DEFENSE *against the* BARK ARTS

CANOPY

Lesson Overview

4th GRADE

In-person: 80 mins.
Virtual: 45 mins.

Is it science or is it magic? In this lesson, students learn about the various animals, insects, bacteria, fungi, and pathogens that threaten trees' survival and how trees defend themselves against attacks using both mechanical and chemical protections. A matching game tests their understanding of different defense mechanisms as they choose from a selection of potential attackers given a photo and brief description of a tree's defense.

NGSS This lesson addresses the following 4th grade NGSS Specific Learning Outcome:

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

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Engaging in Argument from Evidence	LS1.A: Structure and Function	Systems and System Models

Post-lesson Activity

Reinforce students' understanding of the lesson material through an extension activity. Students will watch a TED Ed video about tree defenses and then conduct their own research to discover other defenses. Using what they have learned, students will draw and describe a tree with a defense mechanism best suited to a given set of parameters.

NGSS & Common Core This lesson addresses the following standards:

3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Constructing Explanations and Designing Solutions	Developing Possible Solutions	Influence of Science, Engineering, and Technology on Society and the Natural World

ART, 4.MA:Cr1. Conceive of original artistic goals for media artworks using a variety of generative methods, such as brainstorming and modeling.

READING, W.4.7. Conduct short research projects that build knowledge through investigation of different aspects of a topic.