Amazing Adaptation

High School

Duration
Activity: 40 minutes

Post-Activity: 20 minutes

Supplies
- Worksheet
- Pencil

Standards
NGSS

HS-LS4

S+E Practices

4, 6, 7, 8

CCSS ELA

WHST.9

CA State

Evolution 8.a.e

Investigation and Experimentation 1.d

Vocabulary
Adaptation · Natural Selection · Evolution · Selection Pressure · Artificial Selection · Observation · Inference · Hypothesis · Habitat

Student Work

Concepts

- Scientists infer how ancient animals survived using observational evidence from fossils.
- Pressures from the environment drive adaptation and evolution
- Evolution by natural selection determines the differential survival of organisms.

Objectives

- Students will observe a specimens and articulate its adaptations.
- Students will make inferences about how that animal survived.
- Students will hypothesize what the specimen's habitat was like and support their ideas with evidence.
- Students will consider the impact of environmental changes on the survival of the specimen.

Outline

1. This lesson assumes that students know what adaptations are and how they relate to evolution. If necessary, introduce the idea of evolution by natural selection if it has not already been explored before the activity.

2. Have students explore images in the attached packet of the Dinosaur Hall, then focus on a single specimen to complete the Adaptations worksheet.

3. Complete the last worksheet that expands on the environment and natural selection. Break students into groups that observed the same or similar specimens and ask them share their ideas/ responses with each other. During both portions of this reflection, challenge students to verbally articulate what they saw or read that made them come to a particular conclusion.

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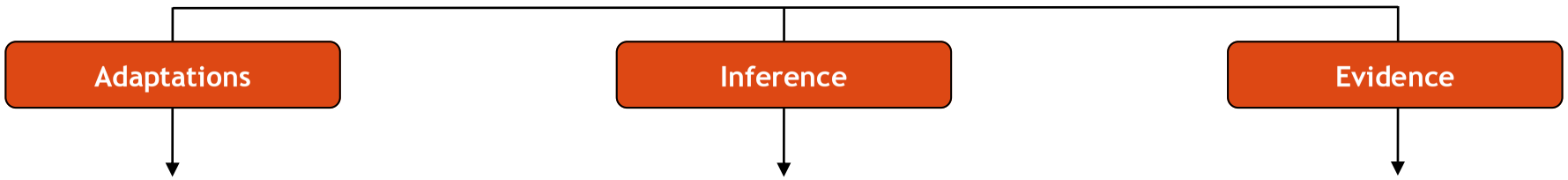
Adaptations as Evidence

Adaptations tell us about how an animal used to live. Choose a specimen to do more research on and write its name at the top of the Tree Map. Using your own observations and available information online, complete the Tree Map. First, note adaptations, then infer what those might mean for the life of the animal. Back up your inferences using observable evidence, i.e. what do you see that makes you say that?



Environment and Natural Selection

Many generations of natural selection has resulted in the adaptations you observed on this specimen. With this in mind, answer the following questions. Use additional paper if necessary.

1. Based on your observations of these dinosaur specimens, what might the habitat of this animal have been like?

2. What might be some selection pressures from the environment that drove the natural selection and subsequent evolution of this specimen? Use observable adaptations as support for your ideas.

3. Imagine your specimen living in the city of Los Angeles, would it survive today? Why or why not?

4. If you could breed your specimen and artificially select for traits so that future generations would be successful in the Los Angeles city habitat, what might those traits include? Articulate how traits would support your specimen's survival.