



GYSTC Discover Georgia STEM Camp: Day Four

Title: Living and Non-Living Things

Presenter: Lynn Larsen



Purpose:	To identify living and non-living things in an outdoor nature setting.
Standard:	<p>SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.</p> <p>a. Construct an explanation based on observations to recognize the differences between organisms and nonliving objects.</p>
Materials:	Paper, Pencil, Markers or Crayons, Magazines (for cutting), Scissors, Tape or glue
Procedures:	<ol style="list-style-type: none"> 1. Take a walk around outside and look for things that are living and nonliving. 2. Take a piece of paper (8½ x 11 or larger) and fold in half. 3. On the outside, write “Living and Non-Living Things”. 4. On the inside left, write “Living Things”. On the inside right, write “Non-Living Things.” 5. Find a magazine. You may cut pictures out of the magazine and paste or tape them onto the correct side...living or non-living. 6. You may walk around outside, again, and draw pictures of living and non-living things or write the names of living and non-living things. 7. You may use the back on your paper to paste, write or draw items you are unsure about.
Science Behind It:	Students need to understand the difference in living and non-living things as related to how the world functions. All living things grow, reproduce and use nutrients. Nonliving things do none of those three things.
Questions to Ask:	<ol style="list-style-type: none"> 1. What are the characteristics of living things? 2. What are the characteristics of nonliving things?

Purpose:	Students should be able to identify the parts of a plant. They will be able to describe how different plant types have parts with unique characteristics.
Standard:	<p>SI1. Obtain, evaluate, and communicate information about the basic needs of plants and animals.</p> <p>a. Develop models to identify the parts of a plant—root, stem, leaf, and flower.</p>
Materials:	Chart paper, Marker for chart paper, Assorted seeds (each child will need a handful of various seeds), Several live plants of different appearances such as flower bearing, non-flower bearing, cactus, plants with multi-colored leaves, plants bearing single colored leaves, a large plant, and a small plant (As an alternate, you can provide pictures of various plants), Plastic zipper bags, Pencils, Crayons or colored pencils (optional), Drawing or plain white paper for each student
Procedures:	<p>The chart paper is to draw a large model of a flower. The model should include roots, stem, petals, seeds and leaves. Draw lines to identify each part but do not list.</p> <ol style="list-style-type: none"> 1. Look at the flower diagram on the chart paper. Name the parts of the plant you know. (Parts should include: roots, stem, seeds, leaves and petals. 2. Use the materials on the table to make a model of a plant. 3. You may use some seeds from the pollinator packs to represent the real seeds. <p>Have a zipper bag filled with twenty or more seeds (at least four different kinds) for each child.</p> <ol style="list-style-type: none"> 4. You are going to participate in a seed sort. I am passing out a baggie of objects. Take the things out of the baggie and sort as fast as you can. After a couple of minutes ask the students to stop. <p>Ask the following questions:</p> <ol style="list-style-type: none"> 5. What is in the bags? 6. What do you know about seeds? 7. Did all of these seeds come from the same plant? 8. Why do you think seeds are different?

<p>Procedures (Cont.):</p>	<p>9. Share this information about seeds: All of these seeds came from different plants. Seedlings are the beginning source of life for plants and trees. Every tree type and plant type has its own unique seed. If each of these seeds is planted, it will grow into a different type of plant. We are going to look at different plants and learn about their physical characteristics.</p> <p>Pass out the white paper. Have students draw and label a plant and identify the parts: roots, stem, seeds, leaves and petal.</p>
<p>Science Behind It:</p>	<p>What are the common physical characteristics shared by all plants? All plants are similar in that they have the same parts to help them grow, survive and function. All plants go through the same life cycle of growth. Plants all have roots that absorb water and nutrients. Their stems help them balance and carry their food to the other parts of the plant. Many plants have flowering parts or fruits that hold their seeds. These seeds are redistributed into the ground or soil for regrowth.</p> <p>What are the ways in which a plant’s physical characteristics can vary? The physical appearance of a plant can vary greatly. Plants appearance can change according to their root appearance, stem width, height, and color, leaf color as well as whether or not it is fruit bearing. These unique features contribute to scientists labeling parts by different names</p>
<p>Questions to Ask:</p>	<ol style="list-style-type: none"> 1. Can you name the parts of the plant? 2. What is the function of each part of the plant?



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Title: Life Cycles of Living Things – Butterflies

Presenter: Lynn Larsen



Purpose:	To determine the life cycle of a butterfly.
Standard:	<p>S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.</p> <p>a. Ask questions to determine the sequence of the life cycle of common animals in your area: a mammal such as a cat, dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.</p>
Materials:	Paper, Crayons, Paper plates (2), Paper fastener (brad), Scissors, Various pasta pieces (additional activity)
Procedures:	<ol style="list-style-type: none"> 1. Take a piece of paper and fold into fourths. 2. Starting on the top left, write eggs. In the top right box, write caterpillar; bottom right box, write chrysalis and on the bottom left, write butterfly. 3. Once you finish you will have the life cycle of the butterfly. 4. Think about other ways to show the life cycle of a butterfly. Take a walk outside and see if you see any of the stages of the life cycle. 5. Another way to demonstrate the life cycle of a butterfly is by using to paper plates. 6. Take two thin paper plates. 7. Fold in half. Fold in half again, so you will have 4 parts. 8. Carefully cut or punch a small hole in the center of the plates. 9. Take your paper fastener and press through the center of the plates. 10. 10. Cut one of the fourths out. Be careful to not cut all the way to the paper fastener. 11. Decorate the top plate with “Life Cycle of a Butterfly.” 12. In one quarter of the plate, draw a branch with some leaves. On the leaves, draw eggs. 13. In the next quarter of the plate, draw a branch with some leaves. On the leaves draw a caterpillar. You might want to draw him munching on the leaf. 14. In the third quarter, draw a branch with some leaves. Attach a chrysalis to a branch. 15. On the last quarter, draw a branch with leaves, flowers and a butterfly. 16. Think of other ways to demonstrate the life cycle of butterflies. 17. You can use pasta, paper, twigs, etc.

Science Behind It:	Life cycles of butterflies is also known as completing “metamorphosis”. The metamorphosis of a butterfly starts as an egg. Most eggs are laid on the underside of leaves. The eggs are in locations where they are harder to see. This helps prevent predators from destroying the eggs. The eggs will hatch in three days. A small caterpillar will hatch and begin to eat the leaves. After 10-14 days, the caterpillar will form a chrysalis. The chrysalis will hang from the branch for another 9-14 days and the butterfly will emerge.
Questions to Ask:	<ol style="list-style-type: none">1. How many stages in the life cycle of the butterfly?2. Why do we need to learn about life cycles?