



Desert Stories: Plant & Animal Adaptations 4th Grade Classroom Module

Program Summary

Desert Stories consists of three, hour-long lessons delivered by staff from the Asombro Institute for Science Education in your classroom.

Lesson 1 - Through interactive dress up play, students learn about the adaptations a kangaroo rat possesses that allow it to live in a desert environment. They complete a scientific investigation about heat transfer using model jackrabbit ears to understand how a large ears help a jackrabbit stay cool.

Lesson 2 - Students will complete short investigations on leaf size, root length, and presence versus absence of spines to better understand the function of common structures of desert plants. They will then apply their understanding of the function of these structures to an Ocotillo to explain how it survives in the desert.

Lesson 3 – Students will apply what they have learned about desert adaptations to animals from the book Nature is Yucky. Working in groups, students will determine how particular adaptations support survival and create a model of those adaptations.

Phenomenon

How do desert plant and animal adaptations help them survive in the desert?

Next Generation Science Standards

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Engaging In Argument From Evidence	LS1.A Structure and function	Systems And System Models
Developing And Using Models	PS3.B Conservation of energy and energy transfer	Energy And Matter
Planning And Carrying Out Investigations		



Common Core State Standards

- 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- 4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$.
Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
- 4.NF.C.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.
- RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- W.4.2.B Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- W.4.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.
- W.4.3.B Use dialogue and description to develop experiences and events or show the responses of characters to situations.
- W.4.3.D Use concrete words and phrases and sensory details to convey experiences and events precisely.
- SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners of grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
- SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- L.4.2.D Spell grade-appropriate words correctly, consulting references as needed.
- L.4.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- L.4.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.
- L.4.5.A Explain the meaning of simple similes and metaphors in context.
- L.4.5.C Demonstrate understanding of words by relating them to their opposites and to words with similar but not identical meanings.
- L.4.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).