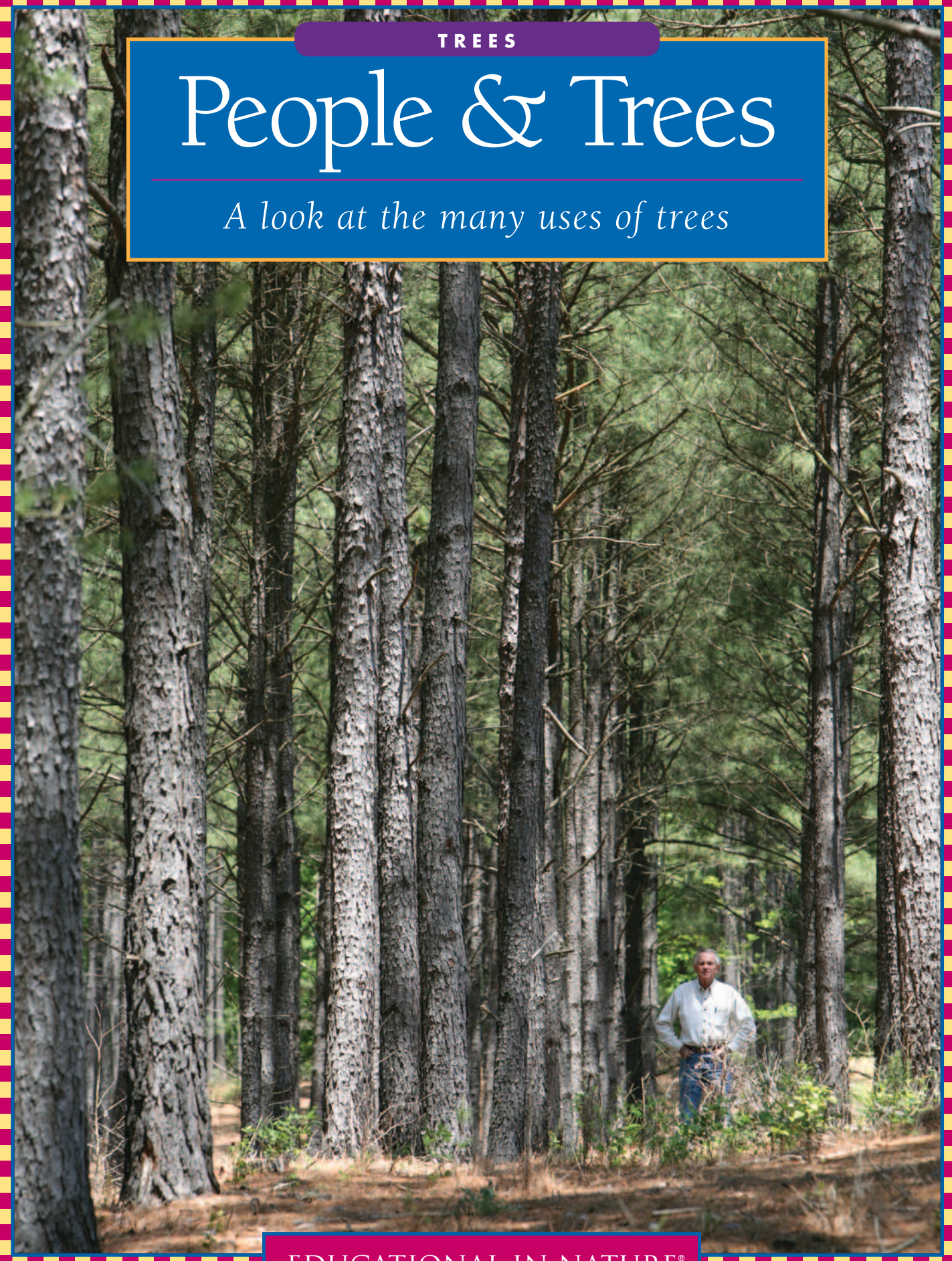
TREES

People & Trees

A look at the many uses of trees



EDUCATIONAL IN NATURE®

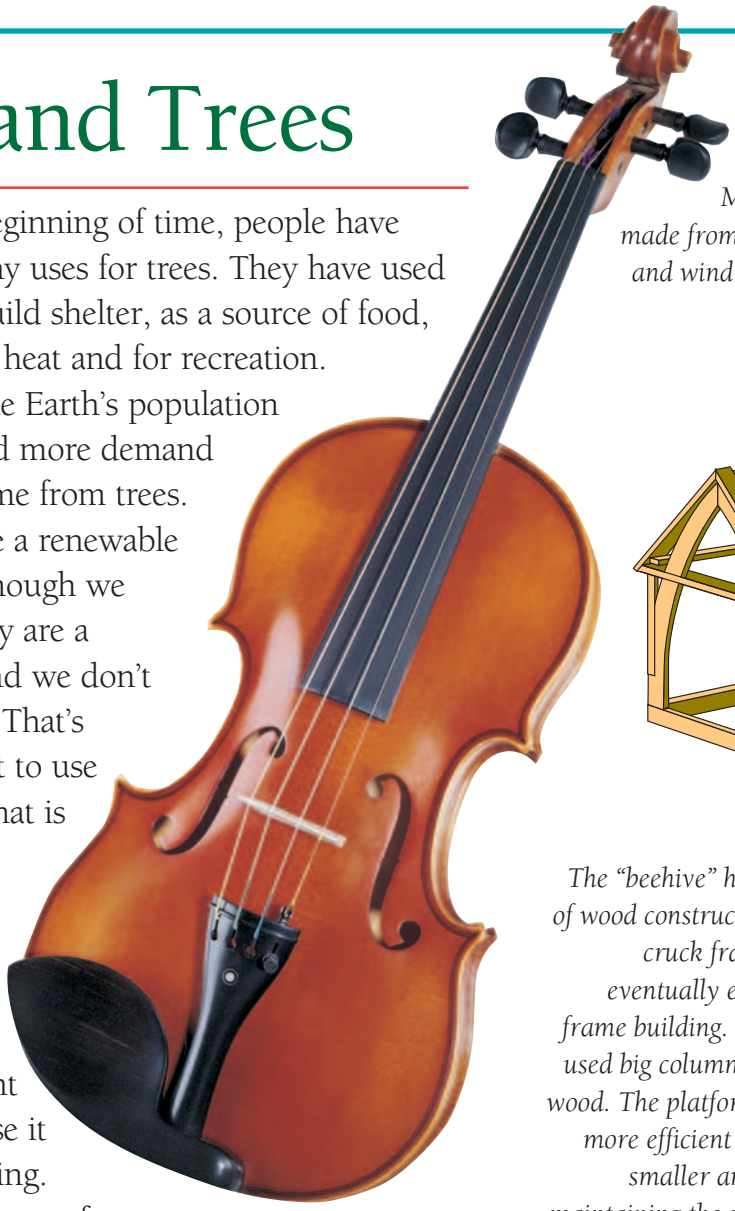
People and Trees

Since the beginning of time, people have found many uses for trees. They have used them to build shelter, as a source of food, to provide heat and for recreation.

An increase in the Earth's population has created more and more demand for products that come from trees. Fortunately, trees are a renewable resource. But even though we have many trees, they are a valuable resource, and we don't want to waste them. That's why it's so important to use every part of a tree that is harvested.

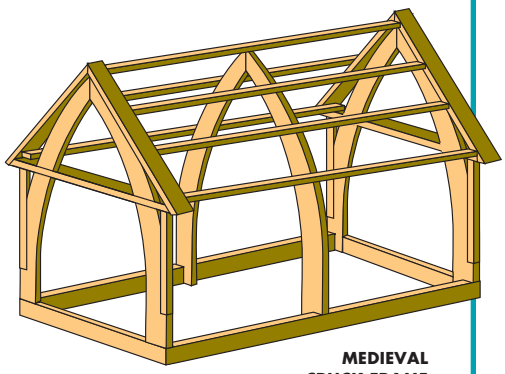
Over the years, people have found ways to use wood far more effectively than was ever thought possible. We even use it again through recycling.

We enjoy the beauty of trees, but trees are also valuable in many practical ways. By using as much of the tree as possible and by planting new trees we can be sure that we always will be able to enjoy the benefits that come from this valuable natural resource.



MUSICAL INSTRUMENTS

Many musical instruments are made from wood. Harps, pianos, violins and wind instruments like the recorder all use wood.



MEDIEVAL CRUCK FRAME

SHELTER

The "beehive" hut was probably the first type of wood construction. Then came the medieval cruck frame. This type of construction eventually evolved into the post and truss frame building. These older types of buildings used big columns and beams made from solid wood. The platform frame we use today makes more efficient use of the tree because it uses smaller and lighter materials while still maintaining the strength and support we need.

NEW HOME CONSTRUCTION

ANIMALS AND INSECTS

Trees provide shelter and food for many animals. Squirrels eat nuts. Beavers eat the soft inner bark of trees and use trees to make dams. Birds eat seeds from trees. Even insects feast on trees!

THE METALLIC WOOD-BORING BEETLE BURROWS INTO DECOMPOSING LOGS

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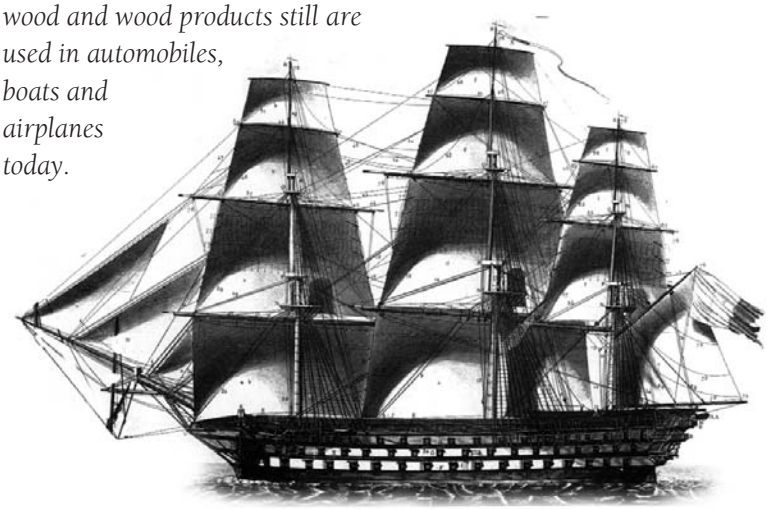
RECREATION

Trees offer shade on a hot sunny day and make our surroundings more beautiful. Hunting, hiking, fishing and camping are some popular uses of the forest.

TRANSPORTATION

Trees have played a big role in transportation. For many centuries, the seafaring people of the world used wood to make their ships. Native Americans used trees to make rafts and canoes. Horses pulled wooden carts so people could move heavy objects. Families traveled west in covered wagons made from wood. Although you don't always see them, wood and wood products still are used in automobiles, boats and airplanes today.

EVEN THE FIRST AIRPLANES WERE MADE FROM WOOD!



FOOD

Trees produce an abundance of fruits and nuts. Chocolate, coffee, maple syrup, many spices, and olive, almond and coconut oils also come from trees.

TOOLS

People all over the world have used wood from trees to make utensils, baskets, tools, dishes and devices for hunting and fishing. Even modern tools, like screwdrivers, use chemicals from wood to make the hard plastic handles.

Did you know?

- Veneering — applying thin strips of wood on decorative objects — is an ancient Egyptian craft. The throne from the tomb of Tutankhamen (King Tut) is made of a cedarwood veneer overlaid with ebony and ivory.
- The Chinese first made paper as we know it today from a mixture of mulberry bark, rags and hemp. But it wasn't until the 18th century that we recognized wood fiber as a good source of paper. The French scientist Rene de Reaumur got the idea from observing a wasp building a nest from a twig it mixed with its body fluids to create pulp.
- Rubber got its name from the 18th-century scientist Joseph Priestley because he observed that it rubbed out pencil marks. Rubber was used by the people of Belize in Central America for ball games in the 11th century.
- Some Native Americans record the history of their tribes by carving totem poles with illustrations of their experiences and adventures.

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Technology helps people use all of the tree.

Before the technology we have today, only about half of most trees was used to create products. Now almost all of the tree can be used.

Computer technology helps us make the best use of each log. Lasers scan a log to determine where it will be cut to get the most lumber or veneer. Using very sharp saw blades or knives to cut the wood creates less sawdust.

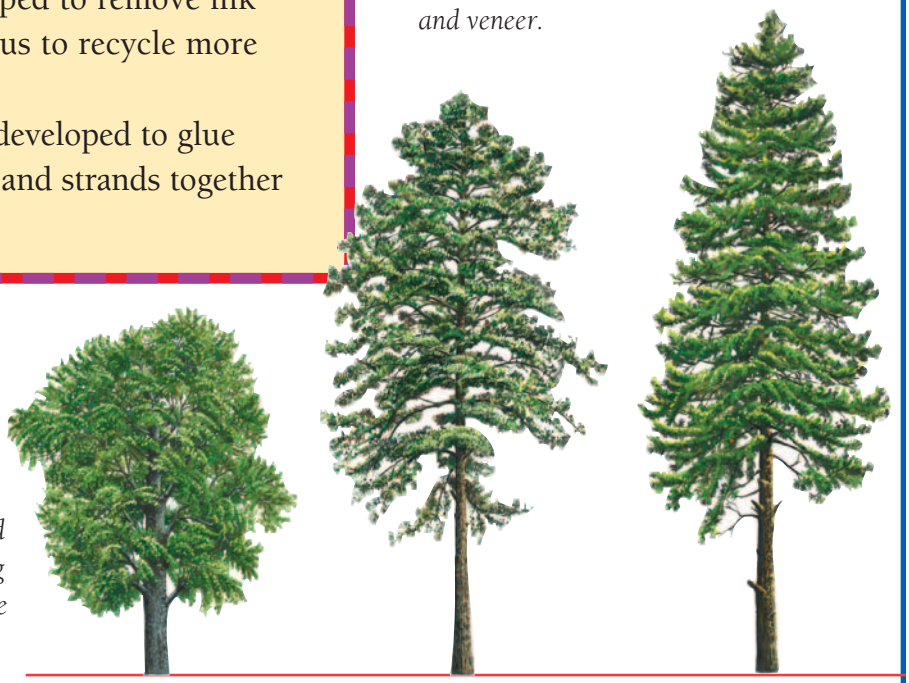
Technology has been developed to remove ink from paper better. This allows us to recycle more recovered paper.

Special adhesives have been developed to glue sawdust, wood shavings, flakes and strands together to make wood panels.

WE USE DIFFERENT TREES FOR DIFFERENT THINGS

Each kind of tree has characteristics that make it different from other trees. This makes it useful for many types of products.

- *Some trees, like Douglas fir, white ash and loblolly pine, are very strong and are used for building products.*
- *Cedar has a slow rate of decay and resists insects. This makes it useful for outdoor decks and fences.*
- *Black walnut is hard, stiff and looks beautiful when finished. That's why it's used for cabinets, furniture and veneer.*



RED MAPLE | LOBLOLLY PINE | DOUGLAS FIR

ENGINEERED WOOD PRODUCTS

New types of building products are being developed all the time to make more efficient use of our trees. Engineered boards such as oriented strand board, fiberboard and particleboard are manufactured from young fast-growing trees or use wood fiber left over from making other products.

PLANTING NEW TREES

Trees are a renewable resource. People help make sure there will be enough trees for the future by growing seedlings in nurseries and planting them. Many species, however, are not planted because they grow back best from seeds or by sprouting from stumps.

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Everything but the Shade

Waste not, want not

Once a tree is harvested, almost all of it is used. Waste generated from making one kind of product is often recovered and used to make another product.

LOGS

A log is first debarked and cut into different lengths, depending on how it will be used.

BARK

Bark removed from a log can be burned in a boiler to make steam that provides energy. Bark also can be processed to make decorative landscaping material or potting soil.

PLYWOOD

Veneer is made two ways. Decorative woods like walnut and cherry, are sliced one sheet at a time from the face of a log that has been made into a square. These veneers are often used to make furniture. Other woods, such as pine and fir, are peeled. A log is put on a lathe and spins against a long knife. A thin strip of wood veneer is shaved off just like the peel is cut from an apple, leaving a round core of wood several inches in diameter. Sheets of this veneer are glued together at right angles to each other to make plywood.

SAWDUST AND SHAVINGS

Sawdust and shavings are recovered and used to make products such as particleboard.

LUMBER

Cores are made into small dimension lumber that is used in construction or for landscape timbers for gardens.

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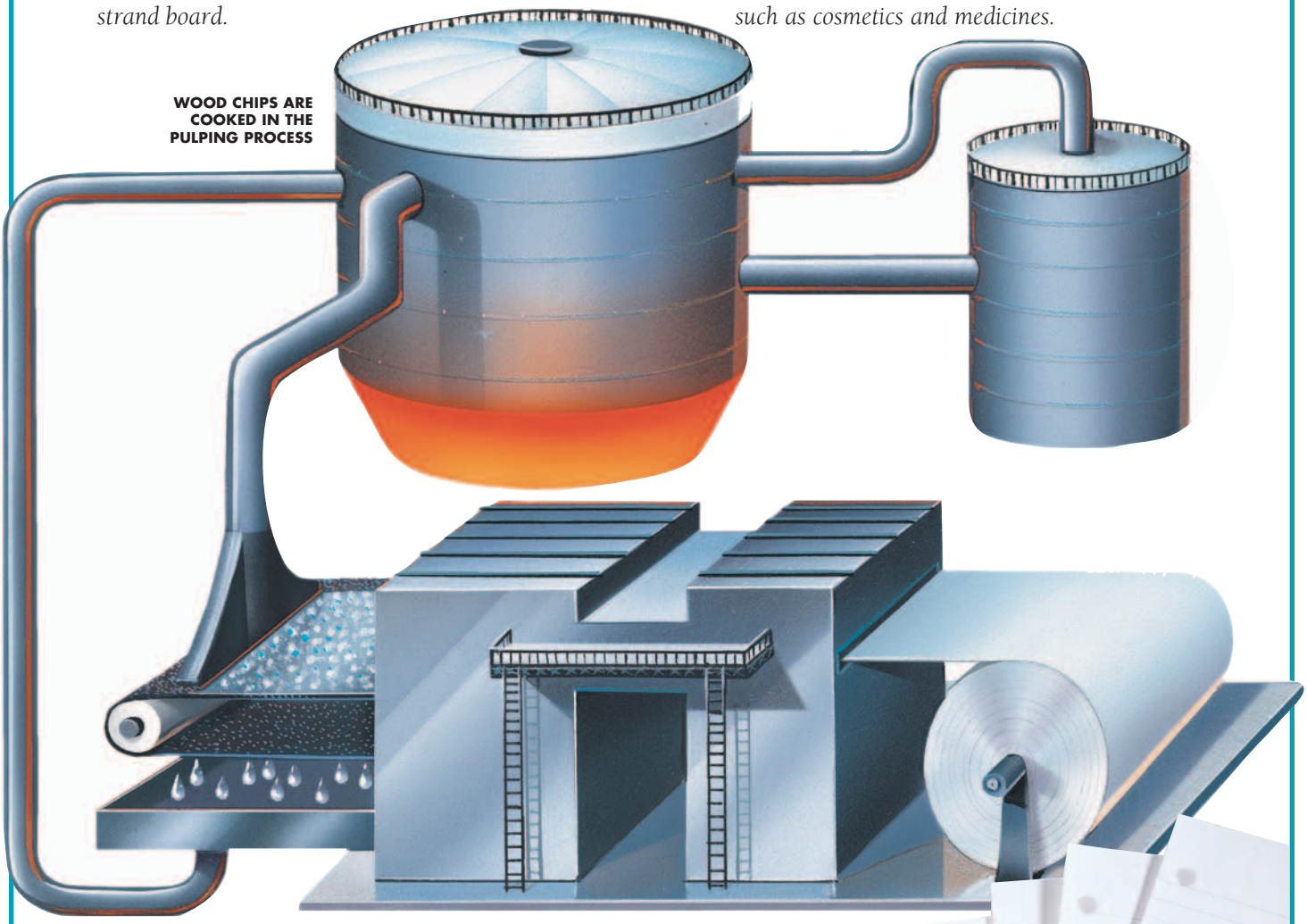
Pulp and Papermaking Process (Simplified)

CHIPS

Small logs as well as small pieces of wood that cannot be used to make lumber or plywood are chipped and used for pulp and paper products or for engineered wood products like oriented strand board.

LIGNIN

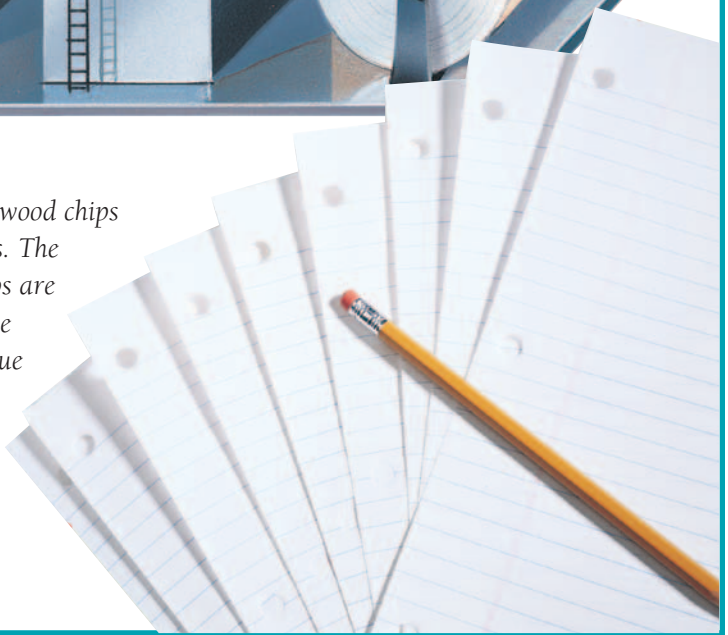
Lignin is the glue that holds wood fibers together. This sticky chemical substance is removed while making pulp for paper. At many mills it is burned to generate energy to run the mill. At some mills it is recovered and used to make other products such as cosmetics and medicines.



WOOD CHIPS ARE COOKED IN THE PULPING PROCESS

PAPER

Paper is made from small trees and wood chips left over from making other products. The first step is to make pulp. Wood chips are cooked with chemicals to separate the fibers from their natural chemical glue called lignin. The pulp, which is mostly water, is put on a screen to let the water drain away. The fibers remain to form a sheet of paper that is dried and put on a roll.



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People & Trees

ACTIVITIES & Extras

What Am I?

1. I'm a sticky substance that comes from trees and can be found in medicines and food.
2. I'm made from the parts of trees that would otherwise go to waste and used to make many products, including paper and particleboard.

answers: 1. lignin 2. wood chips and shavings

WORDS TO KNOW

cellulose - wood fiber

lathe - machine that holds a log in place while it is peeled for veneer

lignin - a glue-like chemical that holds a tree's wood fibers together

resin - chemical used to glue wood veneer or wood chips and shavings together

veneer - thin sheets of wood

PLANT A TREE

To plant a tree, follow these steps:

1. SELECT A TREE that grows in your area. You can buy a tree or you might find one growing in the forest that you can dig up and replant. (Make sure you get the landowner's permission.)

2. PICK A SPOT FOR YOUR TREE. Most trees like plenty of sun and water, but some will grow in the shade. Remember, your tree is going to grow up and out, so don't plant it too close to a building or other trees.

3. DIG A HOLE that is approximately 12 inches wider and 12 inches deeper than the root ball.

4. LOOSEN THE SOIL at the sides of the hole by cutting it with a shovel. This will allow the roots to grow into the surrounding soil.

5. MIX THE SOIL that was removed from the hole with peat moss or another organic material to make it soft and ready to absorb water.

6. PUT PREPARED SOIL (around 12 inches) back into the hole. Pour water into the hole until it makes a puddle.

7. PLACE THE TREE INTO THE HOLE. The top of the root ball should be at, or just above, ground level. Make sure the stem is straight, then replace the soil around the tree.

8. PACK THE SOIL LIGHTLY with your foot and water until a puddle forms on top of the soil.

9. APPLY COMPOST to the ground around the base of the tree. Watering may be necessary if rainfall is limited, especially during the first four weeks after planting. If so, water twice a week.

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