

Photosynthesis Pencils

6 scissors

30+ pencils

7 different colors of vinyl:

blue

orange

green

gold

brown

white

pink/multi-colored

Photosynthesis Pencils

Guiding Questions

Ask students to draw the life cycle of an apple tree from seed to apples. Have students make a list of what is needed for each stage of the life cycle. Ask students to explain why an apple tree would be called a “Producer”.

Ask students how plants produce food, and introduce the term photosynthesis. Discuss the elements of photosynthesis (CO₂, water, sun, Chlorophyll, O₂, and sugar). Point out what the students have listed in the seed to apple drawings, and add what they left out.

Content

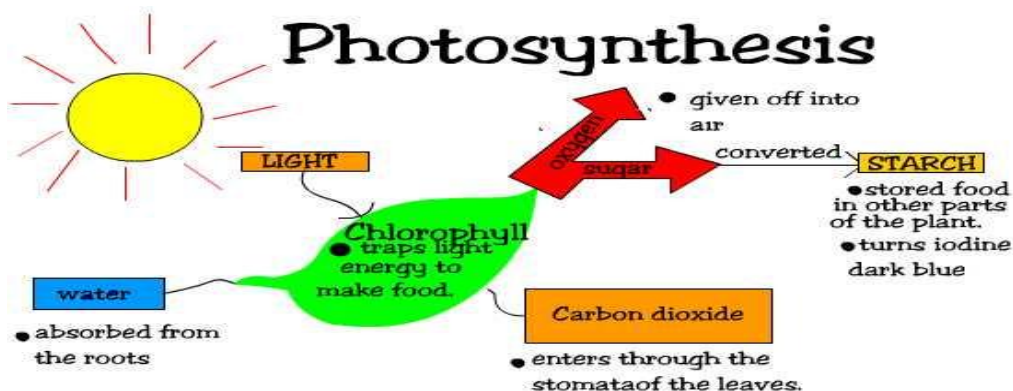
Producers are green plants capable of making their own food using energy from the sun in a process called photosynthesis.

Consumers are animals that cannot make their own food. They get their energy from other plants and animals. A food chain can have as many as three to four consumers.

A **food chain** is a model that shows how energy is passed, in the form of food, from one organism to another. The arrows between the organisms show the direction of energy flow.



Photosynthesis is the process by which plants use the energy from sunlight to produce sugar.



Photosynthesis Pencils

Students create a BioSITE pencil using small colored strips of vinyl to represent elements in photosynthesis.

- 1) Pass out one pencil to each student.
- 2) Set out colored vinyl for each team of students. Students can be instructed to cut small strips of each color to decorate their pencils, or this can be done ahead of time. Each colored strip should be the size of a small bandaid.
- 3) Have students study the formula for photosynthesis and decide which color vinyl will represent each element of the photosynthetic process.

Example: CO₂ = brown, Sun = yellow/orange, Water = blue, Chlorophyll = green, and then nutrients = gold, O₂ = white, and sugar = pink/multicolored.

brown, orange, blue, green, gold ----- white, pink

- 4) Have students wrap the first five colors (what producers use up in the process of photosynthesis) around the very top eraser end of the pencil.
- 5) Tell students to leave a space to represent the process of change as plants conduct photosynthesis.
- 6) Have students wrap the last two colors (what producers give up or produce) around the pencil after they skip a space.
- 7) You're ready to use your BioSITE pencil!!

Challenge

Can you explain the process of photosynthesis by using only your pencil and not looking at your notes?