

## Smith Farm Elementary Lesson Plan

<b>Teacher Name:</b> Edwards	<b>Grade Level:</b> 4th Grade	<b>Subject:</b> Science
<b>Date:</b> October 17-21	<b>Standards:</b> <b>4.L.1.1</b> Give examples of changes in an organism's environment that are beneficial to it and some that are harmful. <b>4.L.1.2</b> Explain how animals meet their needs by using behaviors in response to information received from the environment. <b>4.L.1.3</b> Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion). <b>4.L.1.4</b> Explain how differences among animals of the same population sometimes give individuals an advantage in surviving and reproducing in changing habitats.	

**We will alternate between Science and Social Studies this year. This is a science week.**

	<b>Monday, October 17</b>	
<b>Standards-aligned Materials and Resources:</b> (Textbooks, websites)	<ul style="list-style-type: none"> <li>• Animal Studies STC Kit</li> <li>• Chart Paper</li> <li>• Comparison Matrix (Comparing Animals)</li> </ul>	
<b>Clear Learning Goals (I Can statements):</b>	I can use my observation skills to describe fiddler crabs, African dwarf frogs, and millipedes.	
<b>Vocabulary</b>	compare, contrast, observation, structure, characteristic, appendages, sensory	
<b>Build Background</b>	<b>Turn and Talk:</b> Students will turn and talk to their table groups about the nonliving elements in our animals' habitats that can affect their lives. In other words, what is in their environment that can affect whether or not they survive?	
<b>Direct Instruction (Teacher led)</b>	<p>I will remind students that last week, we spent time observing the African Dwarf Frogs, Fiddler Crabs, and millipedes in our classroom. Today we are going to take what we have observed to compare and contrast these animals and their habitats.</p> <p>After the turn and talk, we will begin our activity for today. In order to compare our creatures, I will make a <b>comparison matrix</b> on a big piece of chart paper. On the left-hand side of the chart, I will write down the characteristics that we have been looking for with our animals (habitats, movement, food getting, body size/shape/color, and methods of protection).</p>	<b>Time:</b> <b>5 min.</b>

	<p>On the top of the paper, I will write down Frogs, Crabs, and Millipedes. An example of this chart can be found below the plans. Each student will be given a copy of this comparison matrix that they can write on.</p> <p>I will model for students how to fill in a few boxes in the chart based on the observations we did last week.</p>	
<b>Student Practice</b>	<p>After we have worked together to fill in a few boxes in our comparison matrix, students will fill the rest of it in with their table groups using the observations we've done.</p> <p>In their table groups, students should compare the notes they took while they observed the animals and use this information to fill in their charts.</p> <p>Afterwards, I will go through these categories with students and fill in the chart as a class. We will discuss the similarities and differences between each animal, as well as what each of these animals needs in order to be able to survive in our classroom environment.</p> <p><i>*Note to teachers: When talking about each animals' habitat, make sure students mention that the frogs live in the water, the crabs live on land and in the water, and the millipedes live on the land.</i></p>	<b>Time: 25 min.</b>
<b>Check for Understanding</b>	<p>Students will write a paragraph comparing and contrasting the three creatures we have been studying. In their paragraph, they can include information such as their appearance, what is included in their habitats, what they eat, what they need to survive, etc.</p>	<b>Time: 5 min.</b>

	<b>Tuesday, October 18</b>
<b>Standards-aligned Materials and Resources</b>	<ul style="list-style-type: none"> <li>• Animal Studies STC Kit</li> <li>• Flashlights</li> <li>• Scientific Method Sheet</li> </ul>
<b>Clear Learning Goals (I Can statements):</b>	I can write and share a hypothesis regarding how animals respond to changes and test my hypothesis through an experiment.
<b>Vocabulary</b>	experiment, hypothesis, scientific method, data, react
<b>Build Background</b>	<b>Turn and talk:</b> Based on what we observed last week, do you think the millipedes, crabs, and frogs prefer light or darkness? What makes you think this?

<p><b>Direct Instruction (Teacher led)</b></p>	<p>Today, in order to start wrapping up our animal studies investigation, we are going to be doing an investigation in which we answer the following question: How do the crabs, frogs, and millipedes react to a change in the light of their habitats?</p> <p>Before we begin the experiment, I will explain the steps of the <b>scientific method</b> to students and teach vocabulary like hypothesis, data, observations, and conclusion.</p>	<p><b>Time: 5 min.</b></p>
<p><b>Student Practice</b></p>	<p>Using the scientific method sheet, we will complete each part of the scientific method and fill in our observations from this experiment.</p> <p>We will start by filling in our <b>question</b>, which is: How do the crabs, frogs, and millipedes react to a change in the light of their habitats? Then, for the <b>hypothesis</b>, students will write what they think will happen when the light is changed in the habitats. For the frog, crab, and millipede, students will need to write whether they think each animal will move toward the light or move into the dark side of the habitat. As a class, we will then make a <b>plan</b> for how we can test this question.</p> <p>Next we will begin our investigation. In order to test the animals' reaction to light in their habitats, half of the habitat needs to be light and half the habitat needs to be dark. According to our STC kits, the best way to do this is to cover one half of the habitats with black construction paper while a flashlight is shined into the other half (from the top). While the students make their predictions, I will get the habitats set up so that the light can shine on them for 5-10 minutes before we begin observing.</p> <p>Students will then be given 10-15 minutes to walk around the room and <b>collect data/make observations</b>. They should travel around to each group of animals and make observations. As they do this, they should record their observations in the Data &amp; Observations section on our scientific method sheet.</p> <p>After students have had time to observe the animals, we will come together as a class to work on our <b>conclusion</b>. We will discuss with each other whether the animals seemed to prefer the light or the dark.</p>	<p><b>Time: 25 min.</b></p>
<p><b>Check for Understanding</b></p>	<p><b>Quick Write:</b> Did the animals we observed today prefer the light or the darkness? Was your hypothesis correct or incorrect? What do these animals' choices tell us about them?</p>	<p><b>Time: 5 min.</b></p>

	<b>Wednesday, October 19</b>	
<b>Standards-aligned Materials and Resources</b>	<ul style="list-style-type: none"> <li>• “Save the World” ReadWorks text &amp; questions</li> </ul>	
<b>Clear Learning Goals (I Can statements):</b>	I can explain how humans can change their behavior to live in a changing environment.	
<b>Vocabulary</b>	recycle, environmental, reuse, energy, donate, adaptations	
<b>Build Background</b>	<p><b>Turn and Talk:</b> What can people do in order to better protect our environment? How can we keep our own habitats and environment clean?</p> <p>Make a list as students are sharing their ideas.</p>	
<b>Direct Instruction (Teacher led)</b>	<p>Remind students that over the past few weeks, we have been learning about the various animals in our classroom and how they survive in our classroom. Today we are going to begin learning about <b>adaptations</b>, which are the changes an organism goes through in order to better survive in its environment.</p> <p>Our focus for today will be on human adaptations and how we can change to better live in our changing environment. Before we begin reading our ReadWorks article today, ask students to share what they know about recycling and discuss it as a class.</p>	<b>Time:</b> <b>5 min.</b>
<b>Student Practice</b>	<p>In their table groups, students will read the “Save the World” text on ReadWorks. This is a short text that explains small steps that people can take in order to better protect the planet.</p> <p>After students have read in their table groups, discuss it as a class. Make sure students understand the importance of taking steps to protect the planet, and why it is necessary.</p>	<b>Time:</b> <b>25 min.</b>
<b>Check for Understanding</b>	Students will complete the text questions on their own.	<b>Time:</b> <b>5 min.</b>

	<b>Thursday, October 20</b>	
<b>Standards-aligned Materials and Resources</b>	<ul style="list-style-type: none"> <li>• “Adaptation” text &amp; questions (Newsela)</li> </ul>	

<b>Clear Learning Goals (I Can statements):</b>	I can describe what animal adaptations are, as well as how they can help animals survive in a changing habitat.	
<b>Vocabulary</b>	adaptation, behavioral, structural, instinct	
<b>Build Background</b>	<b>Turn and Talk:</b> What sorts of things would help an animal survive in the arctic? What about the desert?	
<b>Direct Instruction (Teacher led)</b>	<p>Today we are going to begin learning about different animal adaptations and how they can help animals survive in changing habitats.</p> <p>In order to begin learning about adaptations today, we will read a Newsela article and complete an animal adaptation anchor chart as a class. On this anchor chart, we will go over the difference between structural and behavioral adaptations, as well as give examples of each. An example anchor chart can be found below the plans.</p> <p>We will complete this anchor chart as we are reading through the “Adaptation” article today.</p>	<b>Time: 5 min.</b>
<b>Student Practice</b>	As a class, read through the Newsela “Adaptation” article. Make sure students understand the difference between structural and behavioral adaptations, and how they can help animals survive in their habitats.	<b>Time: 25 min.</b>
<b>Check for Understanding</b>	Students will answer the text questions on their own.	<b>Time: 5 min.</b>

	<b>Friday, October 21</b>	
<b>Standards-aligned Materials and Resources</b>	<ul style="list-style-type: none"> <li>Create a Creature Adaptations Project (planning page)</li> </ul>	
<b>Clear Learning Goals (I Can statements):</b>	I can describe what animal adaptations are, as well as how they can help animals survive in a changing habitat.	
<b>Vocabulary</b>	adaptation, structural, behavioral, environment	
<b>Build Background</b>	<b>Quick Write:</b> What is an adaptation? Give an example of an adaptation that can help an animal survive.	

<b>Direct Instruction (Teacher led)</b>	<p>Yesterday we began learning about animal adaptations and how they can help animals survive in changing habitats. Today and next week, we will work on an adaptation project that will allow students to be creative and come up with their own animal and its adaptations.</p> <p>Before we begin, I will review the anchor chart we made yesterday on structural and behavioral adaptations. Then I will explain to students what their task will be for the creature adaptations project.</p>	<b>Time: 5 min.</b>
<b>Student Practice</b>	<p>Each student will be given a Create a Creature Planning Page. On this planning page, students will be creating their own animal, deciding on its habitat, and coming up with adaptations to help that animal survive. First, they will have to write down their creature's environment and name. Then they will come up with 3 adaptations that will help that animal survive in its habitat.</p> <p>Students will have to explain how the adaptations they choose will help their animal survive in its habitat. They will also draw a sketch of their animal and its habitat.</p>	<b>Time: 20 min.</b>
<b>Check for Understanding</b>	I will review each student's planning page once they finish. I will check to make sure their adaptations fit the habitats they chose and give them feedback before they start their final product next week.	<b>Time: 5 min.</b>

**Direct Instruction (Teacher led):** *Examples - Modeling, providing new vocabulary, questioning, anchor charts, scaffolding, chunking content, etc.*

**Student Practice:** *Examples - Small group w/ teacher, pairs, individual; graphic organizers, writing prompts, think-pair-share, student-led discussions, student summaries, pictorial notes, mini-projects, etc.*

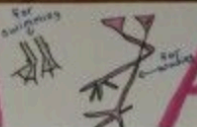
**Check for Understanding:** *Examples - ticket out the door, kahoot, white boards, four corners, turn and talk, thumbs up/down, parking lot/Windshield, summative assessment, project, performance, Pear Deck slides, Flipgrid, Padlet, etc.*

## Comparison Matrix Example

	Frogs	Crabs	Millipedes
Habitat			
Movement			
Food (what/how they eat)			
Body size, shape, color			
Methods of protection			

## Adaptation Anchor Chart

# Animal






# Adaptations

## Behavioral

- the way an animal behaves or acts
- what an animal does

**Purpose: Survival**


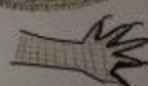
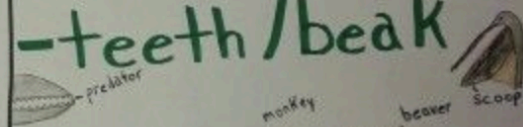


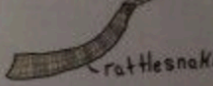

- migrating { { {
- web spinning 
- nest building 
- shoot/spray toxin 

\* These are also instincts

## Structural

- the way an animal looks
- what body parts (structures) or physical features it has

**Purpose: Survival**

- thorns/spines/quills 
- feet/claws 
- teeth/beak 
- tail   
- fur 
- camouflage
- sounds
- color
- mimicry