

Truly Tall Trees



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Chapter One

Fact or Fairy Tale

Have you ever read the story “Jack and the Beanstalk”? It’s about a boy named Jack who climbs a tall, magical beanstalk. During his adventure, Jack learns that a giant lives in a house on top of the beanstalk. Since this story is a fairy tale, we know there aren’t really giants on top of beanstalks.



There may not be giant people, but what about giant trees and plants? Maybe there are no castles on beanstalks, but what about nearly **invisible** houses on trees? Sounds like a fairy tale, but these are actually **facts**. Before you find out about these tall trees and invisible tree houses, let's get scientific! Let's learn how plants and trees grow.



Chapter Two

Growing Big and Strong

To learn about how trees and plants grow, let's first think about how people grow. People need food, or **energy**, to live. We need **nutrients** and lots of care to grow. When we eat good foods, drink lots of water, get fresh air, and play outside, we get bigger, taller, stronger, and healthier.



In the same way, trees, plants, and flowers also need certain things to grow. A good way to know what plants need is to grow some. Here are some simple steps to get you started.

Step 1 Get a pot used for plants. Fill the pot with soil. Soil helps plants the same way that good food or vitamins help people. They keep our bodies healthy. Place seeds inside the soil. Your parents can help you buy seeds from a store.

Get soil



Fill pot with soil



Get seeds



Place seeds in soil



Step 2 Place the pot in sunlight by a windowsill. For indoor plants, getting enough sunlight is important. Without proper light, they become weak.



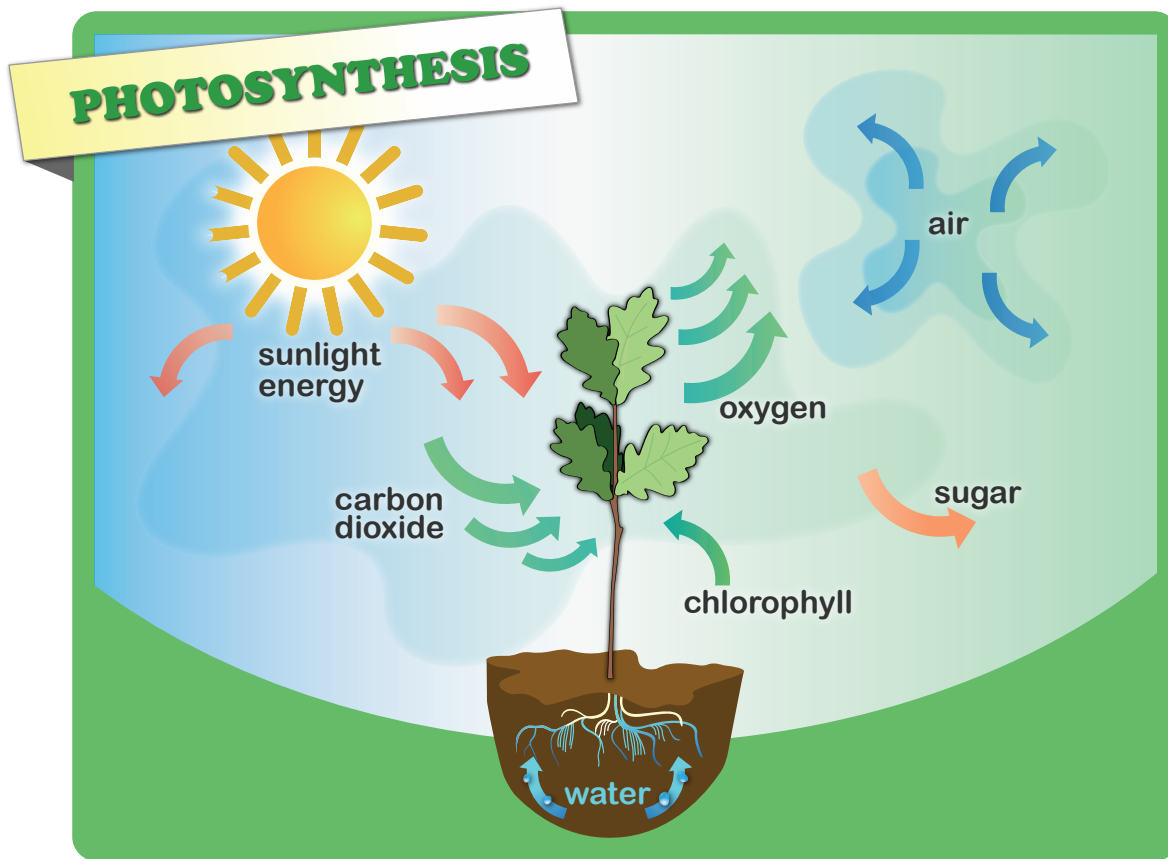
Step 3 Water your plant every day. Plants need water to survive. The amount of water needed is different from plant to plant, so you should read more about your plant at the library. Most plants need water when the soil looks dry.



Proper sunlight, water, and air help your plant get food. **Respiration** and **photosynthesis** are two scientific **processes** that help describe how plants and trees grow.

Respiration is when living things such plants, humans, and animals breathe in to get fresh air. They breathe out to clean their bodies. Plants take in something called **carbon dioxide** to make good clean air called **oxygen**. Leaves contain **chlorophyll**. It helps make the plant green. **Photosynthesis** happens when the chlorophyll mixes with sun, air, and water to make sugar. The sugar is the plant's food and energy.





We now know how indoor plants grow, but who takes care of the trees outside? That's where nature comes in. Nature **provides** soil and rainwater to keep trees healthy. Grown-up trees drop seeds or fruit pits from their branches. These seeds fall onto the soil. The soil, sun, and water turn the seed into a seedling. The seedling grows big **roots**, **stems**, and soon a **trunk**. Leaves start growing, too. With time, a plant or tree starts to grow. Then the whole thing starts all over again. This is called the life cycle of a tree.

Green Giants Around the Globe

Have you ever climbed a tree or sat by a tree during a picnic? They look very tall, right? Have you ever wondered what the tallest trees on Earth are? The California Redwoods are the tallest trees in the world.

Hidden away in the valleys of California, one tree beats them all. The Hyperion is 379 feet tall.

That's taller than the Statue of Liberty, which stands over 305 feet. The Hyperion was found in 2006. It is the world's tallest living tree. Some scientists say that there were even taller trees on Earth, but they are no longer alive. The most famous one was the Ferguson Tree in Australia. On February 21, 1872, it was measured at 436 feet tall. It fell during a fire.





Trees are not the only green giants on the earth. Plants can also grow very tall. Bamboo is an evergreen plant. Some bamboo can grow as fast as four feet each day. That's super fast. If people were to grow as fast as bamboo plants, we would be 1,456 feet by our first birthday. That's as tall as the Empire State Building in New York City! The tallest of the bamboo is *Dendrocalamus giganteus*. One measured over 137 feet. This type of bamboo lives mostly in northeast India and north Bengal.

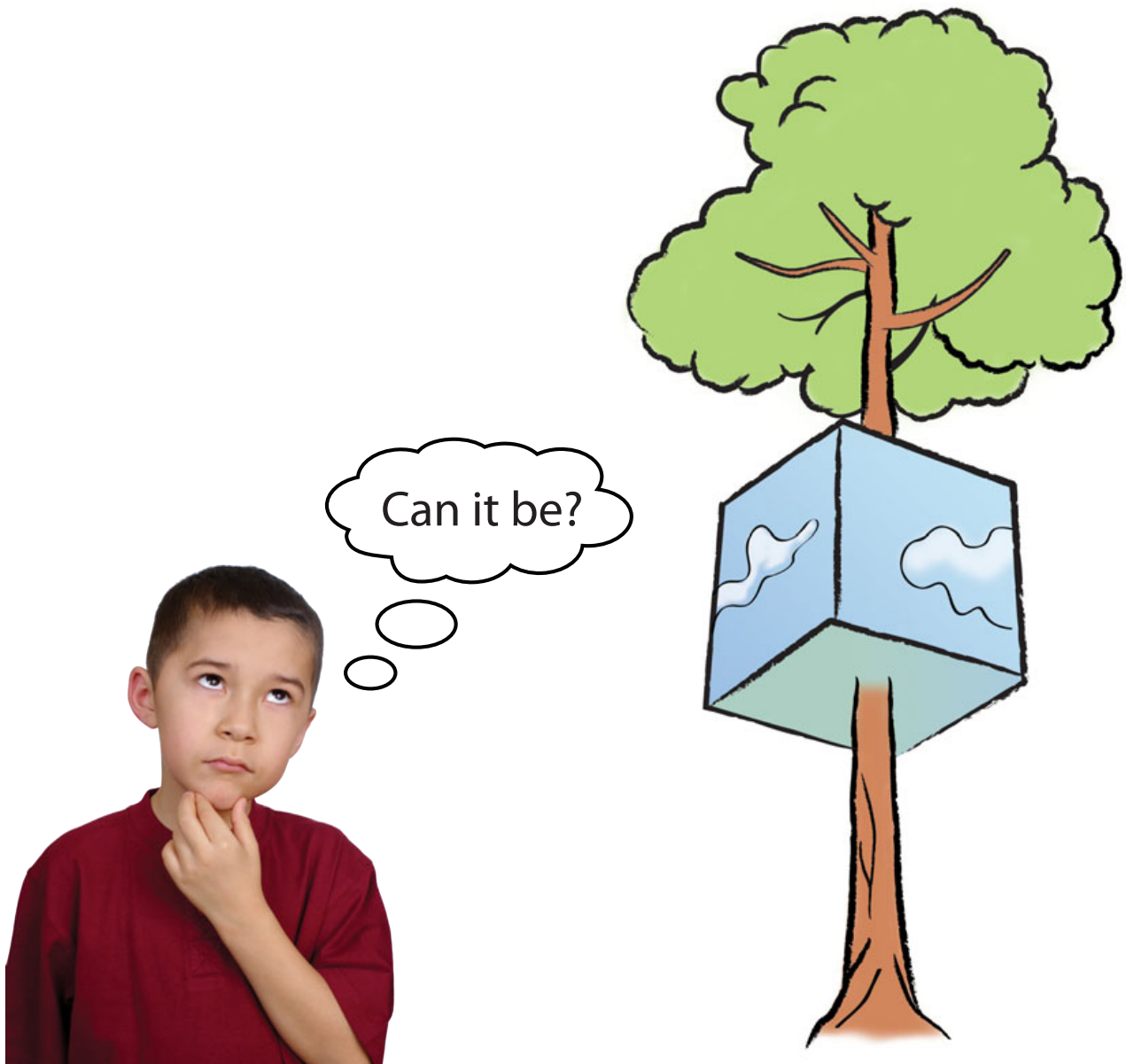


So we now know that there are really tall trees and plants, but have you ever heard of a really tall flower? Have you ever heard of sunflowers? The sunflower is a beautiful yellow flower that you may have seen in a garden or in pictures. A sunflower is usually small. We can hold it in our hand. In the Netherlands, one sunflower holds the record for being the tallest in the world. It measured over 25 feet!

Chapter Four

Hidden Up a Tree

Earlier we talked about facts and fairy tales. We decided that giants and houses on beanstalks were **fiction**. Similarly, the idea of an invisible tree house sounded **unrealistic** too.



Well, guess what! It's not **imaginary**. It's true! Architects Tham and Videgard have built an almost-invisible house around a tall tree trunk in Sweden. The four-square-meter cube is part of the "tree hotel." It's about 40 miles south of the Arctic Circle. The house is made of mirrors that cause the house to look almost invisible. The mirrors are the reason for this magical effect. They reflect everything in the forest, like trees, birds, and the sky. The mirror cube sounds like the perfect place to pretend that we're in a magic castle on top of a beanstalk!





Plant life is beautiful to look at, but it's also fun to learn how plants and trees grow so big. With invisible houses popping up in trees, the world of plants is getting even more exciting. Truly tall trees, plants, and flowers make our Earth an even more wonderful and interesting place to live.

Glossary

carbon dioxide: an odorless, colorless gas formed when breathing that is absorbed by plants during photosynthesis

chlorophyll: the green element that is found in plants

energy: power created by heat, light, water, electricity, food, and other natural resources

fact: a piece of information that is real, true, accurate, and proven

fiction: a made-up story; something told or written that is not fact

imaginary: not real; existing only in the imagination

invisible: impossible to see

nutrient: any substance that nourishes or feeds a life form

oxygen: a colorless, tasteless, odorless gas that is necessary for life; it forms about 21% of the atmosphere

photosynthesis: the process by which plants that contain chlorophyll use energy from sunlight to make carbohydrates from water and carbon dioxide in the air

process: a series of actions or changes that help something happen or take place

provide: to supply or give

respiration: the process of breathing by which a living thing gets the oxygen it needs to produce energy and get rid of waste, such as carbon dioxide

root: the leafless, usually underground, part of a plant that absorbs water and minerals, stores food, and holds the plant in place

stem: the main stalk of a plant that develops buds and shoots and usually grows above the ground

trunk: the main structural part of a tree apart from branches or roots

unrealistic: not true to life or nature

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