



Science Learning Packet

Grade 7:

Matter & Energy in Ecosystems,

Lesson 3

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

Seattle Public Schools is committed to making its online information accessible and usable to all people, regardless of ability or technology. Meeting web accessibility guidelines and standards is an ongoing process that we are consistently working to improve.

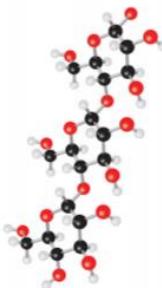
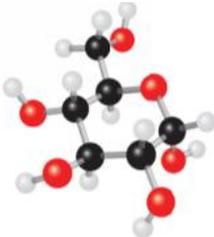
While Seattle Public Schools endeavors to only post documents optimized for accessibility, due to the nature and complexity of some documents, an accessible version of the document may not be available. In these limited circumstances, the District will provide equally effective alternate access.

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.

Matter and Energy Lesson 1.4

Entry

Energy Storage Molecule	Glycogen	Starch	Glucose	Fat
Made by:	Consumers Decomposers	Producers	Producers	Producers Consumers Decomposers
Made of:	Carbon Hydrogen Oxygen	Carbon Hydrogen Oxygen	Carbon Hydrogen Oxygen	Carbon Hydrogen Oxygen
Use:	Stores energy for later use Breaks down into glucose and releases energy when needed	Stores energy for later use Breaks down into glucose and releases energy when needed	Releases energy for cell function, growth and reproduction Creates other types of energy storage molecules	Long term energy storage Releases energy when needed Important part of cell membranes (outer coating)
Image				

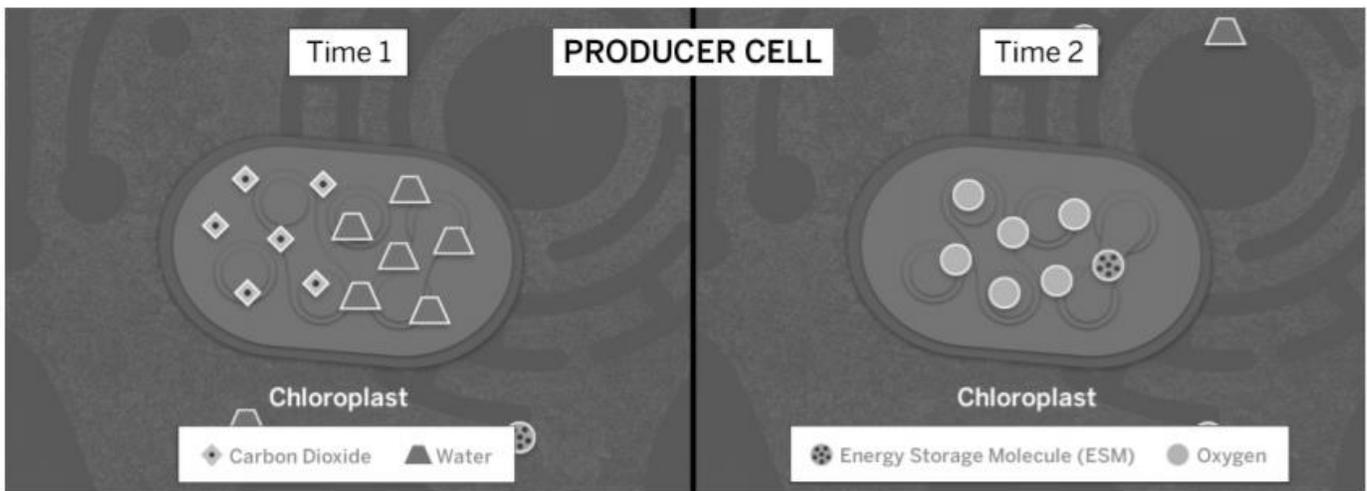
In the article set, Sunlight and Life, you learned that organisms need many types of energy storage molecules to help them survive in their ecosystems. Compare and contrast the energy storage molecules in the table above and answer the following questions.

What do you notice is similar about the energy storage molecules?

What is something interesting you noticed about one or more of the energy storage molecules?

What questions do you have about energy storage molecules?

In our last lesson, you read "Sunlight and Life". The images below are taken from the Digital Model of a producer at two different times.



Write a caption for this diagram to describe why you think the chloroplast at Time 1 is different from the same chloroplast at Time 2.

Observing Photosynthesis Up Close:

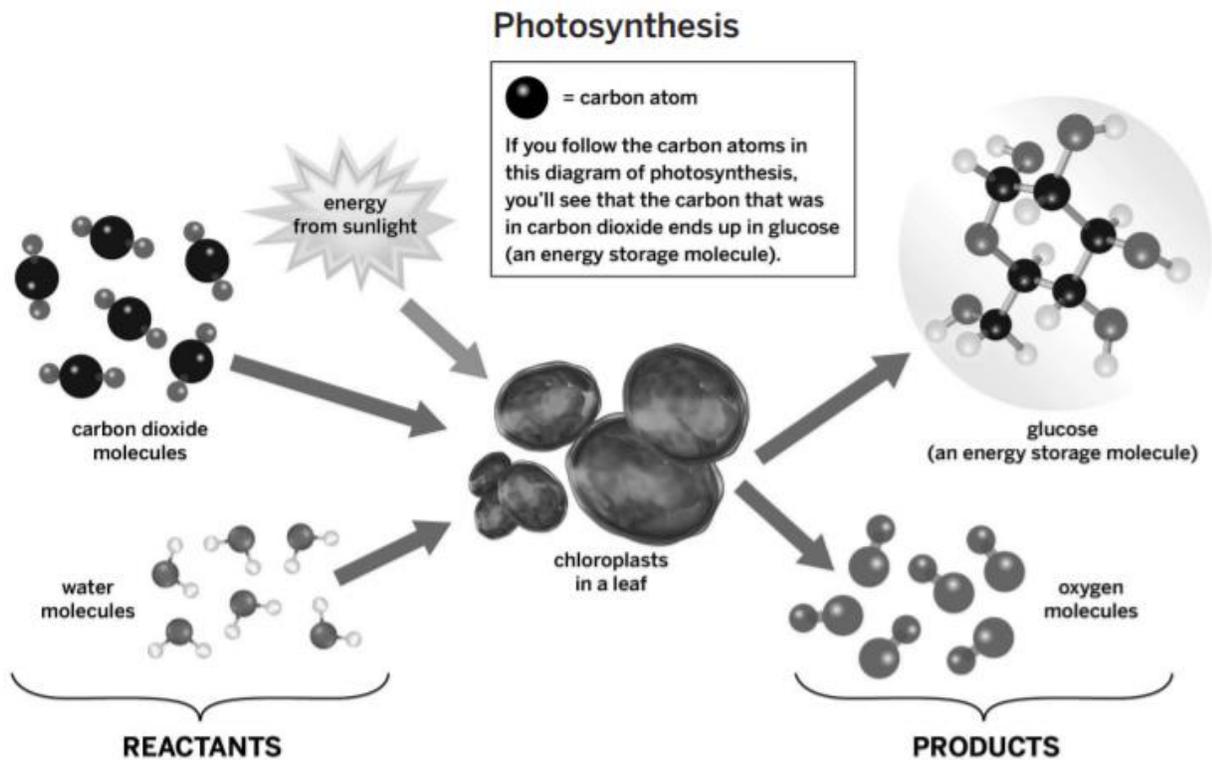
It is difficult to watch what happens inside a cell, but we can use models to represent things that are too small to be seen.

- In the Matter and Energy Digital Model, click on "View Cell" for the **producers** and observe what happens.

Observations

Summarizing Photosynthesis

Below is a diagram from the text, "*Sunlight and Life*"

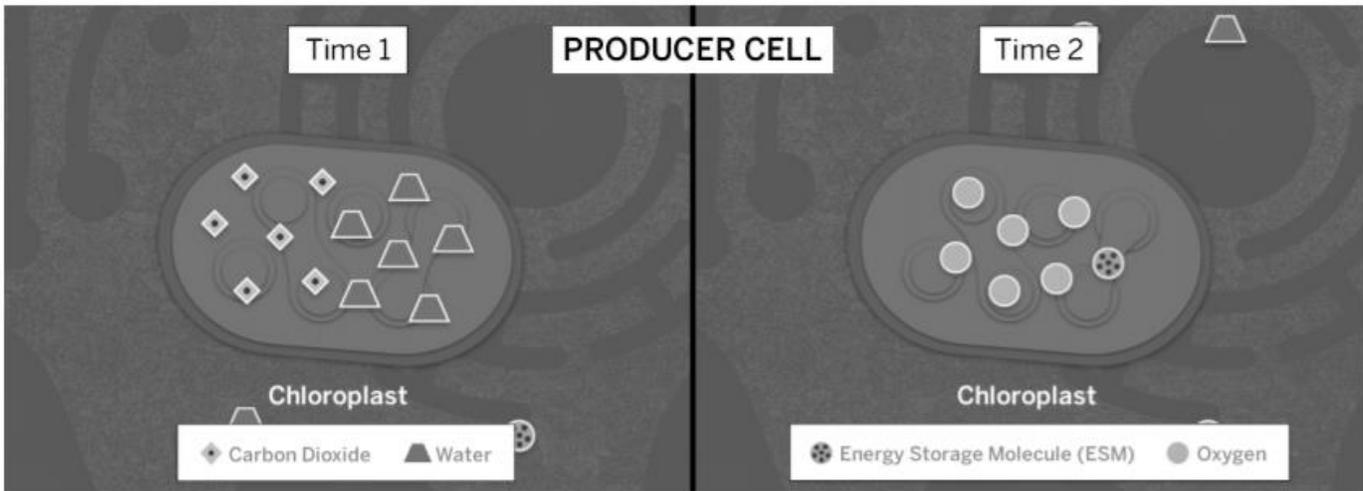


Using energy from sunlight, carbon dioxide and water react to form glucose (an energy storage molecule) and oxygen. During this reaction, atoms are rearranged.

How are the diagram and the digital model similar and different?

What do both the diagram and the digital model show about where energy storage molecules come from in an ecosystem? Look back to the energy storage molecules table from the entry; what energy storage molecule is being made?

After obtaining evidence from the article and the digital model, revise your initial caption of the process of photosynthesis by filling in the blanks below.



Photosynthesis is done by _____. This process requires _____ from sunlight and _____ from abiotic matter. Photosynthesis makes _____ for an ecosystem.

Word Bank

producers	consumers	biotic	abiotic	
energy storage molecules	carbon dioxide	energy	oxygen	carbon

Before next time, share what you have figured out about energy storage molecules and where they come from with a family member or friend!