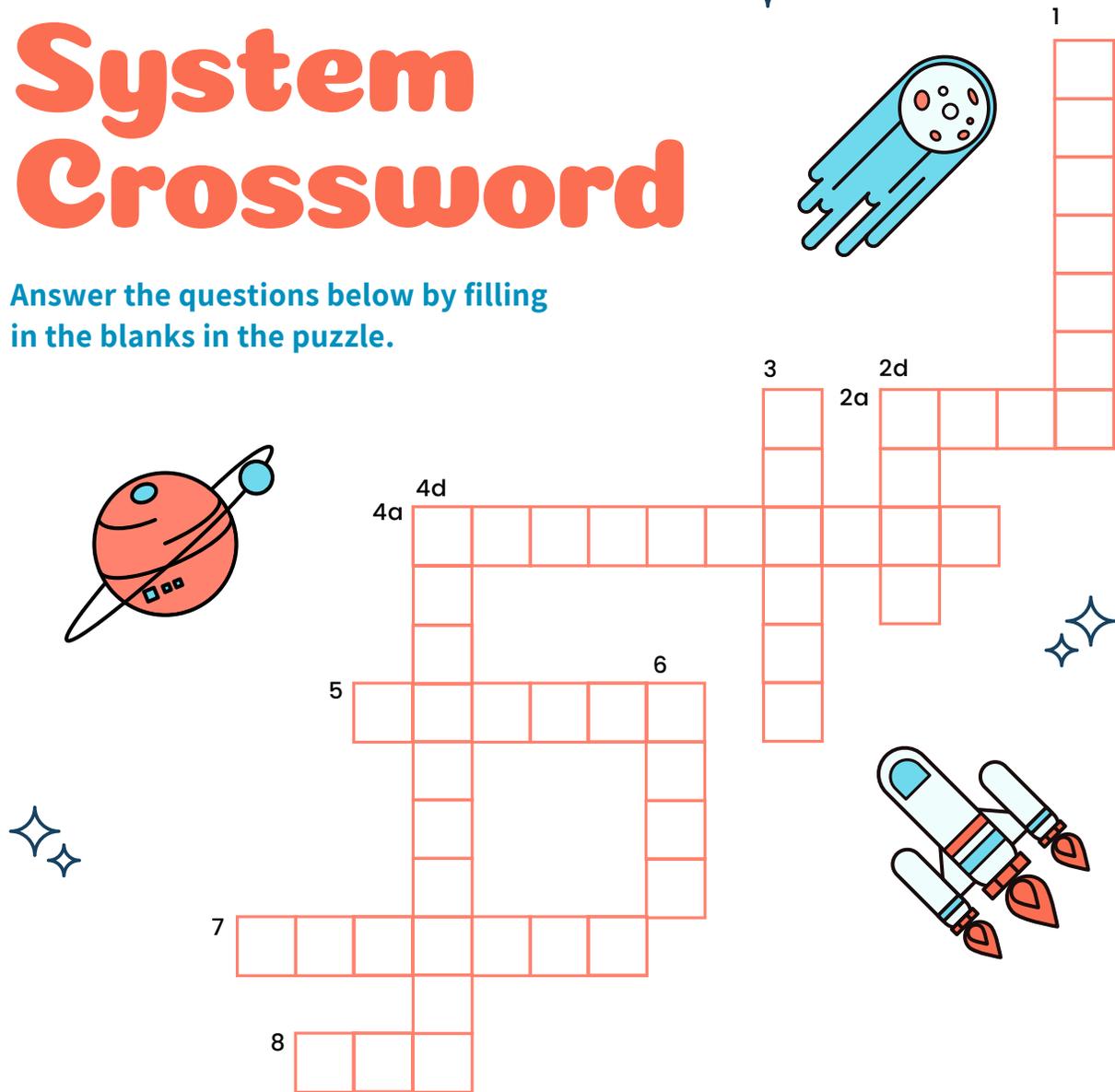


Solar System Crossword

Answer the questions below by filling in the blanks in the puzzle.



ACROSS

- 2a - The planet with the moons Phobos & Deimos.
- 4a - What the moon's light is caused by?
- 5 - Objects that are commonly made of snow, ice, and dust, and can be found moving around outer space.
- 7 - The planet famous for its red spot.
- 8 - The center of our solar system.

DOWN

- 1 - What occurs when one heavenly body (moon or planet) moves into the shadow of another?
- 2d - This is Earth's satellite.
- 3 - The planet that has the most number of rings.
- 4d - One turn around the Earth's axis that equals 24 hours is a?
- 6 - What is the sun?



TORNADO FACT FILE

Destructive and fast spinning funnel-shaped wind that stretches from a thunderstorm to the ground.

Tornadoes are also called twisters. They are distinguished from tropical storms such as cyclones, typhoons and hurricanes due to their twisting nature.

The majority of the world's tornadoes occur in the United States of America, during spring time.



CAUSES

Scientists aren't exactly sure how or why tornadoes form, but do know that they come from supercell storms that have strong updrafts (rising warm air).



DURATION

Tornadoes can last for a few seconds up to an hour.

Tornadoes can be so powerful that they can uproot trees, lift cars and tear roofs off houses.



A tornado over water is called a waterspout.

SIZE

The diameter of a tornado can be as small as a few meters to over a kilometer wide.

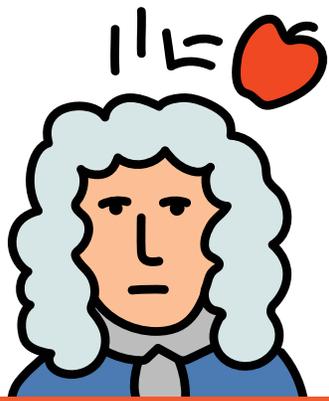


SPEED

Tornadoes can reach speeds of up to 480kms per hour!

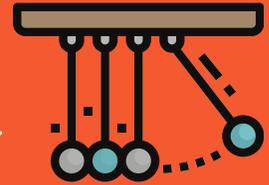
The speed of the tornado determines its classification using the 6-point Fujita scale, where F0 is the weakest, and F5 the strongest wind speeds.





ISAAC NEWTON FAST FACTS

Sir Isaac Newton is an English 'natural philosopher' and a key figure in the scientific revolution of the 17th century.



BASIC INFORMATION

Name: Sir Isaac Newton

Birthdate: December 25, 1642

Birthplace: Lincolnshire, England

Notable contributions:

Discovering gravity, inventing calculus, and developing the laws of motion

NEWTON'S METHOD

Also known as the Newton-Raphson Method, this mathematical root-finding algorithm produces a better approximation of roots of a real-valued function.

IMPORTANT FACTS



Newton discovered the laws of motion after surmising that apples fell from trees because a force acted upon them. In relation to this, he also concluded that the moon would fly away from the Earth in a straight line if not for the planet's gravitational pull.

Newton discovered calculus at the age of 24. Calculus is the study of the rate of change and summation of quantities. It is integral to physics, chemistry, biology, economics, all branches of engineering, and more.

Philosophiæ Naturalis Principia Mathematica, Newton's work published in 1687, states the laws of motion and the foundations of classical mechanics, among others.

THE REFLECTING TELESCOPE

Newton invented a telescope that uses mirrors to reflect light and form an image. This type of telescope technology is used today for major astronomy telescopes.



THE AMAZON FACT FILE

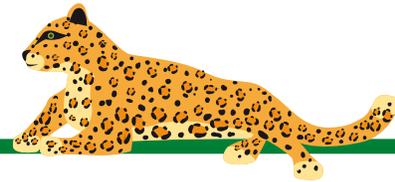
The amazon jungle is the world's largest tropical rainforest, located in South America, and spanning over eight countries.



The Amazon is called the lungs of the earth because it produces more than 20% of the world's oxygen supply - thanks to all those trees!

LAYERS

Emergent	Top of the tallest trees
Canopy	Top of the shorter trees
Understory	Between the canopy and the forest floor
Forest Floor	Dark and cool ground level layer.



ANIMALS

1 in 10 species worldwide are found in the amazon.

BIRDS

1,300 + bird species.



PLANTS

More than 40,000 different kinds of plants.



SIZE

5.5 million square kilometres.



PEOPLE

Around 400 Indian tribes live in the Amazon rainforest, each with their own language and culture.



Soil: Reading Comprehension

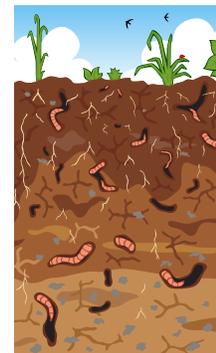


Soil is made up of four different things. They are rocks, humus, air, and water. Rocks are often broken up by wind, water, and changing temperatures causing them to become very small. These tiny pieces of rock form a part of soil.

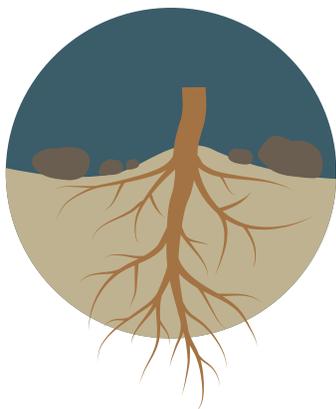
The best soil for growing plants is soil that has a lot of humus, water, and air. A good type of soil for growing plants would be soil found in forests and farms.

Humus is the part of soil made up of dead plants and animals. It is often found near the surface of the ground. Some soils are rich in humus and some are not. Air and water live in the spaces in soil. Worms squirm through soil creating holes and spaces for air and water to move. If soil has no spaces for air and water it won't be as good for growing.

There are rock pieces often found in soil. The three main kinds are sand, silt, and clay. Sand is loose and does not hold water well. Silt holds water, but it is very light and can be blown away easily. Clay holds water, but it is heavy and may not be the best for growing. A mixture of all three types of rock is called loam and provides the type of nutrients plants need. Loam would be the best rock mixture found in soil for growing.



Many animals live in soil. Insects lay their eggs in soil, and many small creatures live on the top of the soil eating the dead pieces of plants and animals. Larger creatures like groundhogs and badgers also make their homes in soil by burrowing deep tunnels.



Sometimes soil can lose its shape through a process called erosion. Problems are caused when soil breaks down due to time, water, and wind. Soil can often be saved from erosion when there are many tree roots in it. Roots from trees work to hold soil together.



Soil: Reading Comprehension

Using sentences, answer the following questions based on the information given.

1. The four parts of soil are:

- _____
- _____
- _____
- _____

2. Humus is:

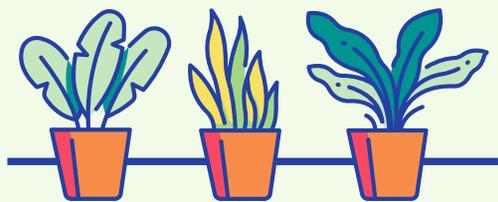
3. Explain who lives in soil and what they do:

4. Explain the type of rocks you find in soil?

5. What prevents erosion from happening?



Photosynthesis



Photosynthesis is the process where plants transform light energy into chemical energy. Plants use this energy to make their own food. The light energy they captured is used to convert carbon dioxide, water, and minerals into oxygen.

Chlorophyll

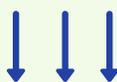
The pigment that gives plants their green color and helps in the process of photosynthesis.

Did you know?

There are organisms other than plants that can undergo photosynthesis. These include algae and the emerald green sea slug.



Sun



Plant

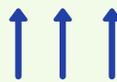
Carbon dioxide



Oxygen



Water is absorbed
(through the roots)



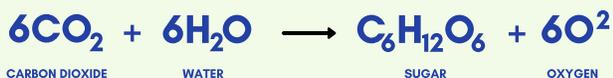
The Photosynthesis Process

Plants take in water and carbon dioxide and use energy from the sun to turn them into food.

Within the plant cell, water is oxidized, loses electrons, and is changed into oxygen. Carbon dioxide is reduced, gains electrons, and turns into glucose.

Oxygen is released, and glucose is stored within the plant as energy.

The Photosynthesis Formula



T S U N A M I F A C T F I L E

Giant waves that look like a wall of water, caused suddenly by natural events which affect the movement of water.

Pronounced:
'soo-nar-me'

Meaning: In Japanese
'Tsu' = harbour + 'nami' = wave



CAUSES

Earthquakes, landslides on the sea floor, volcanic action, meteorites, land falling into the ocean.

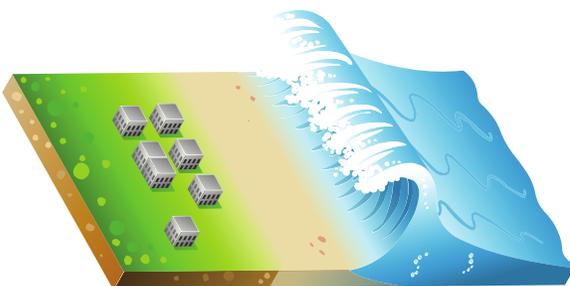


HEIGHT

Up to 30 meters!



Before a tsunami makes land, the water is sucked out to sea revealing the ocean floor, just like at low tide.



SPEED

Tsunami speeds slow as they reach land, because speed is determined by the depth of the water. In deep water, a tsunami can travel as fast as a passenger jet!



Photosynthesis



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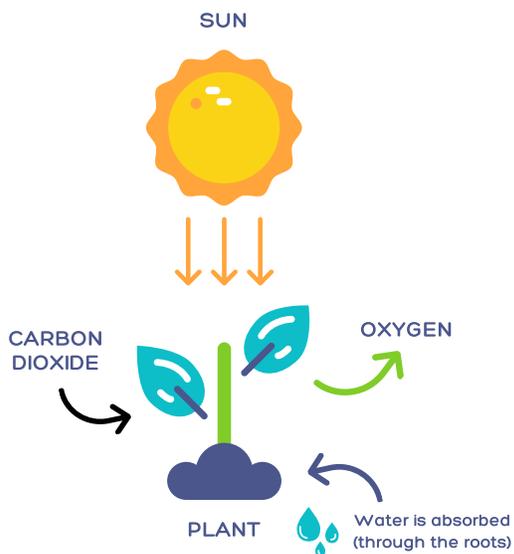
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The Photosynthesis Formula



Sunflower

Facts about one of the most famous flowers in the world

Basic Information

Name: Common Sunflower
Location and Habitat:
Prairies and dry, open areas
Scientific name:
Helianthus annuus

Facts on sunflowers

- Sunflowers are actually "sun followers" through a type of plant behavior called heliotropism. Their buds and blossoms start the day facing east and then follow the sun until it sets in the west. But when the flowers are undergoing seed production, mature flower heads become heavier and stiffer than usual and remain facing east for the rest of the day.
- The sunflower head, which looks like a single flower resembling the sun, is actually made up of smaller flowers. The yellow petals surrounding the head are called "ray florets." Unlike regular flowers, these florets cannot reproduce. But the disk florets, located in the middle of the sunflower head, can produce seeds. They have male and female parts, allowing each disk floret to make seeds and self-pollinate.
- About six to eight hours of sunlight are needed for sunflowers to grow well. As if reaching for the skies, some sunflower plants can grow as tall as 16 feet! Different species grow at varying heights, and the distance between plants in a plot can also influence this

They have a history of healing!

Sunflowers also serve as home remedies in some cultures, like in Mexico, where the blooms are used to soothe chest pain. Some Native American tribes, such as the Cherokee and Dakota, use parts of the plant in their medicinal concoctions for relieving kidney and pulmonary issues.

They have been out of this world!

U.S. astronaut Don Pettit brought sunflower seeds to outer space during his 2012 trip to the International Space Station. He planted the seeds and documented his out-of-this-world gardening journey by taking photos of the growing sunflowers and sharing his experience through a blog.



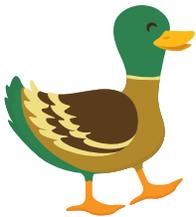
STEM: LIVING THINGS

Inquiry question: What are the external features of living things?

Draw a line to match the living thing to an external feature:



Scales



Large beak



Webbed feet



No legs



Woolly coat



STEM: LIVING THINGS

Inquiry question: What are the external features of living things?

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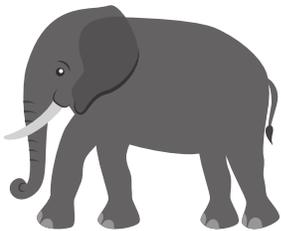
Big ears



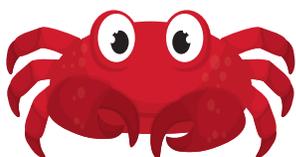
Hard shell



Slimy skin



Two legs



Delicate wings



STEM: LIVING THINGS

Inquiry question: What are the external features of living things?

Write your own description and swap with a friend to have them match the living thing to the external feature.



