

Structure, Function & Survival

Unit Overview



DESIGN CHALLENGE:

How can we design an ideal habitat for an insect?

ANCHORING PHENOMENON:

A person gets scared, moves around, and shouts when a bug flies around him.

STORYLINE

In this unit, students consider the phenomenon of a person getting scared when they encounter a bug. What causes this bodily reaction to happen? To answer this question, students explore how different organisms use their body structures in order to sense, respond to their environment, and survive. The Crosscutting Concepts of Structure and Function, as well as Systems and System Models, are prominently featured in this unit. Students come to understand an organism as a system of structures that each have their own specific function. These structures work together in order to help the organism survive.

To begin, students review the components of a healthy habitat, how living things use the components of a habitat, and how different organisms are adapted to live in a particular environment.

Next, students dive deeper into the concept of adaptation, specifically thinking of adaptations in terms of external and internal structures. They then consider what is causing behaviors to occur (external and internal stimuli), and how internal and external structures work together to help an organism respond to the stimuli in order to survive. Students particularly focus on light, developing a model and using it to explain what happens to allow us to see so that we can respond to stimuli.

Finally, students use what they have learned in order to apply it to their own presentation that compares animal structures across animal classes, as well as design an ideal habitat for an insect in the design challenge. By the end of the unit, students will see that they are much more like a bug than they might have originally thought- bugs, humans, and all organisms have structures that allow them to sense and respond to their environment to survive.

OVERVIEW

Section 1 <i>How are animals and plants able to survive where they live?</i>	Section 2 <i>How does an organism's structure influence survival, growth, reproduction, and behavior?</i>	Section 3 <i>What are different ways animals use their senses and structures to help them receive and respond to information from the environment?</i>
<i>Total Time: 3 days</i> LESSON 1 How are animals and plants able to survive where they live?	<i>Total Time: 17 days</i> LESSON 2 What are external structures, and how do they differ among organisms? LESSON 3 What are internal structures, and how do they differ among organisms? LESSON 4 What are external and internal causes of an organism's behavior? LESSON 5 How do organisms' structures work together to help them? LESSON 6 How are we able to see objects?	<i>Total Time: 12 days</i> LESSON 7 How can we compare the way very different creatures sense and respond to information from their environment? LESSON 8 What are the structures of an insect, and how does it use them? LESSON 9 How can we design an ideal habitat for an insect?

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