moon” how he or she should move. The Moon character will spin and revolve in a counterclockwise direction as seen from above (North is up). Reminder: This is not a race and the rate of speed is constant and steady. Ask the “Earth” how he or she should move. The Earth, like the Moon, is spinning counterclockwise as seen from above (North is up). Get your Earth and Moon characters moving in rotation/revolution. Finally, select a student to act as the Sun and have students move again—so that students can see the Sun, Earth, and Moon all moving together. (Link #2 for lesson plan reference) * Observe the movement of the sun by tracking it on a large piece of paper outside over the course of a day ie: morning, lunch, afternoon. Make it and extension homework to track it at dinner time and in the evening at sunset (similar to a sundial). | From the evidence that you have gathered, what is the purpose of the moon?  Based on the information you have learned, what would happen if there wasn’t a moon? |
| **Helpful Websites:**   1. http://www.sciencekids.co.nz/gamesactivities/earthsunmoon.html 2. http://www.eyeonthesky.org/lessonplans/08sun\_moonplayground.html 3. Discovery Education – science Techbook for NC first grade 4. www.brainpopjr.com/science/space/ | | | |
| 2. Why do the sun, moon and stars APPEAR to move? | ‐I will prove why/how the sun, moon, and stars appear to move. (Ex.The sun is seen during the day—where does it go at night? The moon is sometimes seen during the day and at night—does it go somewhere? The stars are only seen at night—where are they during the day?) | **Textbook:**   Unit C C2-C23  Reading in Science page 124, 126-128, 131, 132,138-140  **Activities:**   * Activity Resource page 81 * What makes day and night? Read “What Makes Day and Night by Franklyn Branley. Put students in small groups and allow them to draw their ideas about why we only see the sun during daylight hours. You may choose to let them make a myth or story, or try to come up with a scientific explanation. As a class, allow some students to share their ideas. Then introduce the concept that Earth rotates. Show students the globe, slowly rotating it counterclockwise. Once students see this rotation, give one student the flashlight and mention that the globe will model Earth and the flashlight will model the sun. Turn on the flashlights and off the classroom lights. Show that at any time, half of Earth receives light from the sun. That half experiences day. The other half does not receive light. That half experiences night. Ask students to tell which part of the globe is in day/night. Rotate the globe counterclockwise. Ask them several more times which part of the globe is experiencing day/night? When they seem to understand, ask students to turn the globe so that Florida (or their state) is experiencing morning/ noon/ evening/ night. Have students complete “Why do we have day and night?” worksheet. (Printouts available Link # 2) * Why Can’t we see stars during the day? Ask students if they see any stars during the day. Students may mention that some stars become visible before it is completely dark. Lead them to realize that our sun is a star. Ask students if any other stars are visible while the sun is visible. Have them discuss why not. Place the students in groups and give each group a flashlight. Explain to students that they will use the flashlights to model stars. They will observe the light from their “stars” under different conditions. Ask the students how they could model nighttime conditions, without sunlight. Take suggestions, then make the classroom as dark as possible. Have students turn on their flashlights and make three observations about the light (e.g. brightness, length of beam, width of beam). You may choose to have them record these observations. Ask students how they would model daytime conditions. If possible take students outside. If not, turn on all lights in the classroom. Have students turn on flashlights and make observations. Bring students back inside and collect flashlights. Have students report their findings. Ask again why stars (other than the sun) are not visible during the day. Lead them to understand that although the stars are always there, the light from the sun is much brighter (because the sun is closer, not because it is a brighter star). We simply can’t see the light from other stars during the day. (Link #2 lesson plan reference activity 4)   **Informational Text:**  1.What Makes Day and Night by Franklyn Branley | Given the research and investigations we have completed in class Explain why we have day and night?  Use at least one fact. |
| **Helpful Websites:**   1. http://www.eyeonthesky.org/lessonplans/08sun\_moonplayground.html 2. http://www.magnet.fsu.edu/education/teachers/curricula/documents/solarsystem/section1.pdf 3. Discovery Education – science Techbook for NC first grade   **Field Trip:** Visit a Planetarium or have one come to your school:  At School Programs:  1. http://www.discoveryplace.org/education/science\_reach/class/77/Starry-Starry-Night  2. http://www.discoveryplace.org/education/science\_reach/class/75/Solar-System-Spectacular-NEW  Off-Campus Programs:  1. http://www.schielemuseum.org/planetarium.php | | | |
| 3. Can I explain the amount, location, color, and brightness of stars? | ‐I will evaluate the number of stars in the sky.  ‐I will draw an example of stars in the sky (scattered/clustered).  ‐I will color the stars according to their various colors.  ‐I will explain how stars have different brightness levels. | **Textbook:**   Unit C C4 –C9  Reading in Science pages 129  **Activities:**   * Pre assessment: Have students can design and name their own star. Have them estimate how far away it is, how big it, how bright, what color is it and finally name their new star. (At the end of the unit there is another lesson involving a drawing of the night sky and you can compare to see if they have a better understanding of star shape, size and distance). (link #4 picture of the night sky) * Explain that stars come in all sizes but they are so far away that they look like tiny, beautiful, twinkling points of light. Explain that those tiny twinkling points of light are really GIGANTIC! Also, stars are different colors. The color of the star depends on how hot it is. Cool stars are red. Warmer stars are yellow-orange, hot stars are white and very hot stars are blue. You may want to make a class poster equating the color of a star with its temperature. Emphasize thatwe cannot feel the heat from the stars because they are so far away. Ask students if they believe that stars vanish in the daytime? After discussion, make them aware that stars shine all time. We do not see them during the day because the light from the sun is so bright that it is impossible to see the light coming from the stars. Ask the students to try the following experiment: On a clear evening, just as it starts to get dark, lie looking up into the sky. As it gets darker and darker, watch the stars seem to pop out one at a time. Actually, the stars have been there all the time and are just waiting for the light from the sun to fade. Suggest they count as many stars as they can see and when they can no longer count any higher, they can guess how many stars there might be.  State that stars do not twinkle. They only seem to twinkle when we look at them from the Earth. When stars are out in space they just glow steadily and do not move. They seem to twinkle because of the Earth's air. The twinkling begins when the light from the star hits the air, which is moving, and tosses the light around. Conclude the lesson by reading *Laura's Star*, an enchanting book for kindergartners. The story involves the comfort Laura gets from her star in the evening and her reaction to its disappearance as morning arrives. The discussion following the reading can emphasize that Laura's star really did not disappear; it simply could not be seen during the day because of the light from the sun. (Lesson reference link #3) * Can be a two day lesson: Students will estimate how many stars they thought there were in the sky. Explain that the most stars anyone is able to see with the naked eye is about 2,000 but there really are millions of stars. Explain to students that, in some ways, stars are a little like people. They are born, they grow up, they grow old, and eventually, they die. However, unlike people, stars can live for thousands of millions of years. Stars also come in all sizes just as people come in all sizes. Have students close their eyes and visualize your description of the beginning of the life of a star: Stars begin their lives in a swirling cloud of dust and gas (appearing like a dirty snowball). As these tiny pieces of gas and dust begin whirling together they pull in more and more gas and dust and the particles begin to cling together tighter and tighter. This is called gravity. The cloud begins to spin faster, making it become very hot in the center. The spinning/ whirling takes a very long time--billions of years! The cloud gets hotter and brighter until; finally, a new star is born. Introduce Vincent van Gogh's "A Starry Night" as an example of what a famous painter saw when he examined nature and the stars. Ask them if the pictures they formed in their minds looked anything like van Gogh's swirling stars. Provide students with black construction paper and red, orange, white, yellow, and blue chalk. Remind them that cooler stars are red; warmer stars yellow-orange, hot stars white and very hot stars blue. Have them draw their own version of "A Starry Night." It will be an interesting and informal assessment to note whether they use the traditional star shape or apply their new found knowledge of stars as swirling masses of gas and dust. Hang pictures next to the van Gogh print. Finally, read *Draw Me a Star*. Discuss how Carle draws his stars and the colors he uses. (Lesson reference link #3)   **Informational Text:**  *Laura's Star by* Klaus Baumgart  *Draw Me a Star* by Eric Carle  Vincent van Gogh's poster "A Starry Night" | Make up a star and explain why you chose the color, location, and brightness of the star. You must use one fact that you have learned. |
| **Helpful Websites:**   1. coolcosmos.ipac.caltech.edu/cosmic\_kids/AskKids/star**bright**.shtml 2. http://www.anchoragemuseum.org/images/downloads/ED\_Earth\_Moon\_Sun\_Guide.pdf 3. http://www.icsrc.org/ICSRC/TILT/starstuff/Kunit.html 4. http://www.proprofs.com/polls/upload/yuiupload/304411536.jpg 5. Discovery Education – science Techbook for NC first grade | | | |
| **Resources for Clarifying Objective:**  1.E.1.2 Recognize patterns of observable changes in the Moon’s appearance from day to day. | | | |
| 4. How can I describe the four week pattern of the moon (phases)? | ‐I will explain that the moon changes in a pattern about every four weeks.  ‐I will sequence pictures of the moon phases in order to show its pattern. | **Textbook:**   Unit C C10-C15  Reading in Science 136  **Activities:**   * Students will create moon journals to observe and record the changes of the moon for one month. (refer to link #5 for journal template) * Oreo Moon Phases: Students will use a paper plate and 4 Oreos to create the 4 major moon phases, new moon, full moon, 1st quarter and last quarter. (Link #3) * Students create sequence card and have the children match the correct picture with the word. (Flash cards are also in 3rd grade McMillan McGraw Hill science kits) * Moon Phase Memory: Students create two sets of moon phase cards and have them play with a partner to match the cards * Place students in groups of 4. Assign each student in the group a moon phase to draw and label on their paper plate. Then hole punch the paper plate and make a moon phase necklace with string/yarn. Then have the students go outside or in an open space in the classroom and play Moon phase”hot potato”. The teacher will call out moon phases and the students will toss the bean bag to the person wearing that moon phase (quick formative assessment). * Moon Phase pin wheel: (two printable pages on pg. 17 and 18 on link #7) * Use the web site http://www.puzzlemaker.com/ to create a moon vocabulary word search or have the students make their own word searches using this website.   **Informational Text:**  List of Picture Books and Informational Text on page 6-8 on Link #6 | Based on the information you have gathered, How often does the moon repeat the pattern and why?  Pretend you took a trip to the moon. Write a story about what you would experience and see during your month on the moon. Describe what it's like and tell what kinds of things you do when you get there. |
| **Helpful Websites:**  1. www.proteacher.org/c/489\_**moon**\_**phases**.htm  2. http://www.neok12.com/Moon.htm  3. http://www.leosciencelab.com/userimages/Oreo%20Moon%20Phases.pdf  4. http://analyzer.depaul.edu/paperplate/Oreo%20Moon%20Phases.htm  5. https://planetariumweb.madison.k12.wi.us/files/planetarium/observing\_the\_moon.pdf  6. https://www.stf.sk.ca/portal.jsp?Sy3uQUnbK9L2RmSZs02CjV/Lfyjbyjsxso+BULDHKb5U=F  7. http://www.images-press.com/\_files/letsDoIt\_moonbeams.pdf  8. Discovery Education – science Techbook for NC first grade | | | |

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| **STRAND: EARTH SYSTEMS, STRUCTURES and PROCESSES 3rd Quarter** |
| **Essential Standard:**  **1.E.2** Understand the physical properties of Earth materials that make them useful in different ways. |
| **Clarifying Objective:**  1.E.2.1 Summarize the physical properties of earth materials, including rocks, minerals, soils and water that make them useful in different  ways.  1.E.2.2 Compare the properties of soil samples from different places relating their capacity to retain water, nourish and support the growth of  certain plants. |
| **Unpacking: What does this standard mean that a student will know and be able to do?**  1.E.2.1  Students know earth materials include solid rocks, soil, and water, which all have different observable properties. Students know from prior  experiences that earth materials (matter) may be described by their physical properties (e.g., color, size, shape, weight, texture, flexibility, and  attraction to magnets, floating or sinking in water). Students know that earth materials that retain their shape regardless of the container they  occupy are classified as solids. Students know that water is an Earth material that takes the shape of the container it occupies and is classified  as a liquid. Students know that earth materials have different properties that sustain plant and animal life. Students know that some Earth  materials have properties that make them useful in solving human problems.  1.E.2.2  Students know that soils have different properties based on where they are located on the earth. Students know that some soils retain more  water, nutrients and provide better structural support than others and therefore enhance the growth and development of certain plants. |
| **Essential Vocabulary: 1st Grade**    **Minerals, soil, water, support, matter, nutrients, properties, rocks, solid, liquid, container, sand, silt, clay, humus, loam, ,pedologist.** |

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| **STRAND: EARTH SYSTEMS, STRUCTURES and PROCESSES 3rd Quarter** | | | |
| **Resources for Clarifying Objective:**  1.E.2.1 Summarize the physical properties of earth materials, including rocks, minerals, soils and water that make them useful in different  ways. | | | |
| **Essential Question** | **Criteria for Success: “I Will”** | **Suggested Resources/Activities** | **Writing Prompt** |
| 1. What are the different properties of rocks, minerals, soil, and water? | ‐I will discover through testing the observable properties for rocks, soil, and water. (Ex. Color, size, shape, weight, texture, flexibility, attraction to magnets, and float/sink). | **Textbook:** MacMillan McGraw Hill:   1. Science First Grade Unit D chapter 7 – Lesson 2 soil, 1 water, 3 water   **Activities:**   * **General Classification** Activity -United Streaming Video *Sorting and Grouping*. This video illustrates how students explore likes and differences to help them understand sorting and classifying objects. If you do not have access to this video, you may use pattern blocks to demonstrate sorting by size, color, shape and texture. Students bring in a leaf from home or the playground. Model how students observe their leaf and record data that describes their leaf in a Science Notebook. Explain to students that good scientists observe and record data. As a whole group activity, students place their leaves in a pile and give their description to a neighbor. The student reads their description to their neighbor and the neighbor tries to find the leaf. Students will soon discover that their descriptions need more detail and accuracy. Discuss what types of descriptive words are missing * **Specific Classification Activity** - Collect samples of clay, sand, and loam. Spread layer of glue on an index card, sprinkle with the soil sample, and make a 3-card collection for each discovery group. Prepare a few days ahead so that glue is sure to be dry. Set up discovery areas with butcher paper, magnifying glasses, craft sticks or tongue depressor, plastic spoons and three plastic cups of soil (clay, sand, loam). Provide each group with a sample card and one type of soil, students examine the soil. Students list characteristics of each type of soil, paying close attention to size of particles, color, shape, and hardness. Ask: How big are the particles of sand? Of clay? What shape are the particles found in humus? Are they all the same? Do all the sand particles look the same? Continue to ask these questions verbally while children answer in their notebook or provide student with a list of questions they are to answer and include in their notebook. Demonstrate how to scrape soil into a pile using a craft stick or tongue depressor. * Collect into white Styrofoam tray or paper plate. Set aside. Continue lesson with all three types of soil. Discuss their findings and list discoveries on chart paper. List each type of soil with specific findings. Refer to the definitions. Students will record their discoveries in their notebooks. * A triple Venn diagram could be used to record this information. * Complete this activity for types of rocks and on a later days and types of water * Giant Layered Book for Vocabulary- made of and how they are used – Earth Resources: Rocks, Minerals, Soil, Water   **Informational Text:**  1. If you Found a Rock by **Peggy Christian**  2. It Could Be a Rock by Allen Fowler 3. Soil by **Alice K. Flanagan****4. Soil by Adele D. Richardson** 5. Water by Frank Asch | Pick two rocks and compare them using their attributes/properties  Decide which rock you would use make a vase for flowers or build a house with and why. |
| **Helpful Websites:**   1. http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html - Find Earth Materials and the Teacher/ Parent Info sections 2. http://www.saltthesandbox.org/rocks/index.htm - Join nine-year-old Ethan and eight-year-old Aaron as they collect, wash, identify, store, and play with the rocks they've found. 3. http://www.sandcastlecentral.com/ - Tips for building sand castles 4. Discovery Education – science Techbook for NC first grade | | | |
| 2 Where are water, rocks, and minerals found on Earth?  2 Where water, rocks, and minerals are found on Earth? (continued) | ‐I will determine the origin/abundance and location on the earth of rocks, minerals and water. | **Textbook:**  Re-readMacMillan McGraw Hill:  Science First Grade Unit D chapter 7 – Lesson 2 soil, 1 water, 3 water emphasis on location of the earth resources and the abundance of them  Unit E pages NC E4 & NC E5 The Water Cycle  **Activities:**   * Bill Nye the Science Guy - Earth's Crust - Cupcake Core activity - Teacher preparation: bake cupcakes in 3 layers of colored batter (use yellow or white cake mix, divide into 3 bowls & put different colors of food coloring into each bowl) & then frosted, Foil baking cups and frosting will prevent the children from seeing the interior of the cupcakes in much the same way that a geologist can't see the interior of the earth collect clear straws, plastic knives, napkins. The lesson begins with the question: How do scientists know about deeper layers in the earth? What do you think the inside of the cupcake looks like? How might you get more information without peeling the foil or cutting it open? Demonstrate how to push the straw into the cupcake and pull out a sample. Flip the straw over and take another core sample. Have students take core samples and record their data. Finally, students cut open the cupcakes with a knife comparing them to their data. Keep relating what the children are doing to what real life geologists do. You tube has a video clip about taking core samples from ocean drilling – It is called Core on Deck!: The Journey of how samples …   **Informational Text:**  **1. Best Book Of Fossils, Rocks, And Minerals by Chris Pellant**  2. Planet Earth Inside out by Gail Gibbons  3. A Drop Around the World by [Barbara McKinney](http://www.amazon.com/s/ref=ntt_athr_dp_sr_1?_encoding=UTF8&sort=relevancerank&search-alias=books&ie=UTF8&field-author=Barbara%20McKinney)  **4. Clay by Mary Firestone**  **5. How to Dig a Hole to the Other Side of the World by Faith McNulty** | Write a Poem about the Earth’s soil, rocks, mineral and water. Describe how it feels, tastes, or sounds see page D33 of the Textbook for an example. |
| **Helpful Websites:**   1. <http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html> - Find Earth Materials and the Teacher/Parent Info sections   YouTube: Core on Deck! The journey of how samples travel from the rig floor to the core lab.   1. Bill Nye the Science Guy: Earth’s Crust 2. Magic School Bus – Inside the Earth 3. Discovery Education – science Techbook for NC first grade | | | |
| 3. How can I classify objects based on their properties? (Ex. Solids, liquids). | ‐I will write the properties of a solid. (Ex. keeps its shape)  ‐I will write the properties of a liquid. (Ex. takes the shape of its container) | **Textbook:** Assess what your students need and then use these lessons as a resource.MacMillan McGraw Hill Science First Grade Unit E Chapter9 Lessons 1 – 3 and Chapter 10 Lessons 6 & 7  **Reading in Science Resources:**   * MacMillan McGraw Hill Science First Grade Reading Resources worksheet pp240 – 242, 245, 248, 249, 255- 260.   **Activities-**   * What the Discovery Education video A first Look: Solids, Liquids and Gases. Pause the video and complete the experiments with the video. In the related Materials section there is a teacher’s guide.     **Informational Text:**  1. [What Is the World Made Of?](http://www.harpercollinschildrens.com/books/What-World-Made-/?isbn13=9780064451635&tctid=100) All About Solids, Liquids, and Gases by [*Kathleen Weidner Zoehfeld*](http://www.harpercollinschildrens.com/Kids/AuthorsAndIllustrators/ContributorDetail.aspx?CId=12951)*,*  **2. Drop of Water: A Book of Science and Wonder by Walter Wick**  **3. Everything Is Matter! By David Bauer** | Write a how to make a snowman – include the time when the solid – snow melts into the liquid water. |
| **Helpful Websites:**   1. Discovery Education Video - A First Look: Solids, Liquids, and Gases http://www.fossweb.com/modulesK-2/SolidsandLiquids/index.html 2. Change It and the Teacher/Parent Sections http://www.hhmi.org/coolscience/forkids/airjunk//index.html – Find out what kinds of solids are in the air we breath 3. Discovery Education – science Techbook for NC first grade | | | |

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| **Resources for Clarifying Objective:**  1.E.2.2 Compare the properties of soil samples from different places relating their capacity to retain water, nourish and support the growth of  certain plants. | | | | |
| 4. How can rocks and water support plant life? | ‐I will give examples of how water helps plants and animals live.  ‐I will illustrate how rocks support plant and animal life. | **Textbook:** MacMillan McGraw Hill Science First Grade Teachers book – Unit A Lesson 3 page A 23 Science Background section.    **Activities:**  Class discussion or take a School yard field trip   Informational Text:A Drop Around the World by [Barbara McKinney](http://www.amazon.com/s/ref=ntt_athr_dp_sr_1?_encoding=UTF8&sort=relevancerank&search-alias=books&ie=UTF8&field-author=Barbara%20McKinney)Soil by **Alice K. Flanagan****Soil by Adele D. Richardson** | Write a story about how soil helps a tree grow. | |
| **Helpful Websites:**   1. http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html - Find Earth Materials and the Teacher/ Parent Info section 2. Discovery Education – science Techbook for NC first grade | | | | |
| 5. How can Earth materials solve human problems? | ‐ I will defend how water helps solve human problems. (Ex. hydration, helps things grow, keeps the body clean)  ‐I will diagram how rocks help solve human problems. (Ex. shelter, sidewalks, roads, plant support, nutrients in the soil) | **Textbook:**   1. MacMillan McGraw Hill Science First Grade Unit D chapter 8 Lessons 6 & 7   **Activities:**   * Rocks are helpful for people Activity - Usesmall aluminum bread pans to make adobe bricks using various types of soil. Place bricks into a stacked formation where they can be affected by the weather. Observe over a period of at least a month the affects of weathering on the structures. Record observations. Instructions link #2   **Informational Text:**  1.Recycle: A Handbook For Kids by Gail Gibbons,  2.Where Does the Garbage Go?: Revised Edition (Let's-Read-and-Find-Out Science 2) by Paul Showers  3.I Can Save the Earth!: One Little Monster Learns to Reduce, Reuse, and Recycle (Little Green Books) by Alison Inches | Look At a picture that shows pollution on the earth and a picture of a place that is almost perfect or unspoiled by pollution. Write about which place they would like to visit and why. | |
| **Helpful Websites:**   1. http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html - Find Earth Materials and the Teacher/ Parent Info sections 2. http://www.solidearth.co.nz – how to make bricks 3. A poster showing many uses of rocks and minerals from North Carolina is available on line from the following: http://www.geology.enr.state.nc.us/proj\_earth/of00-144.pdf 4. Discovery Education – science Techbook for NC first grade | | | | |
| 6. How does the location of soil affect its properties? | ‐I will discuss the properties of various soils from different locations.  (Ex. soils: sand, clay, topsoil) | **Activities:**   * Students collect soil, sand and clay samples from the places that they visit throughout the year. Display them in the Science center. Document where they came from and then wonder about why they are the color that they are. * Read “Everybody Needs a Rock” Then go out on a scavenger hunt for each student to find a special rock (or you can assign it as homework) then when you come back in the students will work individually to describe the properties of their rock (size, color, texture, feel, smell, look like, shape where it may have come from (ocean, mountain, field etc). Then they will share their properties of their rock with their group or whole class. Extension you could have the students classify their groups rocks based on their properties. * Cut out pictures from magazines that show different soil landscapes. Talk about the coast, Piedmont and mountains of NC and how the location affects the type of soil.   **Informational Text:**  **1.How Mountains are Made by Kathleen Weidner Zoehfeld**  2.Everybody Needs a Rock by Byrd Baylor | Create an imaginary planet and describe the type of soil that you have placed on the planet and why it is there. | |
| **Helpful Websites:**  1.http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html - Find Earth Materials and the Teacher/ Parent Info sections  **2.** Discovery Education – science Techbook for NC first grade | | | | |
| 7. What are the properties of soil? | ‐I will interpret the properties of each soil type and determine the most appropriate soils necessary for plant growth and development.  (Ex. water retention, nutrients in the soil, structural support) | **Textbook:**  MacMillan McGraw Hill Science First Grade Unit D chapter 7 – Lesson 2    **Activities:**   * Label 3 clear cups: sand, clay, and humus. Students are to place about 2-3 tablespoons of each soil sample from previous day into the appropriate cup. Add about ½ cup water, and have students stir, let settle. * Students in group will orally discuss what they think will happen. Group will orally present their prediction to the whole class. Leave the samples for at least 15 minutes. Observe throughout the day. * Final Activity - Ask students to list from memory the items they found in the soil samples from previous lesson. Have students brainstorm edibles that could be used as symbols of these different components: sand (graham cracker crumbs), humus (Oreo crumbs), clay (vanilla wafer crumbs), sticks (pretzel sticks), worms (gummy worms or licorice), rocks or pebbles (yogurt covered raisins) Other things could be added like raisins, dried cranberries, chocolate chips, corn flakes, **:**  In order to reinforce the symbolism of the components of the snack, write the name of the food next to the name of the soil components on the class generated list. If additional items are available to eat that are not on the original list, brainstorm what actual components they might represent. As you are making these comparisons, refer to the properties of the soils; texture, color, particle size, etc. Have students discuss how their “snack” is like the soil they studied in previous lessons.   **Informational Text:**  **1.Dirt: The Scoop on Soil by Natalie M. Rosinsky**  **2.Earth Steps: A Rock’s Journey Through Time by Diane Nelson Spickert** | | Write a poem about the properties of soil – include: |
| **Helpful Websites:**   1. http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html - Find Earth Materials and the Teacher/ Parent Info sections 2. A detailed description of the rock cycle is available at (one of the following links)   a: http://geography.about.com/cs/physicalgeography1/a/rockcycle.htm.  b: http://soils.usda.gov/education/facts/soil.html,  c: http://www.bbc.co.uk/schools/gcsebitesize/chemistry/changestoearthandatmosphere/0rocksrev1.shtml   1. Discovery Education – science Techbook for NC first grade | | | | |

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| **STRAND: ECOSYSTEMS 4th Quarter** |
| **Essential Standard:**  **1.L.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.** |
| **Clarifying Objective:**  1.L.1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.  1.L.1.2 Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world.  1.L.1.3 Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there (e.g., reuse or recycle products to avoid littering). |
| **Unpacking: What does this standard mean that a student will know and be able to do?**  1.L.1.1  Students know that living things need food, water, air; a way to dispose of waste; and an environment in which they can live. Students know  animals eat plants or other animals for food and may also use plants (or even other animals) for shelter and nesting.  1.L.1.2  Students know people need water, food, air, waste removal and a particular range of temperatures in their environment, just as other animals  (and plants) do. Students know that living things are found almost everywhere in the world. In North Carolina, from the coast to the mountains,  students should observe how different environments support the needs of different organisms (crab/seashore, raccoon/piedmont,  elk/mountains). There are different kinds of organisms in different places.  1.L.1.3  Students know that humans depend on their natural and constructed environment and that humans can change the natural environment in  ways that are beneficial or detrimental to humans or other living things. Students know that it is beneficial for humans to participate in  activities that provide protection for the environment and/or improve the conditions of the environment for the growth of plants and animals  that live there. Students know many materials can be recycled and used again, sometimes in different forms. |
| **Essential Vocabulary: 1st Grade**  **Space, environment, reuse, waste, temperature, organisms, natural, air, water, light, food, shelter, protect, harmful, coast, improve, recycle, , litter, mountain,** |

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| **Resources for Clarifying Objective:**  1.L.1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment. | | | | | | | | | | | |
| **Essential Question** | | | **Criteria for Success: “I Will”** | | **Suggested Resources/Activities** | | | **Writing Prompt** | | | |
| 1 What do living things need to survive? | | | ‐I will give examples of what living things need to survive. (Ex. food, water, air, space and shelter). | | **Textbook:**  MMGH Textbook Pages: Units A and B   1. A20-25 Plants are Living Things 2. B4-9 Animals are Living Things   Reading in Science Resources:   1. Worksheets 2. Plants pages 23, 27,and 28 3. Animals pages: 69-71   Imagine It!   1. The Way We Grow Unit 2. Where do Animals Live     **Activities:**   * Take Yarn and make a circle outside. Have the students write in their journals all of the living and non living things inside of their circle. Then make a chart as a whole class. Talk about how the living things in the circle and use the non-living things to survive. * Sort and discuss characteristics of living and nonliving things online. (link #1 below) * Cut out pictures from magazines of living and nonliving things then have the students write about why things were put in the living and why they were put in the nonliving (making a connection that living need air water space, food and shelter). * Plant seeds and grow them in a variety of environments (i.e. outside, in a soda bottle to make a greenhouse effect, in the fridge, dark closet etc.). Chart each plant conditions growth then discuss why this has happened. * Animals Needs Stations: Give each child an animal card. Around the room set up different stations labeled air, food, shelter, water. Have each group of animal start at one of the stations. Every 1 minute students will rotate stations and pick up another survival card for their animal. (All students will pick up the same card for water and air. However, their food and shelter cards will differ based on their animal (i.e. dog-doghouse, cat-basket, pig-mud pile, cow-barn etc only choose 4-6 different animals). By the end each student should have the 5 basic needs of their animal. In their Science Notebook have them draw a picture of their animal. Then below their drawing write a sentence for each of their animals needs (ie. My dog needs a dog house for shelter.) At the end of the lesson the student can present their notebooks to the class or you can make a bulletin board of “Animals Needs.”   **Informational Text:**   1. A Tree is A Plant by Clyde Robert Bulla 2. A Weed Is a Flower : The Life of George Washington Carver By Aliki | | | Write a story explaining how animals  live and survive in their ecosystem by interacting with **living and nonliving** things. | | | |
| **Helpful Websites:**   1. http://www.firstschoolyears.com/science/resources/games/ourselves/living/living.htm 2. Discovery Education – science Techbook for NC first grade | | | | | | | | | | | |
| 2. How do plants, animals, and people depend on one another for food and sometimes shelter? | | | ‐I will sort pictures of animals (including people) that eat plants only, animals only, and both plants and animals.  ‐I will illustrate how some animals use plants as shelter.  ‐I will explain how some animals use other animals for shelter and or nesting. | | **Textbook:**   * B30-B37 How animals meet their needs.   **Activities:**   * How do Animals use plants as shelter? Research different animals indigenous to NC and how they use plants. (Norfolk Botanical Garden site below #1) * Students will read “A House for Hermit Crab by Eric Carle” Then they will discuss reasons why Hermit Crab needed to find a house. Discuss how birds need birdhouses to protect themselves from the weather and to give them a place to raise their young. (Explain that not every bird will build a nest in a birdhouse and that some birds make their homes in bushes, tree hollows, cactuses, etc.) Explain to students that when buildings replace forests and other natural areas, it causes the birds' natural habitat to disappear. Birdhouses can provide a nesting place for birds that have lost their habitat due to development. Tell students that some bird populations have actually increased because of people putting up birdhouses. Then make bird houses out of recycled materials. (Link # 2 for birdhouse instructions) * Have students cut shapes out of bread using cookie cutters or recycled jars or cans. Use a straw to poke a hole in the bread toward the top of the "cookie." Leave the "cookies" out in the air to dry. Turn them over several times during the day. After the "cookies" are dry, thread a piece of string or yarn through the hole in the "cookie" and tie the string in a knot. Have students spread the "cookies" with chunky peanut butter and sprinkle them with birdseed. \* You can use Crisco instead for Peanut Butter if you have students who are allergic to it.     **Informational Text:**   1. A House for Hermit Crab by Eric Carle | |  | | | | |
| **Helpful Websites:**   1. http://www.norfolkbotanicalgarden.org/education/online-resources/power-plants/plants-animals 2. <http://www.ehow.com/how_2042827_build-birdhouse-from-milk-carton.html> 3. Discovery Education – science Techbook for NC first grade | | | | | | | | | | | |
| **Resources for Objective:**  1.L.1.2  Students know people need water, food, air, waste removal and a particular range of temperatures in their environment, just as other animals  (and plants) do. Students know that living things are found almost everywhere in the world. In North Carolina, from the coast to the mountains,  students should observe how different environments support the needs of different organisms (crab/seashore, raccoon/piedmont,  elk/mountains). There are different kinds of organisms in different places. | | | | | | | | | | | |
| 3. Why do people, plants, and animals need a  particular range of temperature in their environment? | | | ‐I will sort pictures of plants, animals, and people into the appropriate and temperate environment (biomes: Grasslands, Rainforest, tundra, desert, forest). | | **Textbook:**  Activity Resource:   * Page 49 Animal Habitats   Reading in Science Resources:  Page 105-108 Where Animals Live  **Activities:**   * Create a “Matchbook” foldable that compare Plants that grow in cold places vs. plants that grow in hot places (or you can do a Venn diagram). * PowerPoint/ Research of the different biomes (Tundra, Rainforest, Desert, Forest, Grassland) (Use link #1 below). * Then have the students create a “Envelope Fold” of their biome. Triangle 1: picture of their biome inside flap describe this type of environment, Triangle 2 Pictures of Animals in that biome inside list the animals, Triangle 3 Picture of Plants in that environment inside list them. Triangle 4: How animals and plants live together inside: explain how animals and plant survive in this temperature (Do they have fur to keep them warm? Can they hold water for long periods of time? Etc.) *(foldable instructions are in Dinah Zike Big book of Science)*   **Informational Text:**  Leveled Readers from McMillan McGraw Hill  Our Busy Tree  In the Lake  Beavers Make Dams  McGraw Hill Leveled Readers: | | Humans do not typically live in extremely cold climates. Write a story about how people/ you could survive in the arctic for a long period of time? (What type of shelter would have to build? What type of adaptations would you need to make to your clothing? What types of food would you need to eat to keep your body warmer (more fatty foods?) | | | | |
| **Helpful Websites:**   1. http://www.vrml.k12.la.us/dcarroll/PowerPoint/Science/Habitats%20for%20Plants%20and%20Animals.ppt 2. Discovery Education – science Techbook for NC first grade | | | | | | | | | | | |
| 4. How are an organism’s needs supported by their environments? | | | ‐I will describe ways an environment supports the needs of its organisms. (Ex. crab/seashore, raccoon/piedmont, elk/mountains) | | **Textbook:**  Reading in Science:   * B38-B43 Where animals live.   Reading in Science Resources:   * Page 119: How animals meet their needs chapter vocabulary. * Page 96: Graphic Organizer   **Activities:**   * Students will use the template below to research and create an “Earths Natural Habitats” book. (see link #1 below) * Tundra- Polar bears fur and bubbler allow them to survive in a cold environment. Have the students use Blubber gloves and see how it protects their hand. Then have the student write about how a polar bear can live in the tundra. * Desert- Cactus Storing Water to Survive Activity: Materials: 2 sponges wax paper, 2 clear cups, toothpicks, Medicine cup to measure water, balance scale, weights. Instructions: Remove the toothpicks and clay from the "cactus" used in part B. Weigh each "cactus." Record the weights. Put 2 ounces (60 milliliters) of water in each plastic cup and add a sponge "cactus" to each cup. Set aside for one hour. Observe the results. Carefully remove each sponge and weigh it. Record the weights. How much weight did each sponge gain? Compare the weights. Set each sponge aside to dry. Cover the top of one with a piece of waxed paper. Check daily for several days. Weigh and record the weights. Note the differences in the weights. Which one dried out faster? How would a waxy covering help a desert plant? Local Connection: Do you live in a wet, dry, or moderate climate? Select some plants that are native to your area. What kind of adaptations do they exhibit that help them survive in your climate? * Rainforest: Watch “Forest Family Forever” (link #2 below). How many types of Rainforest are there? Where is each one located? How do plants an animal’s survive in those environments? Have students pick a rainforest animal. What unique features has it acquired for survival in the rainforest? Camouflage? Speed? Claws? What level on the food-chain is it on? Is it endangered? If so, why? Write a scientific report. (link #3 Rainforest animals) * Put rainforest fruits (banana, orange, and tomato) and non-rainforest fruits (apple, peach, grapes) each in separate glasses of water. How long does it take for them to decompose? Which ones decompose faster? Why? Since it rains a lot in the rainforest, what qualities help a fruit survive in all that water and humidity? * *Interactive Online Match the Animal to their Habitat Game (link #5)* * *Squirmy Fish: As a whole class they students will complete (Link #6) Interactive Survival Game. Then each group of 4 students will get one small fish tank with gravel, 2 or 3 shells, a water plant and one or two gold fish. They will observe the fish and record observations in their Science Notebooks. What living and nonliving things help the fish survive in this type of environment? What would happen if there was no light, or no plants, or no water?*   **Informational Text:**  Leveled Readers  What’s at the zoo?  Animals and Plants | | Pick your favorite animal or design a new one and tell how its needs are met in its environment. | | | | |
| **Helpful Websites:**   1. http://legacy.mckinneyisd.net/campuses/school\_websites/johnson/curriculumconnections/1st%20grade/Biome%20research%20project/biome%201st%20grade%20research%20booklet.pdf 2. http://rainforestheroes.com/teachers-and-families/forest-family-forever/ 3. http://edtech.kennesaw.edu/traci/animals/animals.htm 4. http://www.lessonpathways.com/Pathways/Detail/3228/animals-of-the-grasslands 5. http://www.iknowthat.com/com/L3?Area=Habitats 6. <http://sea.sheddaquarium.org/sea/squish/flash.html> 7. Discovery Education – science Techbook for NC first grade | | | | | | | | | | | |
| 5. Why do different organisms live in different places? | | | ‐I will match various organisms to the appropriate environment.  ‐I will write about animals that live in a common environment. (Ex. North Carolina: squirrels, raccoons, rabbits, deer, birds, snakes, fish) | | | **Textbook:**   1. Exploring North Carolina A1 2. Animals of the Outer Banks Unit A:Page NC-A2-A5 3. NC A6 NC Test prep (assessing their understanding of reading A2-A5)   **Activities:**   * Have the students look at the picture on page A1. Have them make observation about the land and the types of things they see. (Mountains, Farms, Water). Discuss the different landforms and animals that they see on this page so they can make connections to them later in the unit. Then view the Habitat PowerPoint (Link #3) * To give children an opportunity to observe small creatures close up, bring a see-through tank of snails into the classroom. The children will be able to see the underside of the snails through the tank. As a group or whole class session you can put the snails onto a piece of black paper and the children will be able to see their trails really clearly. If they will not come out of their shells place them in a shallow dish of water. The children can then do observational drawings and can write words to describe the snails. * Matching: Have the students match the animal with the correct environment in which they live in. * Take the children for a walk round the school and make a list of habitats such as flower bed, hedge bottom, plant trough, grassy patch, pond, tree, wooded area, under stone. Ask children to record in their science notebooks the habitats found and the organisms found in them. See if children can suggest reasons why the organisms are suited to their habitats. It is important for children to realize that some large organisms such as a tree are themselves habitats for other smaller organisms such as insects, birds and parasitic plants. * Clay Sculpting Animals: Students will be given a NC region (mountains, piedmont or costal) then they need to find out what animals are native to that region. After they have observed the animal life there they will work in groups and use clay (which is also a natural resource of NC) to sculpt the animals in their region. When they are done they will present what they have learned about the animals in their region and why these animals call this region home (what needs of theirs are met in that region?) Lesson Plan provided by Mint Museum (Link #1 and #2 below)   **Informational Text:**  Leveled Readers:  1. Habitats (electronic PDF link #4) | Which habitat would be the hardest for a human to live in? and Why? | | | | |
| **Helpful Websites:**   1. http://www.mintmuseum.org/craftingnc/08-menu-07-c.htm 2. http://www.ncforestry.org/WEBPAGES/FOREST%20MANAGEMENT/Ecology/index.htm 3. http://www.nebo.edu/misc/learning\_resources/ppt/6-12/habitats.ppt 4. <http://kstranberg.cmswiki.wikispaces.net/1st+Grade+Leveled+Readers> 5. Discovery Education – science Techbook for NC first grade | | | | | | | | | | | |
| **Resources for Clarifying Objective:**  1.L.1.3 Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there (e.g., reuse or recycle products to avoid littering). | | | | | | | | | | |
| **Learning Targets: Focus Questions** | | **Criteria for Success: “I Will”** | | **Suggested Resources/Activities** | | | | | | **Writing Prompt** |
| 6. How can I explain the difference between natural and man‐made  (constructed) objects in an environment? | | ‐I will compare man‐made versus natural objects.  ‐I will demonstrate ways humans can change the natural environment. (Ex. bridges, houses, tools, fire, landfills, oil spills)  ‐I will explain ways that humans change the environment in both helpful and destructive ways. (Ex. plant trees, destroy land with fire, animals lose homes when too much land is cleared for building, recycling) | | **McMilliam McGraw Hill Textbook:**  **Reading in Science Resources:**   1. P 182: Earth’s Resources 2. p. 215-216 Earth’s Resources 3. p. 211-212 Living Things Are Resources   **Reading Text:**   1. Rocks and Minerals D5-D9 2. Soil D10-D15 3. Water D16-D21 4. Air D22-D25 5. Living Things are Resources D26-D31   **Assessment Resource Book :**  P. 37-40  **Activities:**   * Students will create a Dinah Zike Giant Layered Book (example found on page D3) There is one alteration to the labels that they see in their book though. Rocks and Minerals should be one tab and then on the bottom under Air there should be a tab for Man-made. As students read through Chapter 7 they need to fill out each tab of the layered book. Man-Made will be filled out for each sections due to no reading lesson on man-made. * Sorting Activity: Begin by explaining to the students that they will be doing a sorting activity. As an example, tell students you will sort them according to one specific attribute (e.g. gender, shirt color, etc.). Ask the children if they can figure out how they have been sorted. Encourage students in each group to work together to sort their materials in any way they like. Suggest that students use a magnifier to observe the materials. Students will be given a baggie of materials. They will sort the materials into two groups: natural (in the form in materials occur in nature) or changed/designed/processed (materials transformed or combined with something else to make a product that does not occur naturally in nature). After sorting, have each group share one set of items (natural or changed) and explain why it thinks each item is natural or changed (designed)**.** Have students describe where the item might be found and if the item has been changed, how it might have been processed. Have each student draw a picture or write a paragraph about the item on his or her paper. (Lesson Plans found on Link #2) * BBC Rocks and Soil virtual Lab. | | | | | | A developer wants to build a new place that will create 1,000 new jobs but will cut down many animals’ homes. Write a letter to the builder telling him if you think what he is doing is a good thing or not and why. |
| **Helpful Websites:**   1. http://www.bbc.co.uk/schools/scienceclips/ages/7\_8/rocks\_soils.shtml 2. <http://www.bioedonline.org/k-5/pdfs/Resources_Natural_to_Manmade.pdf> 3. Discovery Education – science Techbook for NC first grade | | | | | | | | | | |
| 7 How can people help promote growth and protect the environment for different plants and animals? | ‐I will demonstrate activities that are beneficial to the environment. (Ex.  planting trees, recycling)  ‐I will identify activities that are harmful to the environment. (Ex. littering, wasting water, smoke) | | | **Textbook:**   Chapter 8 Taking Care of Earth   1. Lesson 6 Pollution: p. D26-31 2. Lesson 7 Caring for Earth’s Resources: p. D44-D49. 3. D50 Reading Link: A Trip to the Park   Reading in Science Resources:   * 1. Lesson Outline: Pg. 218-228   2. Interpret Illustrations pg. 223-230   3. Vocabulary and cloze test pg. 225-226, 231, 233   Assessment Resources Book   * 1. Chapter test pg. 41-44   **Activities:**   * Students can produce the Vocabulary Foldable for Pollution, Reuse, Recycle and Reduce on page D37in the teacher’s Edition book. * [**The Environauts Mission to Earth**](http://www.epa.gov/epawaste/education/kids/space/index.htm%20)**-** planet Ergon is filling up with trash and they need some help.....fast! Can you teach the people of Ergon to protect their environment? (Website #1 below) * Set four large paper bags in one area of the classroom, and label them “paper,” “plastic,” “metal,” and “trash.” Have groups of students work to glue pieces of crumpled paper onto the first bag, some plastic lids or bottles onto the second bag, some metal cans onto the third bag, and pieces of a black garbage bag onto the fourth bag. Then talk about things that they use at home and throw in the garbage that they could recycle. Have students bring in items from home (washed out) then as a whole class have the students sit in a circle with their items and place them in the correct bag. * Can Buildings Make You Sick Lesson: The students will observe and monitor the air quality around the school. They will create pollution catchers and place them around the outside of the school (one by the road, near the woods, parking lots etc) places where the students think there is a lot or a little pollution. (follow the lesson plan below link #2) \* You can also use a 4in.x4in. piece of cardboard with a wax paper taped to it with petroleum jelly wiped on that if you don’t have enough jars. (on page D39 in the textbook) * Read “Going for a Walk” then create a Save Our Parks: Foldable on Page D50 in Teacher edition book. How can people keep a park’s living things safe? How can people keep parks, land, air and water clean? Students make a picture book and tell and show how they can. * Cleaning up the Earth- take a walk around the school grounds picking up litter and things that pollute Earth.   **Informational Text:**  Macmilla/McGraw Hill Grade Level Science Books:   1. Going for a walk 2. Billy Fish 3. I CareAbout Earth 4. Lorax and Wump World by Dr. Seuss   Scott Foresman Leveled Readers:   1. Saving the Earth | | | | | Write a story about why we should or should not care for Earth’s Resources. Use at least three reasons to support why or why not. | |
| **Helpful Websites:**   1. http://www.epa.gov/epawaste/education/kids/space/welcome.htm 2. <http://www.pbs.org/wgbh/nova/teachers/activities/pdf/2217_building.pdf> 3. Discovery Education – science Techbook for NC first grade | | | | | | | | | | |

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| **STRAND: MOLECULAR BIOLOGY 4th Quarter** |
| **Essential Standard:**  **1.L.2** Summarize the needs of living organisms for energy and growth. |
| **Clarifying Objective:**  1.L.2.1 Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth.  1.L.2.2 Summarize the basic needs of a variety of different animals (including air, water, and food) for energy and growth. |
| **Unpacking: What does this standard mean that a student will know and be able to do?**  1. L.2.1  Students know plants are living things that need energy and grow. Students know plants need to take in water, nutrients and light (to make their own food) for energy and growth.  1. L.2.2  Students know animals are living things that grow and have basic needs for energy, air, and water. Animals depend on plants to provide them with energy directly or indirectly. Animals take in plants or other animals as an energy source. |
| **Essential Vocabulary: 1st grade**  **Energy**, **directly, indirectly**, living, animal, depend, basic needs**,** plants |

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| **Resources for Clarifying Objective:**  1.L.2.1 Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth. | | | |
| **Essential Question** | **Criteria for Success: “I Will”** | **Suggested Resources/Activities** | **Writing Prompt** |
| 1. What are the needs of various plants? Why are they important? -Non Vascular; moss, liverworts, Vascular Plants, Trees, Flowering Plants … | ‐I will infer the basic needs of various types of plants based on information that I gain from the experiments in this unit. | **Textbook:** MacMillan McGraw Hill Science First Grade   * 1. Chapter 2 Lesson 3 - 8 Plants Grow and Change   **Activities:**   * Have students go around the room looking small classroom objects. Ask the children how they would classify the objects and later why is it important to classify objects then lead into a discussion about plants and their classification. **Textbook -** MacMillan McGraw Hill Science First Grade Lesson 8 – Plants Grow and Change – Explore Activity or from the textbook Activity Resources p. 24 What Seeds Need To Grow. * Take a field trip to a nursery, botanical center, zoo or a veterinarian office * Make a Plants need Graphic Organizer save it and compare it to the Animals need graphic organizer.   **Informational Text:**   1. **How Does a Seed Grow?** By Helene J. Jordan 2. **Seed Go, Seed Grow** By Mark Weakland ; 3. Textbook Grade level Science books from the textbook adoption: Planting Seeds by Amy Jo (Basic) or Bit by Bit by Virginia Arnold (Challenge) 4. Tops and Bottoms by Janet Stevens | Compare a tree and a flower or an orange and an apple using science ideas.  The tree on our school playground will grow if … |
| **Helpful Websites:**   1. Discovery Education – Plants Have Needs A Segment of: [How Plants Grow](http://player.discoveryeducation.com/index.cfm?guidAssetId=41DE3285-F99A-4898-985A-6C4B55DF854F) 2. Discovery Education – Science Techbook for NC first grade | | | |
| 2. How do green plants make their own energy/food? | ‐I will examine how plants make their own food - a producer, Photosynthesis  Plant leaves are green because of chlorophyll  Plants need sunlight and water.  Plants use sunlight and water to make their food  Plants move the food they make throughout their parts | **Activities:**   * Experiment with growing plants – grow them with the same soil and water but limit water to one plant. Grow plants but limit light. Grow plants but limit air, grow plants one in a bag and one in soil. (Textbook Activity Resources PP7 – 24. * Experiment - **Concept:** The chlorophyll that makes plants green can be extracted for observation. **Prediction:** If chlorophyll is extracted from a leaf into alcohol, what color will it be? **Procedure:** Place a freshly picked leaf in the glass of alcohol. (Note: Dip the leaf in boiling water before placing it in the alcohol to speed up the process.) Set a timer and check the leaf every hour for several hours. Check it the next day.  **Observations:** Observe the leaf before, during, and after placing it in the alcohol. How does the leaf change? How does the alcohol change?   **Informational Text:**   1. Living Sunlight: How Plants Bring the Earth to Life by Molly Bang and Sallie Chisholm | Could Plants Grow on the moon? Use the discovery Education e book by the same name. |
| **Helpful Websites:**   1. SMART Exchange – Photosynthesis for kids – grade 1; The Sun – Who needs Light (interactive smart board activity) 2. http://www.commonsensepress.com/GSA-sample\_lesson/lesson\_plants.htm 3. Discovery Education – Elementary Science Interactive Vocabulary Photosynthesis Discovery Education - A Sweet Discovery: How a Plant Makes Food : Excerpt from Magic School Bus Gets Planted; 4. Discovery Education – science Techbook for NC first grade | | | |
| **Resources for Clarifying Objective:**  1.L.2.2 Summarize the basic needs of a variety of different animals (including air, water, and food) for energy and growth. | | | |
| 3. What are the basic needs of various animals and why are they important? | ‐ I will infer the basic needs of various types of animals. | **Textbook:**  MacMillan McGraw Hill Science First Grade Chapter 3:   1. Lessons 1 pg. B4-B9 2. Lesson 2: pg. B10-B13 3. Lesson 3 B14-B19   **Activities:**   * Have students watch the Animal Song (Link #1). Discuss what all living animals need to survive. * **Use** a class pet to begin the conversation about the basic needs of animals. ThenHave students go around the room looking small classroom objects. Ask the children how they would classify the objects and later why is it important to classify objects then lead into a discussion about animals and their classification.MacMillan McGraw Hill Science First Grade Reading in Science Resources p 71. Make a Animals need Graphic Organizer. * Animals needs interactive online activity (link #2 below)     **Informational Text:**   1. A Visiting Dog’s Story by Stephanie Calmenson. | What ways are a dog and a lion alike? |
| **Helpful Websites:**  1.Animals needs Song: http://www.youtube.com/watch?v=j2fRMhYP5n8  2.http://www.harcourtschool.com/activity/animalneeds/  3. Discovery Education – science Techbook for NC first grade | | | |
| 4. How do animals get energy for growth? Plants, other animals, and/or both? (S) | ‐I will recognize that plants provide animals with energy directly and or indirectly. Animals eat plants and/or animals as an energy source. | **Textbook:**  MacMillan McGraw Hill Science First Grade Chapter 4 Lesson 5 – How Animals meet their needs – Transparency 7: A food Chain.   1. B30-B37 How animals meet their needs.   **Activities:**   * Reading in Science Resources p96 Graphic organizer; Foldable by Diah Zike – Plants we can eat- Plants we cannot eat. Textbook p 33 - Make paper chain loops with the words: sun, plant, animal on them and loop them through each other. **:** Reading in Science Resources p 99. * Give students an opportunity to explore animal books and do their own “research” on whether or not all animals have the [same basic needs](http://olc.spsd.sk.ca/de/resources/sciencegr1/supportdocs/animalfacts.doc). * Create a food chain (website #1). Then discuss how animals need plants to survive. Also, food chain flash cards that students can use to match, carnivores, herbivores and omnivores (website #2) * Have students tape one picture each to their chests. Tell the students that they will make a food web. Have them stand in a circle and introduce themselves as the plant or animal they represent. The student with the sun picture should stand in the center. They should look around and ask themselves: Who in the circle could I give my energy to? (Who might eat me?)Who in the circle could give me energy? (Whom could I eat?) (Printouts at link #3 below) * Do “Make a Food Chain” Science Center Card #10. Students make a labeled chain using construction paper strips and glue.   **Informational Text:**  1. Food Chains and Food Webs (Let's-Read-and-Find-Out Science, Stage 2) by Patricicia Lauber ,  2. Pond Circle by Betsy Franco and Stefano Vitale  3. Sparrow Girl by Sara Pennypacker and Yoko Tanaka;  4. The Wolves are Back by Jean Craighead George and Wendell Minor | Retell the food chain of an Owl. Read textbook pages B34 and 35 as preparation. |
| **Helpful Websites:**   1. http://www.sheppardsoftware.com/content/animals/kidscorner/games/foodchaingame.htm 2. http://bogglesworldesl.com/foodchain\_flashcards.htm 3. http://forces.si.edu/main/pdf/2-5-WeavingTheWeb.pdf (pages 3-6) 4. Discovery Education – Elementary Science Animals 5. Discovery Education – science Techbook for NC first grade | | | |