



Science Learning Packet

Grade 7:

Matter and Energy in Ecosystems,

Lesson 12

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 7 Science Instructional Materials
Matter & Energy in Ecosystems Unit
Lesson 12 (Amplify Chapter 3, Lesson 3.4)

AmplifyScience



Matter and Energy in Ecosystems

Name _____

School _____

Class Period _____

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 the **lesson videos being aired this week through Seattle's Public television programming on [SPS TV](#) (local channel 26). The videos and packets are also posted to 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.**

Closed captioning for the videos is available many home languages if this helpful to your family.

- Click CC (bottom right of video)
- Click Setting (the gear next to CC)
- Click Subtitles/CC
- Click Auto-translate
- Choose your language

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,
Seattle Public Schools Science Department

Lesson 3.4 Matter and Energy in Ecosystems

The Econauts are preparing to begin their next biodome experiment. First, however, they need advice about how to avoid the problems that forced the early shutdown of the last biodome experiment.

Today, you'll help the Econauts by connecting the series of causes and effects that led to problems in the biodome. Think carefully! Your advice could determine the fate of the next biodome experiment

Entry

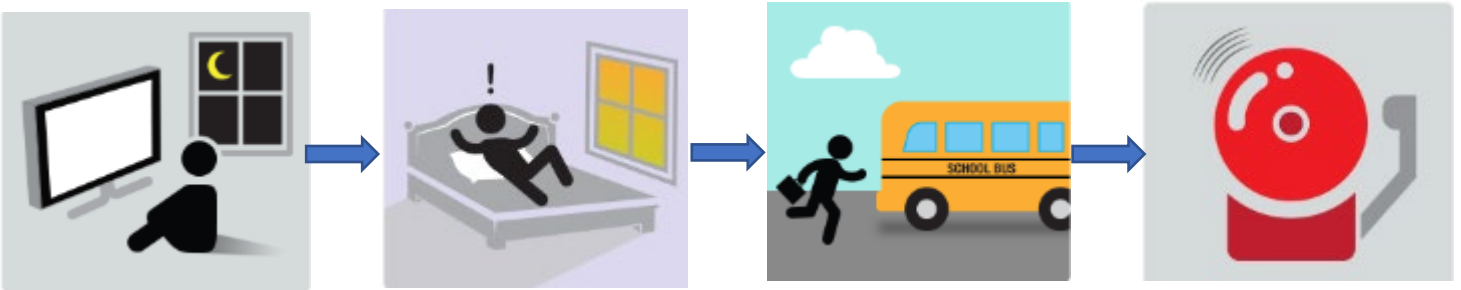
You have collected so much evidence throughout this unit and you will now use it to explain to the Econauts how events in the biodome caused the plants and animals to not have enough energy storage molecules.

The **causes and effects** you will think about involve interactions among organisms and between organisms and the abiotic environment.

A cause is WHY something happened. An effect is WHAT happened. Sometimes, a cause makes an effect happen, and that effect makes something else happen.

Example:

Today, Quincy was late to his first period class, but what caused him to be late?



Quincy stayed up late, so Quincy overslept in the morning, so Quincy missed the bus so, Quincy was late to class

Think of your own cause and effect chain of events:

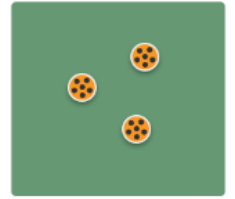
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Cause and Effect in the Biodome

Goal: Show the series of causes and effects that happened in the biodome ecosystem.






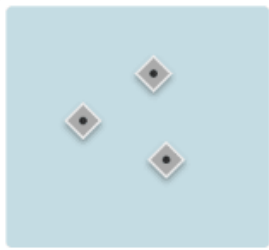
The Econauts buried dead matter, so . . .



The plants and animals did not have enough energy storage molecules.

What happened in between the Econauts burying the dead matter to the point where the plants and animals did not have enough energy storage molecules?

Order the following events in the cause and effect chain:

 <p>The rate of photosynthesis decreased, so . . .</p>	 <p>The rate of cellular respiration decreased, so . . .</p>	 <p>The number of decomposers decreased, so . . .</p>	 <p>The amount of carbon dioxide in the air decreased, so . . .</p>
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On the next page, use your understanding of how carbon moves from abiotic to biotic matters and through different populations of organisms to create a visual diagram to show how carbon moves through the ecosystem

Visual Diagram of Carbon Moving Through Ecosystem:

Abiotic
Matter



Biotic
Matter

Producer

Primary Consumer

Secondary Consumer

Decomposer

Matter

● Carbon



Carbon Dioxide



Energy Storage Molecule

Your Key:

