

Learning Cycle Lesson Planning Form		
Science Topic/Content Area:	Grade Level:	Science Standards to be Addressed:
Living and Non-Living	K	Big Idea / Supporting Idea 14 <b>SC.K.L.14:</b> Organization and Development of Living Organisms
1. What concepts/big ideas do you intend students to learn?	<p><b>Science concept(s):</b> “By the end of this lesson, [students know the difference between living and non-living objects] by identifying the characteristics of both living and nonliving things” (website: <a href="http://www.pdesas.org/module/content/resources/20059/view.ashx">http://www.pdesas.org/module/content/resources/20059/view.ashx</a>).</p> <p><b>Idea(s) about the nature of science:</b></p> <ul style="list-style-type: none"> <li>• <b>Science Cannot Provide Complete Answers to All Questions:</b> Even though grouping living and nonliving things may sound simple to students, “it is sometimes difficult to decide whether something is truly alive or not” (Science Learning Hub: The University of Waikato, 2013). In order for students to understand what is objects are living and nonliving, students will use s guide to help determine the objects (the seven characteristics).</li> </ul>	
2. What do you expect students to understand about this concept and be able to do as a result?	<p>I expect students to understand that:</p> <ul style="list-style-type: none"> <li>• Everything can be classified as living or non-living.</li> <li>• Items both living and non-living can be classified by observing the seven characteristics: growth, sensitivity, reproduction, movement, respiration, excretion, and nutrition (Science Learning Hub: The University of Waikato, 2013). As a result, students will observe, classify, and arrange objects/organisms into groups of living and non-living things.</li> </ul>	
3. Why is it important for students to learn this concept? (Rationale)	<p>Students sometimes have difficulties categorizing things/organisms as living or nonliving. In some cases, students tend to describe anything that moves as alive. They also have trouble understanding the cycle of life, which causes them to classify anything dead as nonliving things. In this lesson, the term <i>living</i> will be explained as anything that is or has ever been alive (i.e. dog, flower, log, etc). For <i>nonliving</i>, the definition will be explained as anything that is not now nor has ever been alive (i.e. glass, wristwatch, blanket, etc). As the lesson is taught, students will begin to understand that all living things grow, breathe, reproduce, respond to stimuli, and have similar basic needs such as food and water.</p>	
4. Provide an overview/ explain what teachers should know about this topic. What misconceptions do students typically have about this concept? (Lesson Background Info)	<p>Living and non-living objects/organisms are categorized by key characteristics. For example, living objects/organisms need food, air, water, and reproduce (i.e. animals, plants, and humans). For non-living objects/organisms, they do not need food, air, water, or reproduce. Although many non-living items were once alive, students will want to classify those as non-living since they no longer need all the basic needs. One misconception that students may have about this content is that all seeds are not living, until they are given nutrients and energy. For students to understand that not all moving organisms are considered living (i.e. seeds), “a living thing can be appear dormant but is still considered “living.” Also, organisms that live can become non-living without certain things. On the other hand, objects like a rock are never living or non-living” (Georgia Department of Education, 2007).</p>	

<p>7. What specific activities might be useful for helping students develop an understanding of the concept in each phase of the Learning Cycle?</p>	<p><b>Engage:</b> Technology will be integrated: Students will observe pictures in the PowerPoint and compare living and nonliving objects, such as animals. (Website: <a href="http://rescu.rice.edu/scope/45/engage">http://rescu.rice.edu/scope/45/engage</a>).</p> <p><b>Exploration:</b> “Students will do an I-Spy game (7 minutes) to identify living and nonliving objects. Students will then explore to identify and record the living and nonliving objects they find” (website: <a href="http://rescu.rice.edu/scope/45/explore">http://rescu.rice.edu/scope/45/explore</a>). Students will be provided the worksheet to do their exploration.</p> <p><b>Explanation:</b> Students and I will have a discussion on what they learned about living and non-living objects. Before the students and I discuss the differences between living and nonliving, both terms will be explained so that the students understand the meaning of them. During the discussion, students will explain how they classified living and non-living objects.</p> <p>The following questions are listed below:</p> <ul style="list-style-type: none"> <li>• What are some examples of living things?</li> <li>• What are some examples of nonliving things?</li> <li>• How are living things alike?</li> <li>• How are living things different from each other?</li> <li>• What do all living things need to survive?</li> </ul> <p>With this question, I will be showing a PowerPoint that has pictures of animals and plants. Before students describe and explain each picture, I will “remind students that water and food are the things that animals and plants need to survive” (Website: <a href="http://ngexplorer.cengage.com/ngyoungexplorer/pdfs/teacher-guide-novemberdecember_12K.pdf">http://ngexplorer.cengage.com/ngyoungexplorer/pdfs/teacher-guide-novemberdecember_12K.pdf</a>). From this point on, I will ask students what each animal might eat and drink (go more in-depth with the lesson).</p> <ul style="list-style-type: none"> <li>• Can a living thing also be nonliving?</li> </ul> <p>After the discussion, students will make connections on what they learned and how they will apply their skills in the real-world:</p> <ul style="list-style-type: none"> <li>• If you find something new, and are unsure of whether it is living or nonliving, how might you find out which category it fits into? What will you have to find out?</li> <li>• What living and nonliving things do you have at home?</li> </ul> <p>(website: <a href="http://rescu.rice.edu/scope/45/question_prompts">http://rescu.rice.edu/scope/45/question_prompts</a>)</p> <p><b>Extension:</b> Students will observe the chart with all the characteristics of living and nonliving things across the top. The students will “choose different objects and go through each of the characteristics for each one. Then the students will determine whether each object is living or not.” After the students have this, students will then receive a worksheet that will require them to “choose one or more objects and answer the questions on the recording sheet” (Website: <a href="http://www.kindergartenkindergarten.com/2012/03/a-science-mini-unit-living-and-non-living.html">http://www.kindergartenkindergarten.com/2012/03/a-science-mini-unit-living-and-non-living.html</a>). Once students are finished, students will share and talk about one of the two pictures to the class.</p>
<p>8. In what ways would you assess students’ understanding or confusion about this</p>	<p><b>Formative Assessment:</b> before the lesson begins, students will receive a worksheet that has pictures of real-life living and non-living objects. Students will use their prior knowledge on what they know about living and non-living objects and will place an X on pictures are living objects. Once the students finish, we will go over the worksheet and have a discussion to clarify their level of understanding (i.e. “Why did you choose that response?” (website: <a href="http://seagrant.uaf.edu/marine-ed/curriculum/kindergarten/70/272-is-it-alive-teacher-">http://seagrant.uaf.edu/marine-ed/curriculum/kindergarten/70/272-is-it-alive-teacher-</a></p>

concept?	<p><a href="#">notes.html</a>)</p> <p>Worksheet: <a href="http://seagrants.uaf.edu/marine-ed/curriculum/images/stories/kindergarten/k_probe.pdf">http://seagrants.uaf.edu/marine-ed/curriculum/images/stories/kindergarten/k_probe.pdf</a></p> <p>Summative <b>Evaluation</b>:  Students will receive a paper that is “divided into two: one side is an object that is living and the other side one object that is non-living. Students will label their pictures with characteristics and explain their understanding to the teacher, who will write the students’ words down” (<a href="http://www.ctsciencecenter.org/documents/Inquiry_works/K.2_living_and_non_living_inquiry.pdf">http://www.ctsciencecenter.org/documents/Inquiry_works/K.2_living_and_non_living_inquiry.pdf</a>).</p>
9. What materials/ equipment are needed to teach the lesson?	<ul style="list-style-type: none"> <li>• Chart papers</li> <li>• Pictures of living and non-living objects</li> <li>• Computer for the 5 Es and PowerPoint</li> <li>• Worksheets</li> <li>• Students’ science notebooks</li> <li>• Paper divided into two</li> </ul>
10. References (Please list all resources consulted in developing this form)	<p><a href="http://lessonplansource.com/living-and-non-living-things-whats-alive/">http://lessonplansource.com/living-and-non-living-things-whats-alive/</a></p> <p><a href="http://www.pdesas.org/module/content/resources/20059/view.ashx">http://www.pdesas.org/module/content/resources/20059/view.ashx</a></p> <p><a href="http://www.sciencelearn.org.nz/Science-Stories/Earthworms/Characteristics-of-living-things">http://www.sciencelearn.org.nz/Science-Stories/Earthworms/Characteristics-of-living-things</a></p> <p>Georgia Department of Education, 2007. Living and Non-Living. Website:  <a href="https://www.georgiastandards.org/Frameworks/GSO%20Frameworks/KK%20Science%20Framework%20Living%20and%20Non-Living.pdf">https://www.georgiastandards.org/Frameworks/GSO%20Frameworks/KK%20Science%20Framework%20Living%20and%20Non-Living.pdf</a></p> <p><a href="http://rescu.rice.edu/scope/45">http://rescu.rice.edu/scope/45</a></p> <p><a href="http://seagrants.uaf.edu/marine-ed/curriculum/kindergarten/70/272-is-it-alive-teacher-notes.html">http://seagrants.uaf.edu/marine-ed/curriculum/kindergarten/70/272-is-it-alive-teacher-notes.html</a></p> <p><a href="http://ngexplorer.cengage.com/ngyoungexplorer/pdfs/teacher-guide-novemberdecember_12K.pdf">http://ngexplorer.cengage.com/ngyoungexplorer/pdfs/teacher-guide-novemberdecember_12K.pdf</a></p> <p><a href="http://www.kindergartenkindergarten.com/2012/03/a-science-mini-unit-living-and-non-living.html">http://www.kindergartenkindergarten.com/2012/03/a-science-mini-unit-living-and-non-living.html</a></p> <p><a href="http://www.ctsciencecenter.org/documents/Inquiry_works/K.2_living_and_non_living_inquiry.pdf">http://www.ctsciencecenter.org/documents/Inquiry_works/K.2_living_and_non_living_inquiry.pdf</a></p>

Object:		
Does it move?	yes	no
Does it grow and change?	yes	no
Does it breathe?	yes	no
Does it make more just like itself?	yes	no
Does it need food and water to live?	yes	no
Is it living? _____		











# Is it Alive?

Put an X through the things that are not alive.



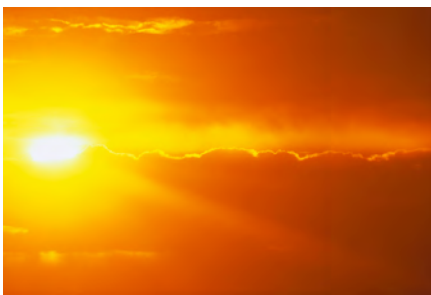
clock



whale



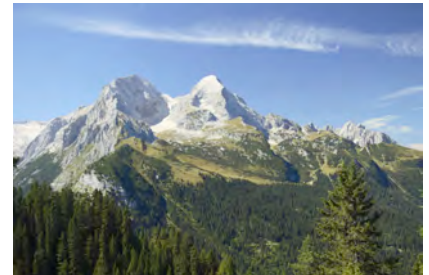
boat



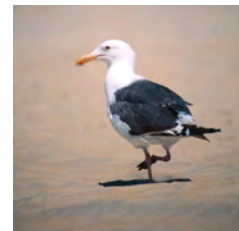
sun



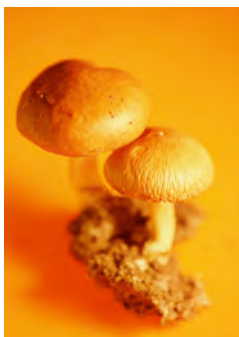
tree



mountain



bird



mushroom



fire



sea star

Explain your thinking. How did you decide what is alive and what is not alive?