



Science Learning Packet

Grade 8:

Evolutionary History, Lesson 9

science learning activities for SPS students during the COVID-19 school closure.

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Due to the COVID-19 closure, teachers were asked to provide packets of home activities. This is not intended to take the place of regular classroom instruction but will help supplement student learning and provide opportunities for student learning while they are absent from school. Assignments are not required or graded. Because of the unprecedented nature of this health crisis and the District's swift closure, some home activities may not be accessible.

If you have difficulty accessing the material or have any questions, please contact your student's teacher.



Grade 8 Science

Evolutionary History Unit Lesson 9

Instructional Materials for Amplify Chapter 2, Lesson 2.5

AmplifyScience



If you have access to an internet device at home, you can also watch the accompanying lesson video at <https://youtu.be/zEKNJSGNsFM>

Student Name: _____

School: _____

Grade Level: _____

Science Teacher: _____

Hello Families,

We hope you and your family are well and safe during this time. During this unprecedented out-of-school time, the SPS middle school science team will be offering instructional opportunities for students that align with the district's adopted middle school science instructional materials.

This investigation packet is part of a series of district-aligned lessons for middle school **science developed by AmplifyScience** and adopted by SPS in 2019. While Amplify Science lessons are designed to be done in the classroom with peers, there are some activities that students can complete at home. In this packet you will find activities to accompany lessons in the unit. **Accompanying lesson videos are posted on the [SPS Science webpage](#) under their corresponding grade level.** These lesson videos, developed in collaboration between SPS teachers, Denver Public Schools teachers, and Amplify Science, feature teachers going through the information in the lessons. **The work in this packet is intended to be completed alongside the viewing of the video of the corresponding videos. To find the correct lesson videos go to [SPS Science webpage](#), scroll to your grade level, find the unit you are looking for, and select the video that matches the lesson you are completing that day.**

For students who have access to the internet and the following devices and browsers **may wish to log-in to their AmplifyScience account from home are welcome to do so.** Chrome and Safari are the recommended browsers to use for full functionality of the Amplify digital tools and features.

Sincerely,

The Seattle Public Schools Science Department



Unit Question: Why do species, both living and extinct, share similarities and have differences?

Chapter 2: Investigating Body Structure Differences

Warm-Up

1. Write a number (1–4) next to each of the events below to indicate the correct order.

_____ Two descendant populations are very similar but have small differences in their structures.

_____ An ancestor population is living in a stable environment.

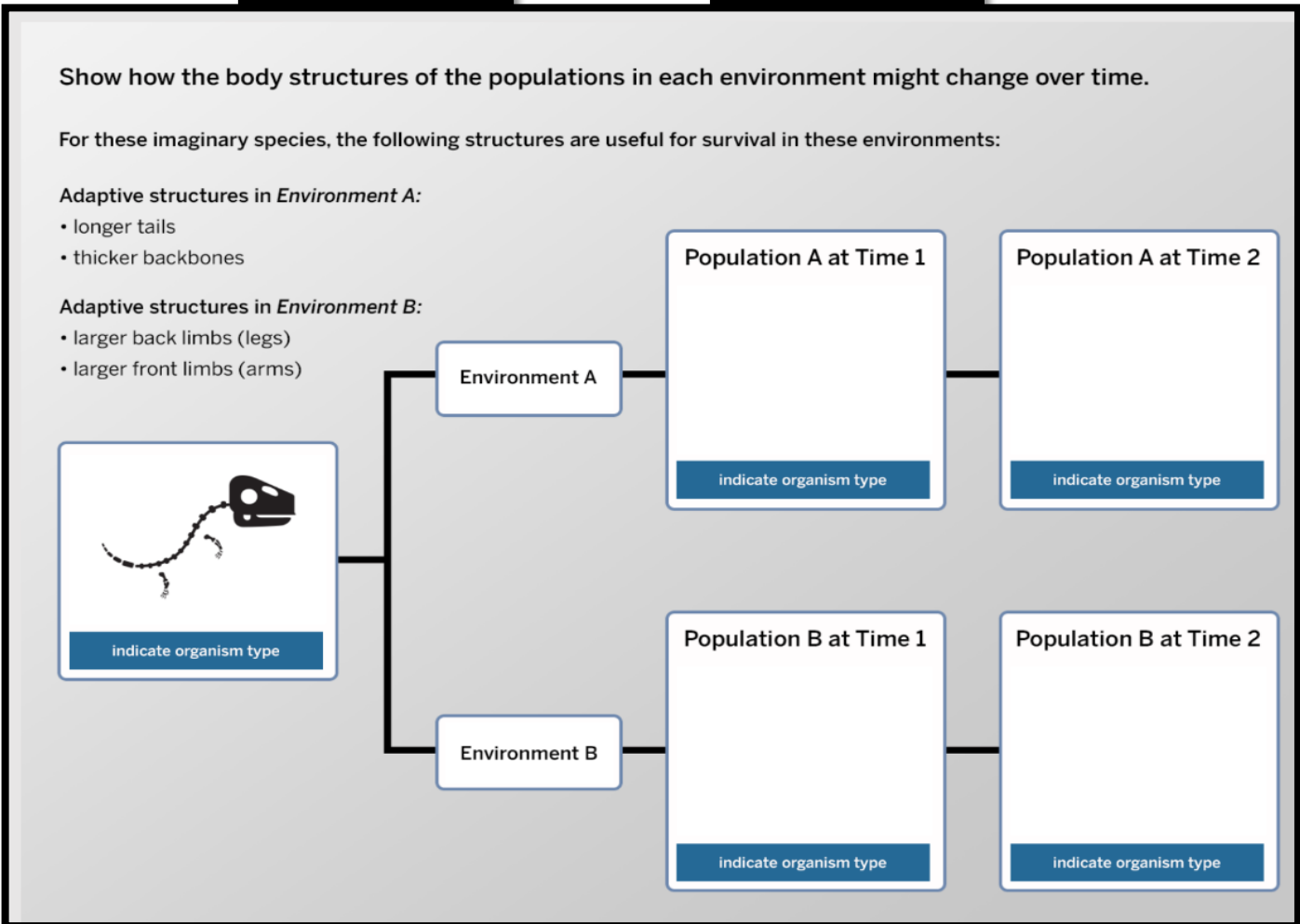
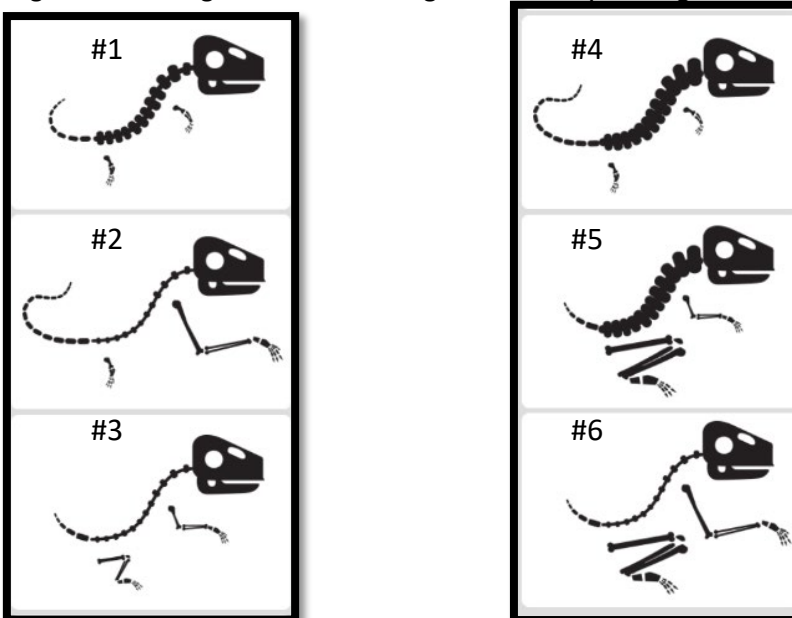
_____ Two descendant populations look very different, even though they have many similar structures.

_____ An ancestor population gets separated into different environments.

2. Take some time now to write down your ideas about this question: **How did wolves, whales, and the Mystery Fossil become so different from their common ancestor population?**

Modeling Population Changes Over Time (If you have access to the Amplify platform, open the **Evolutionary History Modeling Tool** activity in lesson 2.5 and select Population Changes. In the Modeling Tool)

1. A population is divided into two populations in different environments. In each environment, different structures are useful for survival. Show how the body structures of the populations in each environment might change over time by indicating which organisms belong where on the diagram below by writing in the corresponding number.



2. Complete the sentences below to describe your model. (Circle one bolded word for each blank.)

a. At Time 1, Population A had (**short / medium / long**) tails, (**thin / thick**) backbones, (small / medium / large) back limbs (legs), and (**small / medium / large**) front limbs (arms).

b. At Time 2, Population A had (**short / medium / long**) tails, (**thin / thick**) backbones, (small / medium / large) back limbs (legs), and (**small / medium / large**) front limbs (arms).

c. At Time 1, Population B had (**short / medium / long**) tails, (**thin / thick**) backbones, (small / medium / large) back limbs (legs), and (**small / medium / large**) front limbs (arms).

d. At Time 2, Population B had (**short / medium / long**) tails, (**thin / thick**) backbones, (small / medium / large) back limbs (legs), and (**small / medium / large**) front limbs (arms).

3. Reflection Questions

a. How does this model show how species that share a common ancestor can become very different from one another?

b. What remains stable over time in your model? What changes?

Word Relationships

As you know, whales, wolves, and the Mystery Fossil have shared structures, but those structures look very different from one another! Show what you have learned by answering the question:

How did wolves, whales, and the Mystery Fossil become so different from their common ancestor population?

- Write THREE sentences to answer the question below.
- Each sentence needs to use at least **TWO words from the word bank**.
- Use the Glossary at the end of the packet to help you!**

Word Bank

common ancestor population

descendant species

evolutionary time

shared structure

speciation

Sentence 1: _____

Sentence 2: _____

Sentence 3: _____

Considering Whale and Wolf Claims

Claim 1: The Mystery Fossil belongs with the whales, in the Whale (Cetacea) exhibit.

Claim 2: The Mystery Fossil belongs with the wolves, in the Carnivore (Carnivora) exhibit.

body structure: a part of an organism (for example, one or more bones)

estructura corporal: una parte de un organismo (por ejemplo, uno o más huesos)

common ancestor population: an older population from which two or more newer species descended

población ancestral común: una población más antigua de la cual descendieron dos o más especies nuevas

descendant species: a more recent species that evolved from an ancestor population

especie descendiente: una especie más reciente que evolucionó de una población ancestral

evolution: the process by which species adapt to environmental changes over a very long time

evolución: el proceso por medio del cual las especies se adaptan a los cambios ambientales a lo largo de periodos de tiempo muy prolongados

evolutionary time: the very long time that spans the history of Earth, from the very first cellular life to the present

tiempo evolutivo: el periodo de tiempo muy prolongado que abarca la historia de la vida sobre la Tierra, desde la primera vida celular hasta el presente

generation: a group of individuals born and living at about the same time

generación: un grupo de individuos que nacieron y viven aproximadamente al mismo tiempo

shared structure: a body structure in two or more species that features the same parts (for example, the same bones)

estructura compartida: una estructura corporal en dos o más especies que tiene las mismas partes (por ejemplo, los mismos huesos)

speciation: the process by which one population evolves into two or more different species

especiación: el proceso por medio del cual una población evoluciona a dos o más especies diferentes

species: a group of organisms of the same kind (in one or more populations) that do not reproduce with organisms from any other group

especie: un grupo de organismos del mismo tipo (que viven en una o más poblaciones) que no se reproducen con organismos de ningún otro grupo

stability: when something stays mostly the same over time

estabilidad: cuando algo permanece más o menos igual a lo largo del tiempo

trait: a specific characteristic of an individual organism

rasgo: una característica específica de un organismo individual