



Exploring 4-H at Home

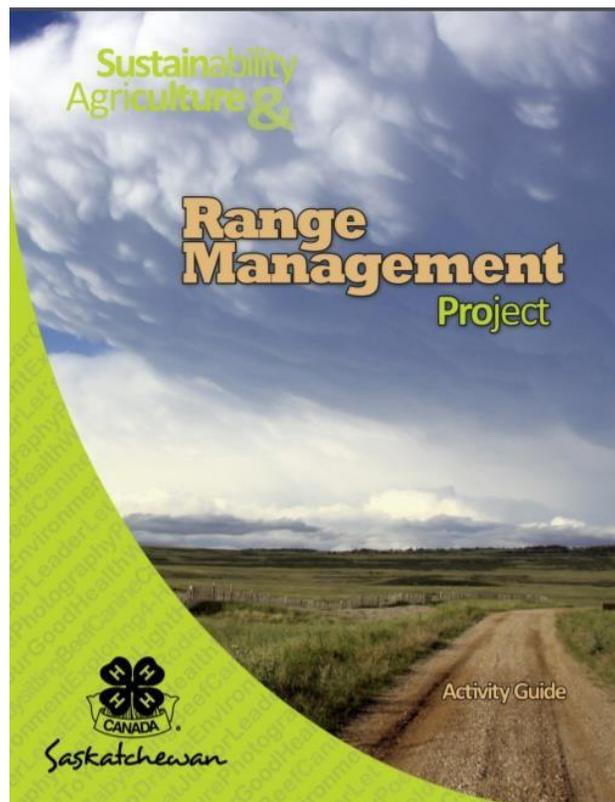


Sustainable Agriculture
and Food Security

Pillar: Sustainable Agriculture and Food Security

Project: Range Management

Activity: Photosynthesis Crossword (125)



What is Photosynthesis?

Photosynthesis is the way in which plants make food by taking in light from the sun. You may have learned about this in school. Younger children can watch this video for a basic overview: <https://www.youtube.com/watch?v=D1Ymc311XS8>

Here are some definitions to know:

Nutrients: These are needed to stay healthy! The organic building blocks of living things or that are needed by living organisms.

Carbohydrates: That's a long name! These are the products of photosynthesis, becoming sugars (used for food/energy), starches (stored energy) and cellulose (used for structure).

Stomata: Tiny holes in the plant, especially in the leaves. Air and water move in and out of these little holes before, during and after photosynthesis.

Chlorophyll: This makes the plant green! It absorbs, stores and then changes the energy from the sun.

So What's Happening?

1. Carbon dioxide from the air enters the stomata during the day. The sunlight's energy is trapped in the chlorophyll in the plants leaves. The energy is all ready to be used once it is modified by the chlorophyll.
2. Water in the soil goes into the roots, as well as minerals and nutrients.
3. The next process happens in the chlorophyll in the plant's cells. The most chlorophyll is in the cells in the leaves. Using the sun's energy that has been trapped in the chlorophyll the carbon dioxide and water is converted into oxygen and simple carbohydrates (energy).
4. The oxygen is released from the plant. It goes out of the stomata into the air. Plants produce the oxygen we breathe.
5. The carbohydrates that are produced in photosynthesis are the building blocks of the plant. Combined with the nutrients and minerals, the structure of the plant is formed and carbohydrates are stored for later use. Roots, stems, shoots, leaves, flowers, fruit and seeds are all grown!

As the plant's roots absorb water from the soil the nutrients dissolved in the water are also absorbed. Nutrients get into the soil different ways. Some nutrients like nitrogen (N) and sulphur (S) come from the decomposing plant material in the soil. Others nutrients, like potassium (K) and phosphorous (P) are minerals that come from the actual soil and weathered rock.

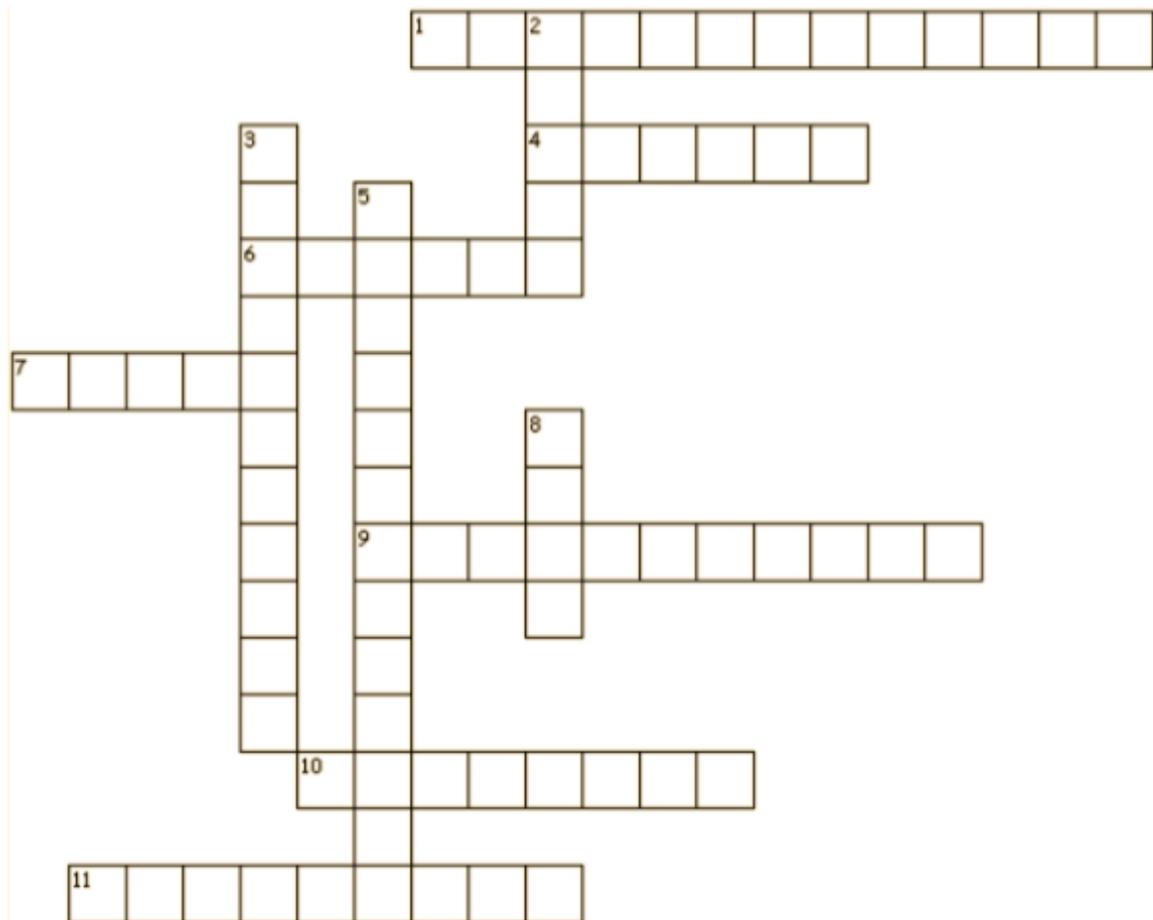
Remember, photosynthesis uses the sun's energy, carbon dioxide, and water to make oxygen and the simple carbohydrates that the plant uses to grow.

Bonus Video for Older Kids – [Can Only Plants Photosynthesize?](#)

Crossword Time!

Complete the crossword using the information above.

Photosynthesis: How Plants Grow Crossword Puzzle Worksheet



Created by [Puzzlemaker](#) at [DiscoveryEducation.com](#)

Across

- 1) & 7) carbon dioxide and ___7___ are converted into oxygen and simple ___1___.
- 4) Exits out of the stomata into the air.
- 6) Photosynthesis takes place mostly in the _____.
- 9) Nitrogen and sulphur come from the _____ plants in the soil.
- 10) Potassium (K) and phosphorous (P) are _____ that come from weathered rock.
11. _____ are dissolved in the soil moisture.

Down

- 2) Moisture in the soil enters the _____.
- 3) Sunlight energy is trapped in the _____.
- 5) Enters into the stomata during the day.
- 8) Plants uses carbohydrates to _____.