

## Trees Are Environmentally Friendly

**Subject Area:** Natural Resources

**Unit Title:** Conserving Energy

**Grade Level:** 4th & 5th grade

**Objectives:** To help students understand the limited and unlimited nature of energy sources. To help students understand how to conserve energy.

**Colorado Content Standards to be covered:**

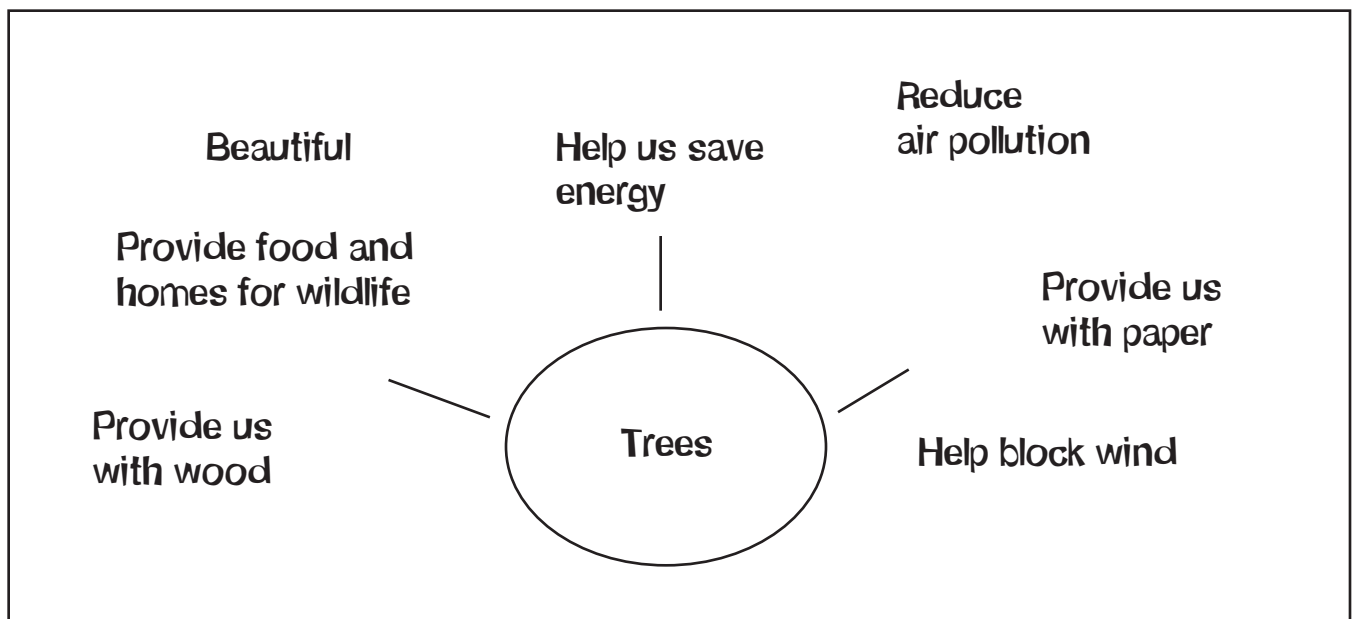
### SCIENCE

**Standard II - Physical Science:** Students know and understand common properties, forms, and changes in matter and energy.

**Standard IV - Earth and Space Science:** Students know and understand the processes and interactions of earth's systems and the structure and dynamics of earth and other objects in space.

**Standard V -** Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

**Anticipatory Set A:** Brainstorm with your students all the benefits of having trees. Post all the ideas on a concept map (see below.)



or

**Anticipatory Set B:** Draw a picture of your family's yard and include the trees you already have and then draw in areas where more trees could be planted. Visit with your parents about the importance of planting trees and suggest that you make it a family event!

**Input:**

You already know that trees are beautiful. They also provide homes and food for birds and animals, help us save energy and reduce air pollution. But did you know that “tree farmers” grow trees as a crop? These trees are used as wood for building homes and paper for books. Tree farmers also provide trees and seedlings to nurseries and landscaping companies as well as Christmas trees.

**Saving energy**

A big leafy shade tree helps keep us cool during the summer. If that tree is shading the whole house, that means we don't have to use as much electricity for air conditioning. Trees also help keep us warmer in the winter. Many schools have rows of evergreen trees around their buildings to block the cold winter wind.

**Reducing air pollution**

Carbon dioxide exists naturally in the air. Factories, cars and trucks put too much carbon dioxide into the air. Trees take in the carbon dioxide for their own food, then turn it into oxygen for us to breathe.

**You can help plant trees**

Planting a tree is a great way to have a big impact on the environment. You could organize a big planting event at your school, or you can help your parents plant a tree at home. You can keep new trees healthy by watering them regularly and adding mulch around the base in the springtime. You could even help rake up the leaves in the fall!

**Procedures/Activities:**

Start a “plant a tree” program at your school or encourage your students to plant a tree at home. This can be an Arbor Day activity.

**What to plant**

The trees we plant in our yards, parks and along streets are called saplings. Their size is somewhere between small seedlings and mature trees. If children were trees, they would be saplings. Saplings are usually ready to plant when we buy them. Their roots are well developed and contained neatly in a pot or in a ball of soil wrapped in burlap cloth. If there are any ropes around the tree and roots, they must be cut.

**Where to plant**

Planting is easy, but you must be very careful selecting the location for the tree. The location will be determined by the grown-up size of the tree. Look up. Are there any electric wires or lines overhead? If so, would the tree grow into the electric wires? Look down and around. Are there electric wires underground? It is very dangerous to dig a hole if there are buried electric lines. These are difficult to locate, but people at the electric and telephone companies know where the lines are buried. You can call the Common Ground Alliance at 8-1-1 to find out if any lines are buried where you want to dig. Look all around. Your tree needs room to grow. Is it too close to a house? Is it too close to another tree? Your tree will get water through its roots underground, so there should not be a lot of concrete or asphalt surrounding it.

**How to plant**

1. Before you dig, call your utility company or the Common Ground Alliance at 8-1-1 so you know where any underground wires are located.
2. Dig a hole about twice as wide as the root ball on the tree.
3. If the tree is in a pot, remove it from the pot and place it in the hole. If it has a ball of soil wrapped in burlap cloth, place it in the hole and cut any twine that is wrapped around the trunk. The top of the ball should be slightly higher than the surrounding ground surface.
4. Make sure the tree remains straight and fill the hole with the dirt you removed, pressing it down gently with your foot.

5. Place crunched-up bark (mulch) around the base of the tree to cover the entire area of the hole. This will help hold in moisture.
6. Water the tree thoroughly and then water it any time the soil begins to dry out. That's all there is to planting a tree.

**Future care**

Trees need special attention, so you should find out as much about your kind of tree as you can. Ask for care instructions at the nursery or garden center where you bought your tree. If you follow a few simple rules, you can have the fun of taking care of and watching your tree grow for years to come.

**Checking for Understanding:** At the end of this section choose one of the following for a quick check: ask the students to partner share and think, pair and share, do a quick 3 word write up as an exit slip, do a quick sketch or give each other a quick thumbs up or down to check for understanding. Determine the level of mastery for each student and provide individual remediation as needed.

**Closure (If this wasn't used as an anticipatory set):** Draw a picture of your family's yard and include the trees you already have, and then draw in areas where more trees could be planted. Research trees online that can be found in your climate. Look for trees that are hardy and have low water needs - find pictures and descriptions that will help with your plan. Visit with your parents about the importance of planting trees and suggest that you make it a family event!