

Investigate: Plant & Animal Adaptations (Grade 3-12)

Program Description:

During the *Investigate* program, students will take the role of Museum curators and use close observation and critical thinking to discover the origin, meaning, and importance of real objects from the Museum’s Collection. Students will learn how to handle and study primary sources and will be pushed to consider how individual objects or groups of objects can tell meaningful stories about our place.

What content standards align with this program?

NGSS Performance Expectations: LS1. From Molecules to Organisms: Structures and Processes, LS4. Biological Evolution: Unity and Diversity
NGSS Science and Engineering Practices: Constructing Explanations, Engaging in Argument from Evidence
Michigan K-12 Social Studies Standards: P1 Reading and Communication, P2 Inquiry Research and Analysis

Museum Program Strand:

Empower individuals to use observations and inquiry to understand arguments and design creative solutions.

This program is aligned with the following Museum Learner Outcomes:

Holders of Foundational Knowledge	Masters of Fundamental Literacies	Creative Thinkers and Doers	Generous Collaborators for Tough Problems	Learners For Life	
X	X			X	

What will students know and be able to do after completing this program?

- Learners will be able to analyze primary sources (specimen) and make inferences about them based on detailed observations.
- Learners will be able to describe what an adaptation is and be able to provide examples of adaptations specific animals and plants use to survive in their habitats.

What questions will students answer?

- What is a primary source?
- What is a specimen?
- What is an adaptation? What adaptations do animals and plants use to survive?
- How can we ‘read’ an object in order to learn from it?

Key Vocabulary

Specimen
 Primary Source
 Adaptation
 Observations
 Inferences

Materials List and Setup:

- Corresponding specimen kit
- Gloves
- Investigation handouts
- Reflection sheet
- Whiteboard and expo markers

Program Activities: 60 minutes

- Engage
 - Informally assess student prior knowledge of key terms: specimen, adaptation.
 - How do we learn from objects? Observations to inferences
 - Model how to 'read an artifact' with whole class
 - Introduce essential question for artifact investigation: What is an adaptation, and what are some examples of adaptations specific animals and plants use to survive in their habitats?
- Explore
 - Protocol for handling specimen
 - Students rotate through stations, making observations, taking sketches, recording data about adaptations. Investigation handout will guide students as they work through.
- Explain
 - Discussion: Ask students what they discovered. What are key components animals and plants need to survive in their habitats? *eat/find food, protect themselves, grow, find mates, have offspring (children), etc.*
 - Groups will generate lists of the major takeaways we learned about the essential question from the artifact investigation. Instructor will record these on the board
- Elaborate
 - Adaptation Challenge! Students will create a super-organism and describe its beneficial adaptations, focusing on how their organism gets food and how it protects itself.
- Evaluate
 - Think/Pair/Share activity in groups