Simple Solutions.

Minutes a Day–Mastery for a Lifetime!

Level 3

Science

Teacher's Edition

Help Pages

Help Pages
Glossary

A

amphibian a vertebrate that lives part of its life in the water and part on land (L #17)

anemometer an instrument that measures wind speed (L #13)

attract to pull toward (L #115)

B

balance a tool that is used to measure the mass of objects (L #39)

bedrock the bottom layer of soil; it lies below the subsoil (L #61)

bird a vertebrate that has feathers, wings, and two legs (L #16)

C

carnivore an animal that eats other animals (L #41)

cirrus the highest clouds in the sky; they look like wisps of hair (L #82)

clay a very fine-grained soil (L #58)

community all of the populations that live in an ecosystem at the same time (L #32)

condensation the process in which water vapor (gas) turns into liquid water (L #77)

conductor something that lets electricity pass through it easily (L #112)

Help Pages
Glossary

conifer a plant that makes seeds inside cones (L #26)

consumer an organism that eats other living things in order to get energy (L #49)

cumulus a name for clouds that look puffy and can bring storms (L #82)

current electricity electricity that moves through wires (L #110)

D

deciduous a plant that sheds its leaves at the end of a growing season (L #37)

desert a very dry ecosystem that gets less than 10 inches of rain per year (L #35)

E

ecosystem all of the living and nonliving things that interact with each other (L #32)

evaporation the process by which liquid water changes to water vapor, or a gas (L #78)

experiment a test that is done to see if the hypothesis is correct (L #11)

F

fish vertebrate group that lives in the water and is covered with scales that protect it and help it to swim (L #15)

Help Pages

Glossary

food chain the path of food from one living thing to another (L #49)

force any kind of push or pull (L #89)

forest an ecosystem where many trees grow (L #37)

freshwater water that doesn't have salt in it; lakes, streams, rivers, and ponds are examples (L #34)

friction a type of force that stops things or slows them down (L #89)

fulcrum the fixed point on a lever (L #99)

G

gas a state of matter; a gas does not have a definite shape or take up a definite amount of space (L #86)

grassland an ecosystem that is usually dry and flat (L #38)

gravity a force that pulls objects toward each other (L #91)

H

habitat the place where a plant or animal lives (L #5)

hand lens a tool that is used to magnify or make something look larger (L #3)

herbivore an animal that eats only plants (L #41)

humus the decayed remains of plants and animals (L #58)

hypothesis an educated guess, or a possible answer to a question (L #10)

Help Pages

Glossary

I

inclined plane a simple machine that makes lifting and moving things easier (L #102)

insulator something that does not let electricity flow through it easily (L #112)

instinct a natural ability; known without being taught (L #7)

invertebrate an animal without a backbone (L #23)

investigation a study a scientist conducts when there is a problem or a question to be answered (L #9)

L

larva the second stage of metamorphosis (L #29)

leaf the part where the plant makes its food (L #5)

lever a bar that pivots, or turns, on a fixed point (L #99)

liquid a state of matter that takes the shape of its container (L #86)

living alive; living things need food, water, and air in order to live (L #1)

loam a mixture of all of the types of soil: humus, clay, silt, and sand; great for growing crops (L #58)

Help Pages

Glossary

M

magnet a piece of metal that attracts iron and steel (L #115)

mammal a vertebrate that has hair or fur and gives birth to live young (L #14)

matter anything that takes up space (L #86)

metamorphosis the series of changes in appearance from birth to adulthood (L #28)

microscope a tool scientists use to magnify an object; helps to view objects which can't be seen with only your eyes (L #6)

mimicry imitating the look of another animal (L #46)

moon phases different shapes of the moon seen at different times, having to do with the position of the moon and the sun; phases include full moon (a circle), half moon (a half circle), or crescent moon (a thin sliver) (L #44)

N

nonliving not alive (L #1)

O

omnivore an animal that eats plants and other animals (L #41)

Help Pages

Glossary

P

pitch the highness or lowness of a sound (L #93)

poles the ends on a magnet (L #115)

population a group of organisms of the same kind (L #32)

precipitation any form of water that falls to the ground: rain, snow, sleet, or hail (L #77)

predator an animal that hunts another animal for food (L #51)

prey an animal that is hunted by another animal for food (L #51)

producer an organism that makes its own food (L #49)

pulley a simple machine that is made of a rope that is fitted around a fixed wheel (L #100)

pupa a stage of metamorphosis in which the organism is wrapped in a cocoon (L #29)

R

repel to push away (L #115)

reptile a vertebrate that has dry, scaly skin and lays eggs on land (L #18)

root a part of a plant that takes in water and nutrients from the soil (L #5)

Help Pages

Glossary

S

sand a type of soil that has tiny grains of rock that you can easily see with your eyes (L #58)

scientific method an organized plan that a scientist uses to conduct a study (L #9)

screw a simple machine used to hold two or more objects together or to lift an object (L #103)

seed the first stage of life for many plants; contains the food to help a new plant grow (L #8)

silt a type of soil made of tiny grains of rock that are hard to see with your eyes (L #58)

simple machine a tool with few or no moving parts that makes work easier (L #98)

soil a mixture of sand, silt, clay, humus and or bits of rock (L #58)

solid matter that has a definite shape and takes up a definite amount of space (L #86)

sound a form of energy that travels in waves (L #93)

static electricity an electric charge that builds up on an object (L #110)

stem the part that holds the plant up; the stem carries water and nutrients (food) from the roots to the leaves (L #5)

stratus the lowest clouds in the sky; they look like a blanket of clouds (L #82)

Help Pages

Glossary

subsoil the middle layer of soil in which the soil particles are larger and not as dark as topsoil; contains small pieces of rock (L #61)

T

topsoil the top layer of soil; topsoil contains a lot of humus, and plants grow best there (L #61)

V

vertebrate an animal with a backbone (L #14)

vibrate to move back and forth (L #93)

W

wedge a simple machine made up of two inclined planes placed back to back (L #104)

wheel-and-axle a simple machine made of a small cylinder, or an axle, attached to a larger wheel (L #101)

work something that is done when a force is used to move an object (L #98)

Help Pages

Animal Fact Cards (Amphibians)

Frog		
Facts	In summer, the frog is most active at night. The frog usually spends the day in damp, hidden places. From November to March it hibernates underwater or hides in soft mud. It uses its sticky, long tongue to catch its prey.	
Diet	Flies, snails, beetles, spiders, centipedes, and worms	 frog
Breeding	Frogs lay about 2,000–4,000 eggs. Within days, tadpoles begin to grow. Metamorphosis lasts 12–14 weeks.	
Group	Amphibian	

Salamander		
Facts	The salamander spends part of its life in the water and part on land. Its skin is smooth and moist with a short body and a long tail. The salamander may find a hole in the ground during cold months to sleep until spring comes.	
Diet	Insects, snails, worms, and sometimes other salamanders	 salamander
Breeding	Salamander eggs are laid in the water. When they hatch, the larvae breathe with gills. As they mature, they develop lungs for breathing air and can go on land, or remain in the water.	
Group	Amphibian	

Help Pages

Animal Fact Cards (Birds)

Cardinal		
Facts	The cardinal is found throughout the eastern half of the US, in the Southwest, and in Mexico. It makes its home in gardens and parks. The male cardinal is brighter in color than the female. Its beak is good for crushing seeds.	
Diet	Insects, berries, and seeds	 northern cardinal
Breeding	It breeds from March to August. It lays about 3–4 eggs, which are white or pale green with brown spots.	
Group	Bird	

Eagle		
Facts	The eagle is found in forests and wetlands of Asia, Europe, and North America. Eagles can live 15–20 years. The golden eagle is most at home in wide open spaces. It hunts its prey, and can swoop down on its prey at speeds of 95 miles per hour.	
Diet	Small mammals and birds, also lizards and snakes	 golden eagle
Breeding	The golden eagle usually builds its nest on rocky ledges, cliffs, or trees. The eagle lays two eggs. The eggs are white with brown blotches.	
Group	Bird	

Help Pages

Animal Fact Cards (Birds)

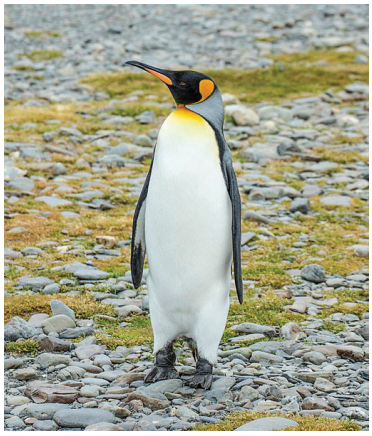
Flamingo		
Facts	The flamingo needs shallow, salty water in which to feed and breed. It flies in loose flocks, in long, single lines, or in V-formation. Its long neck allows it to reach food deep in the water. Flamingos rest by standing on one leg. A flamingo can live 15–30 years. The flamingo eats with its head upside down in the water. Its nest is a mound of mud on the ground	
Diet	Small invertebrates, algae, insects, mollusks, and worms	 flamingo
Breeding	Flamingos breed from April to August. They lay one off-white egg.	
Group	Bird	

Hummingbird		
Facts	The hummingbird is able to fly backwards and upside down and to hover in the air. It lives in woods, orchards, and gardens. Each species makes a different humming sound. Its long beak is perfect for feeding on nectar.	
Diet	Nectar and insects	 ruby-throated hummingbird
Breeding	Two eggs are laid sometime between March and July in a nest high up in a tree.	
Group	Bird	

Help Pages

Animal Fact Cards (Birds)

Pelican		
Facts	The brown pelican lives in rocks and cliffs near warm coastal waters. Pelicans usually stay near the shoreline. There are 8 species of pelicans. A pelican's long beak has a pouch that can scoop up to 2 gallons of water. They live 15–25 years.	
Diet	Mainly fish	 brown pelican
Breeding	They lay about 3 eggs which are dull white in color. Some pelicans make a nest on the ground and others make their nests in trees. They usually breed in April.	
Group	Bird	

Penguin		
Facts	Penguins don't fly, they swim. Penguins use sounds and sign language to communicate with each other. They eat snow to get fresh water. A penguin's bill is long and thin. The King Penguin is the second largest of the penguin species. They have colorful feathers around their necks and heads.	
Diet	Fish, squid, krill, crab, or shrimp	king penguin 
Breeding	They do not build a nest. They lay one egg at a time. The parents keep the egg warm against their stomachs and on their feet. They usually average one chick every two years.	
Group	Bird	

Help Pages

Animal Fact Cards (Fish)

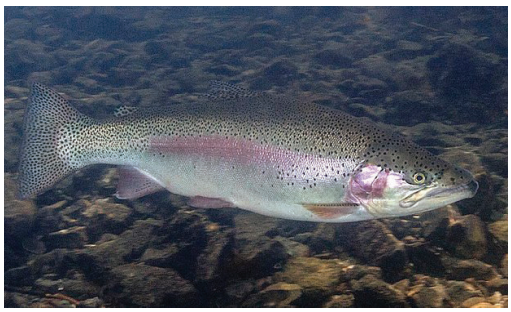
Angelfish		
Facts	The angelfish is one of the most colorful of marine animals. It can be found in coral reefs, and in tropical seas around the world. There are 74 different angelfish species. The angelfish has a flattened body which allows it to slip into tight places to avoid predators.	
Diet	Algae, worms, shellfish, and sponges	 freshwater angelfish
Breeding	Angelfish produce hundreds of eggs.	
Group	Fish	

Salmon		
Facts	The salmon begins its life in fresh water. The young fish swims out to the salt water of the open sea to mature. Eventually it returns to the same stream where it was born to mate and then to die.	
Diet	The young salmon eats insects and other small animals in rivers. After about 3 years, the adult swims out to sea where it eats small herring and sand eels.	 Atlantic salmon
Breeding	A salmon lays between 10,000 and 30,000 eggs. The female digs a nest in the gravel by beating away the stones with her tail. Most salmon die after spawning.	
Group	Fish	

Help Pages

Animal Fact Cards (Fish)

Shark		
Facts	The great white shark can be found in the warmer oceans throughout the world. It is the most deadly of the man-eating sharks. The great white can live 30–40 years.	
Diet	Any fish or warm-blooded creature it can catch; also garbage and dead animals	 great white shark
Breeding	Not much is known because no pregnant white shark has ever been caught. It is believed that they give birth to a small number of pups.	
Group	Fish	

Trout		
Facts	Rainbow trout live mainly in fast-moving, rocky rivers. They are native to North America. Rainbow trout are very popular fish to catch and eat. They thrive in reservoirs, lakes, ponds, rivers, streams, and canals. Trout usually live about 7 years.	
Diet	Mainly insects, small fish, frogs, tadpoles, and worms	 rainbow trout
Breeding	The spawning season is between March and April. Trout lay between 500 and 3,000 eggs at a time.	
Group	Fish	

Help Pages

Animal Fact Cards (Mammals)

Bat		
Facts	Bats live in cool, dark places such as rock crevices, caves, buildings, and wood piles. Bats are nocturnal animals. They hang upside down by their feet. Bats can catch hundreds of mosquitoes each hour. They are the only mammal that can fly and can live up to 30 years in the wild.	
Diet	Flies, moths, mosquitoes, other flying insects, and fruit	 Mariana fruit bat
Breeding	They give birth to a single pup each year.	
Group	Mammal	

Beaver		
Facts	Beavers are found in streams and lakes. They use their huge front teeth to knock down trees and branches. The trees and branches, along with mud, sticks, and stones, are used to build dams across streams. A large marsh, rich in water plants, insects, birds, and fish, is formed behind the dam. Beavers warn each other of danger by slapping their tails on the surface of the water.	
Diet	Mainly bark and leaves, twigs, seeds, and roots	 American beaver
Breeding	Baby beavers are called kits. A beaver may have up to 8 kits at a time.	
Group	Mammal	

Help Pages

Animal Fact Cards (Mammals)

Bear		
Facts	The American black bear is most active at night. It is known to hunt for food during the day especially in the fall, to prepare for winter. It is the smallest of all North American bears. The black bear makes its den under a fallen tree, in a hollow log, in a cave, or in a burrow that it digs. Black bears hibernate, but stay semi-conscious through the entire winter.	
Diet	Twigs, buds, leaves, nuts, roots, fruit, corn, fish, and occasionally, meat	 black bear
Breeding	A black bear may give birth to up to 5 cubs, but usually only 2 or 3. They only give birth every 2–4 years.	
Group	Mammal	

Camel		
Facts	Camels live in the desert. They have one or two humps that hold fat, not water. When there is a lot of food, the camel overeats and stores the excess as fat in its hump. When food is scarce, the camel lives on the stored fat. Its hairy ears and long eyelashes help protect it from the sun and blowing sand. Camels live 17–50 years.	
Diet	Any vegetation in the desert, including thorny twigs and salty plants	 camel
Breeding	The camel gives birth to a single calf.	
Group	Mammal	

Help Pages

Animal Fact Cards (Mammals)

Chimpanzee		
Facts	Chimpanzees live in a troop of between 25 and 80 members. Each troop has a dominant male. The chimpanzee sleeps at night in a nest in a tree. Chimps stay mainly in trees during the wet season, and on the ground when it is dry. Chimpanzees can live up to 40 or 50 years.	
Diet	Mainly fruit, but also leaves, buds, blossoms, bark, honey, termites, ants, and sometimes other mammals	 African chimpanzee
Breeding	They give birth about every 3 years. They have 1–2 young.	
Group	Mammal	

Coyote		
Facts	The coyote is most at home in open grasslands and thinly wooded areas. They can be found from Alaska to Costa Rica. Coyotes hunt in packs. Coyotes hunt mainly at night. A coyote lives about 4 years.	
Diet	Small mammals, small rodents, deer, and sheep	
Breeding	Coyotes may use a cave, dig a burrow, or use one stolen from a fox or other animal to make their den. The den is where they give birth to the pups. The female can have up to 12 pups at a time, but usually she has about 6.	 coyote
Group	Mammal	

Help Pages

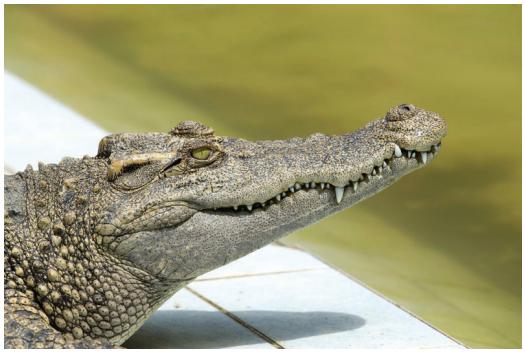
Animal Fact Cards (Mammals)

Dingo		
Facts	The dingo is found throughout Australia. It crosses large areas of the desert and open land looking for prey. The dingo lives in family groups and hunts its prey at night. Dingoes can live up to 14 years.	
Diet	Rabbits, small marsupials, kangaroos, and farm animals	 dingo
Breeding	The female has up to 8 pups at a time. She will use the same hidden location each year unless it's disturbed by predators.	
Group	Mammal	

Fox		
Facts	The red fox can adapt to most habitats. The red fox spends most of its day in the den or above ground in a hollow. Foxes are nocturnal animals and their nighttime vision is very good. The fox also has very sensitive hearing. Foxes have whiskers on both their legs and their faces which help them find their way.	
Diet	Earthworms, rabbits, birds, rodents, insects, and fruit	 red fox
Breeding	A litter of 4–5 cubs is typical for the red fox.	
Group	Mammal	

Help Pages

Animal Fact Cards (Reptiles)

Alligator		
Facts	The alligator spends time in and around the swamps and rivers (wetlands) where it makes its home. The tail is especially strong and is used to move its body through the water. Alligators weigh about 500 pounds.	
Diet	Insects, shrimp, tadpoles, frogs, young fish, snakes, and small mammals	 alligator
Breeding	The female lays her eggs in a nest made of mud and rotting plants. She lays about 25–60 eggs.	
Group	Reptile	

Gecko		
Facts	The gecko lives in a wide range of habitats: the tropical rainforest, parched deserts, and icy mountain tops. In the U.S., geckos are found in Southern California and Florida. They are also found in South America, the Middle East, Australia, Southeast Asia, and New Zealand. Many species are vividly colored and some even change colors. Most geckos hunt at night. Geckos do not hurt humans.	
Diet	Beetles, butterflies, crickets, cockroaches, any insect	 gecko
Breeding	The female lays 4–5 pairs of eggs between May and August. The shells are soft, but harden quickly. The eggs are stuck in cracks or under stones or bark.	
Group	Reptile	

Help Pages

Animal Fact Cards (Reptiles)

Iguana		
Facts	The green iguana is one of the biggest of all lizards. It makes its home in swamps, beaches, and grasslands, but lives mainly in tropical forests. Water is the iguana's safest habitat. It can also climb trees and leap between branches.	
Diet	Leaves, berries, fruit, and other plants	 green iguana
Breeding	The female lays her eggs in a tunnel, usually about a foot deep,in soil or sand. She lays from 25–60 eggs.	
Group	Reptile	

Garter Snake		
Facts	The common garter snake lives near water, such as a pond or stream. It can also be found in city parks and gardens. It is active by day and hides at night under a fallen tree or deep in a hole or crevice. In the winter, they gather in a common shelter. Most garter snakes have three light stripes and a checkered pattern.	
Diet	Frogs, toads, fish, salamanders, earthworms, small mammals, and birds	 garter snake
Breeding	The female garter snake gives birth to live young snakes. This is unusual for reptiles. The eggs stay in her body for about 3 months. She gives birth to about 60 young in a single brood.	
Group	Reptile	

Help Pages

Ecosystem Fact Cards

Desert

Deserts get less than ten inches of precipitation per year. They cover about 20% of the earth's surface. Some deserts get very hot during the day and very cold at night. Because of the extreme temperatures, many desert animals are nocturnal. These animals burrow under the ground or hide in the shade during the day. Many desert animals do not need to drink because they get the water they need from their food. Some desert animals include: camel, roadrunner, ostrich, gecko, spotted hyena, kangaroo rat, and the western black widow spider.

A common desert plant is the cactus. Instead of leaves, most cacti have spines or scales. The spines protect the cactus from animals that would like to eat the cactus for food and water. The Joshua tree is another plant that grows in the desert.

Joshua tree

saguaro cactus

Help Pages

Ecosystem Fact Cards

Deciduous Forest

Forests occupy one-third of Earth's land area. The temperate deciduous forest can be found in most of the eastern United States and a small strip of southern Ontario, Canada. The dominant plant species of this biome are broad-leaved deciduous trees. Trees such as oak, hickory, beech, maple, and elm live here. Evergreens, like pine, may also be found.

The deciduous forest has four distinct seasons. The leaves of deciduous trees change color and fall off in the autumn and grow back in the spring. Temperate deciduous forests get between 30 and 60 inches of precipitation a year.

The animals that live in the forest are squirrels, deer, foxes, rabbits, skunks, birds, raccoons, and black bears, to name a few.

deer

red fox

deciduous trees

Help Pages

Ecosystem Fact Cards

Freshwater

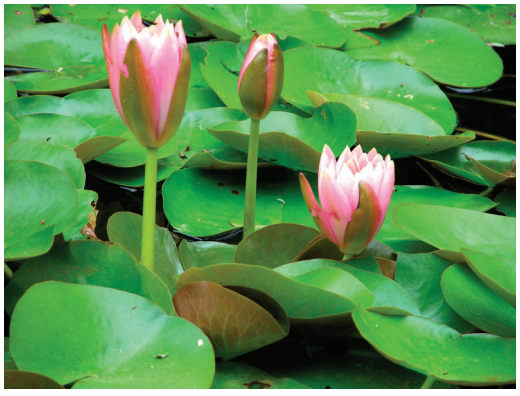
Lakes, streams, rivers, and ponds are examples of freshwater ecosystems. Freshwater is water that doesn't have a lot of salt in it. Freshwater ecosystems have many plants and animals. The plants and animals live in and around the water.

Some animals and insects of the freshwater ecosystem include dragonflies, water bugs, beetles, crayfish, snails, leeches, bluegill, bass, catfish, minnows, snakes, turtles, and frogs.

Cattails, water lilies, willows, pondweeds, duckweeds, skunk cabbages, and marsh marigolds are some of the plants that grow in the freshwater ecosystem.

turtle

cattails



water lilies

Help Pages

Ecosystem Fact Cards

Grasslands

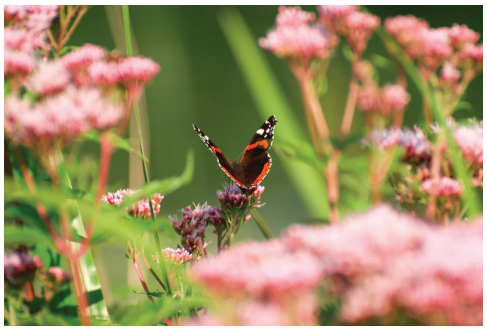
Grasslands are dry and usually flat areas of land that are hot in the summer and cold in the winter. They get more rain and snow than deserts, but less than some other ecosystems. Food crops tend to grow well in the grasslands. Due to the hot, dry summers, a large number of fires can occur. These fires cause great changes to the grasslands.

The main plant of the grasslands is grass, but bushes and wildflowers also grow there. There are very few trees and shrubs in the grasslands.

Some animals of the grasslands include the bison, coyotes, mice, rabbits, owls, hawks, and snakes. Many insects can be found in the grassland as well.

grasslands

wild flowers



bison

fire in grasslands

Help Pages

People in Science Fact Cards

Marie Curie

Marie Curie, a chemist and a physicist, was born in 1867 in Warsaw, Poland. She was the first woman to win a Nobel Prize. In fact, she is the only person ever to win two Nobel Prizes in different fields of science.

Marie was encouraged to study physical science by her cousin who worked at the Warsaw Museum of Industry. He allowed her to do experiments in physics and in chemistry on the weekends.

Together with her husband, Pierre Curie, Marie spent much time studying radioactivity; they were among the first to work with the element Radium. After her husband's death, she became the first female professor at the Sorbonne, in France.

Marie Curie died at the age of 67 from her years of work with radiation. One of her daughters, Irene, also became a scientist.

Marie Curie

Marie Curie and her husband Pierre in the laboratory

Help Pages

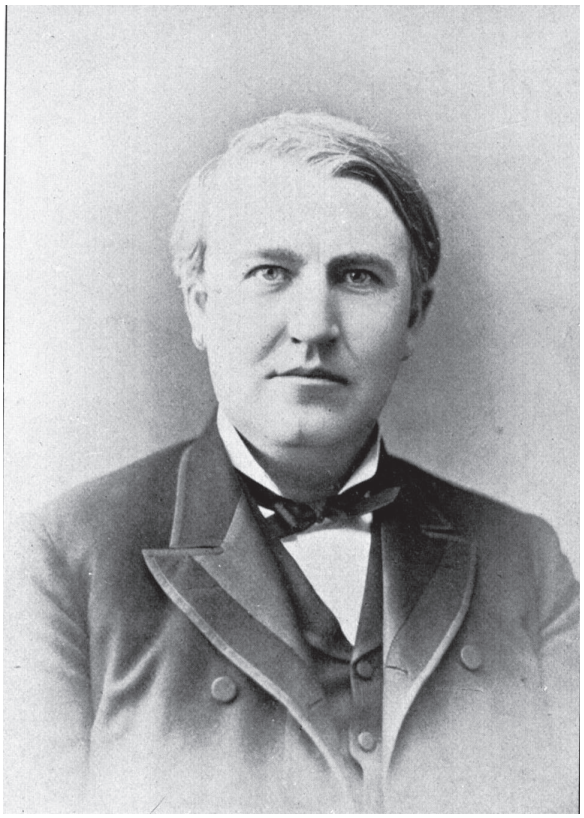
People in Science Fact Cards

Thomas Edison

Thomas Edison was born in 1847 in Milan, Ohio. He is one of the greatest inventors in history and is responsible for more inventions than any other inventor. Thomas Edison is best known for inventing the first long-lasting light bulb. Edison's favorite machine was the phonograph, which he invented in 1877.

Edison helped to develop the motion picture camera and the typewriter. He also improved the telephone system, which had been invented by Alexander Graham Bell.

In 1912, the Thomas Edison Studio produced the first talking motion picture. He died in 1931 at the age of 84.



Thomas Edison

lightbulb prototype

Help Pages

People in Science Fact Cards

Jane Goodall

Jane Goodall was born in England in 1934. She became famous because she is the world's leading authority on African chimpanzees. Jane was the first person to see that chimps eat meat and use tools. She helped people learn that chimpanzees have feelings.

At first, some didn't believe that Jane was a good scientist. She gave the chimps names instead of keeping track of them by numbers. But after she went to college and got a degree, people began to listen to what she had to say. Today, Jane Goodall speaks to groups about how they can help baby chimpanzees whose mothers have been killed or sold to circuses and zoos. Jane Goodall believes that everyone can make a difference. She continues to write and give lectures.

chimpanzees

Help Pages

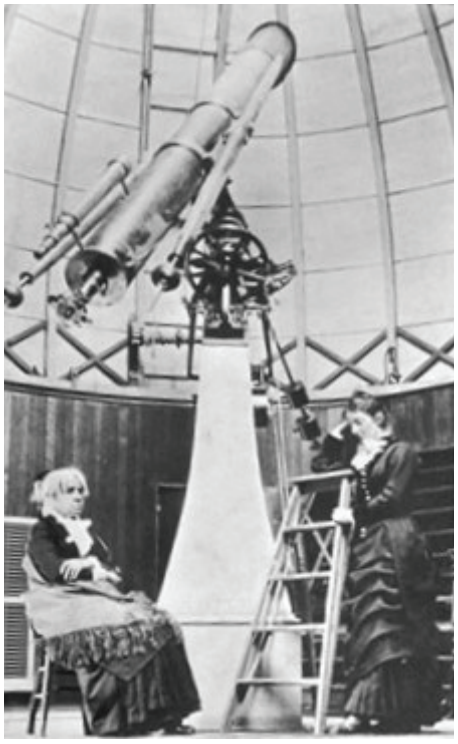
People in Science Fact Cards

Maria Mitchell

Maria Mitchell was born in 1818. She was the first American woman to teach astronomy to college students. She loved to watch the night sky, and she helped many other women become scientists.

The king of Denmark had offered a medal to anyone who found a new comet. One night, Maria saw a new comet streaking across the sky. She wrote a letter to the king, and he awarded Maria the medal. He also named the comet Miss Mitchell's Comet. Later, a crater on the moon was also named for Maria.

Maria was given a new telescope with money collected by other women interested in studying the heavens. Maria used her new telescope to study sunspots and other events in space. After her death in 1889, some friends and students formed the Maria Mitchell Association.

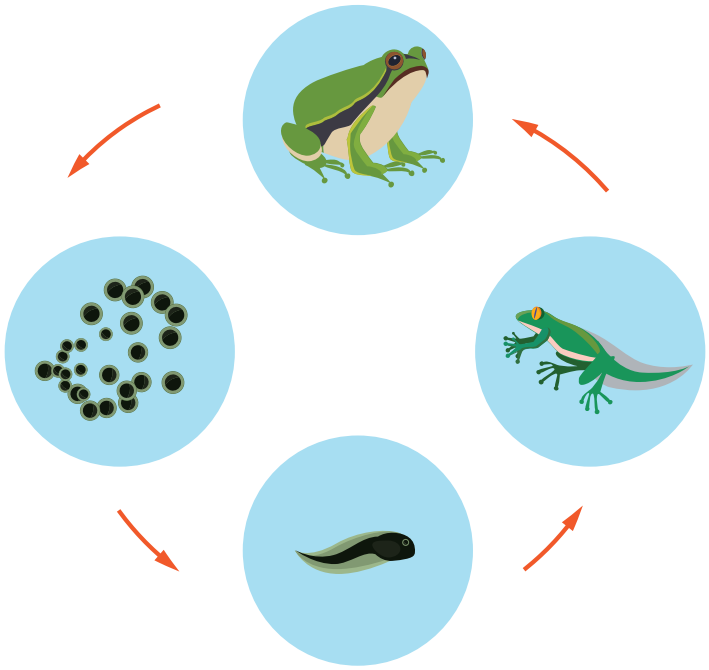


Maria Mitchell

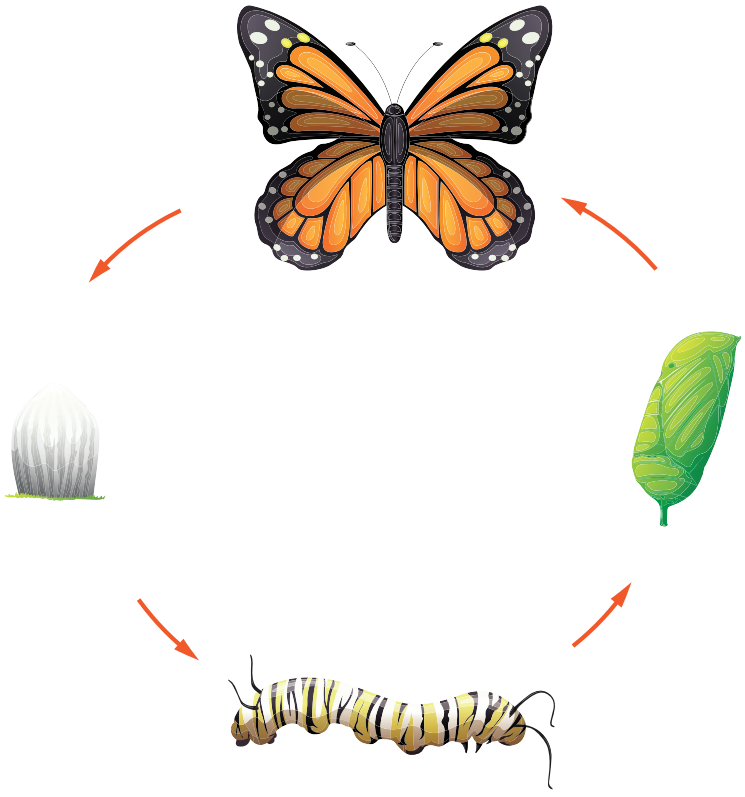
Mary Watson Whitney
(assistant to Maria Mitchell)

Help Pages

Stages of Frog Metamorphosis



Stages of Butterfly Metamorphosis



Help Pages

The Scientific Method

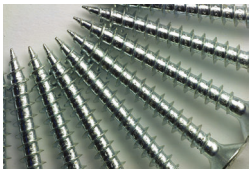
When scientists have a problem or a question, they use an organized plan called the **scientific method** to conduct a study, called an **investigation**. There are 5 steps for planning and conducting an investigation.

1. **Observing and Asking Questions** – In this step, you use your senses to gather information. You may begin to think of some questions about what you are observing. You may discover some things you don't know, but would like to find out more about.
2. **Forming a Hypothesis** – A hypothesis is a possible answer to one of your questions about what you observed. It is a logical guess. A hypothesis can be tested to see if it is correct and should be written in a complete sentence.
3. **Planning an Experiment** – An experiment is a test that is done to see if your hypothesis is correct or not. When you plan an experiment, you need to describe the steps, list the materials you will need, identify the variables, and decide how you will gather and record your data.
4. **Conducting an Experiment** – Follow the steps of the experiment you planned in step 3. Observe carefully and record your information accurately.
5. **Drawing Conclusions** – Look at all of the information you have collected. You can make graphs and charts to summarize the results. Write a conclusion and decide whether your hypothesis was correct. Share your results.

Help Pages

Simple Machines

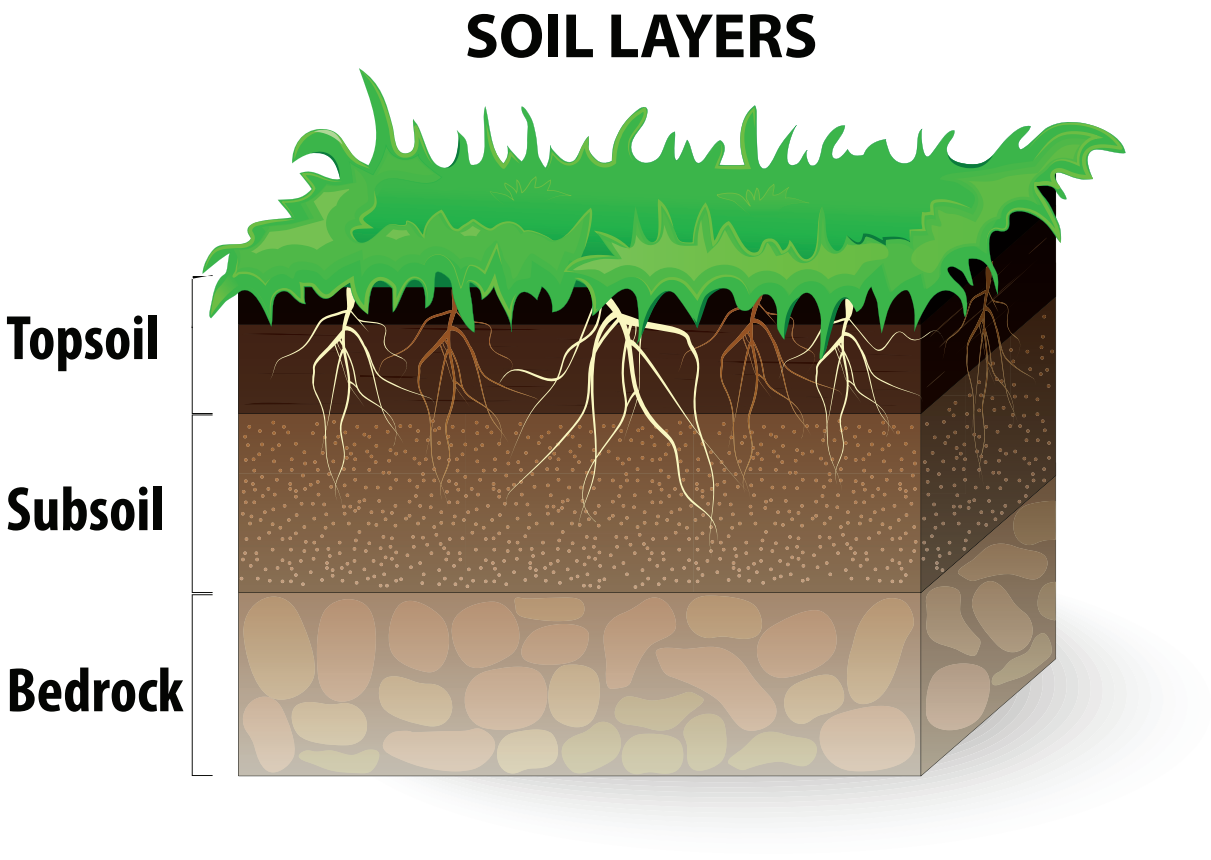
A simple machine is a tool with few or no moving parts that makes work easier. There are six simple machines.

Lever	A lever is a bar that pivots, or turns, on a fixed point. The fixed point is called the **fulcrum**. A broom is an example of a lever. Some other examples of levers are a **shovel**, a **rake**, your **arm**, and a **fishing pole**.	
Pulley	A pulley is made up of a rope that is fitted around a fixed wheel. It changes the direction of a force. You pull one end of the rope one way, and the other end moves in the opposite direction. Pulleys are found on **cranes**, **window blinds**, **sailboats**, and **flagpoles**.	
Wheel-and-Axle	A wheel-and-axle is made up of a small cylinder or an axle attached to the center of a larger wheel. The wheel and axle are connected so that they turn together. Some examples of a wheel-and-axle are a **screwdriver**, a **faucet**, a **doorknob**, and a **steering** wheel.	
Inclined Plane	An inclined plane makes lifting and moving things easier. A **ramp** is an example of an inclined plane.	
Screw	A screw is a simple machine that you turn to hold two or more objects together or to lift an object. A **screw** is like a nail with threads around it.	
Wedge	A wedge is made up of two inclined planes placed back to back. You use a wedge to force two things apart or to split one thing into two things. A wedge has one thin, pointed end and another wider end. Some examples of wedges are an **ax**, a **chisel**, and a **knife**.	

Help Pages

Soil Layers

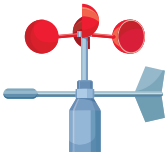
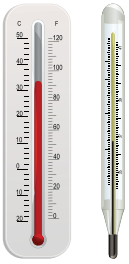
The top layer of soil is called **topsoil**. This rich topsoil contains a lot of humus. Plants grow best in topsoil. Topsoil is dark in color. The next layer of soil is called **subsoil**. Subsoil doesn't contain much humus. The soil particles are larger, and not as dark as topsoil. Subsoil contains small pieces of rock. The bottom layer of soil is called **bedrock**. Bedrock lies below the subsoil. This layer is solid rock.



Help Pages

Science Tools

We use tools to help us observe, measure, or study objects.

Anemometer		An **anemometer** is an instrument that measures the speed of the wind.
Weather Vane		A **weather vane** is an instrument that measures the direction of the wind.
Balance		A **balance** is a tool that is used to measure the mass of objects. When you place an object on one pan and another object on the other pan, you are able to compare the objects' masses.
Hand lens		This tool is used to magnify an object, or make it look larger. It is called a **hand lens**.
Microscope		A **microscope** is a tool used to magnify objects. Microscopes are helpful to see objects that are too small to see with only your eyes.
Thermometer		This tool is used to measure how hot or cold something is. It is called a **thermometer**.

Help Pages

Types of Animals

Animals are grouped by whether they have a backbone or not. Animals that do not have a backbone are called **invertebrates**. Animals that have a backbone are called **vertebrates**. The chart below will help explain the types of vertebrates.

Vertebrate Group	Description	Examples
Amphibian	Amphibians are vertebrates that spend part of their life in the water and part on land. Amphibians have moist skin.	frog, toad, salamander
Bird	Birds are vertebrates that have feathers, wings, and two legs. Birds breathe with their lungs and they lay eggs with a hard shell.	cardinal, robin, hummingbird, pelican, goose, duck, penguin
Fish	Fish are vertebrates that spend their whole lives in the water. Most fish are covered with scales. Most fish lay eggs and breathe with gills.	trout, salmon, catfish, bluegill, bass, carp, angelfish
Mammal	Mammals are vertebrates that have hair or fur. They use lungs to breathe. Most mammals do not lay eggs; they give birth to live young. Mammals also produce milk for their young.	human, whale, bat, deer, dog, raccoon, rabbit, squirrel
Reptile	Reptiles are vertebrates that have dry, scaly skin and lay eggs on land. Reptiles breathe with their lungs. Most reptiles hatch from eggs.	snake, alligator, iguana, lizard, turtle