Celebrate Earth Day
Tautphaus Park
April 27

Everyone Needs Trees!

Idaho Falls Earth Day Celebration
Sponsored by
Idaho Falls Earth Day Committee
Post Register Newspaper in Education
We use trees every day! Take 2 minutes to write down as many things you can think of that comes from trees!

In the next pages we will explore how our world depends on trees, not only as a source of valuable resources, but also for the ecological benefits they provide.

- Trees produce oxygen, which we need to breathe
- They store carbon dioxide from our air
- They produce timber, firewood and paper
- They provide a habitat for wildlife
- They prevent soil erosion
- They provide cooling shade
- Nuts and fruits come from trees
- They boost our health and well-being
- They provide livelihoods for many people

As you can see, trees have so many amazing properties that help our world, while making life better at the same time.
This riddle mentions a few major parts of a tree: bark, trunk and rings. Have you ever wondered what the different parts of a tree do?

Leaves:
Leaves are the part of the crown of a tree. They are the part of the tree that converts energy into food (sugar). They contain a very special substance called chlorophyll; it is chlorophyll that gives leaves their green color.

Trunk:
The trunk of the tree provides its shape and support and holds up the crown. The trunk transports water and nutrients from the soil and sugar from the leaves. The trunk is made up of five different layers, including bark, cambium, heartwood, phloem and xylem. Each year, as a tree grows, it adds a light ring of new growth to its trunk.

Roots:
The roots are the part of the tree that grows underground. Trees have a lot of roots; the size of the root system is usually as big as the part of the tree above the ground. This is necessary because the roots help support the tree. Besides keeping the tree from tipping over, the main job of the roots is to collect water and nutrients from the soil and to store them for times when there isn't as much available.

Crown:
The crown is made up of the leaves and branches at the top of a tree. The crowns of trees come in many shapes and sizes!

Branches and Twigs:
The branches and twigs provide the support the leaves. They also serve as conduits for water and nutrients and as storage for extra sugar.

Tree Facts
A tree can be a natural air conditioner. The evaporation from a single tree can produce the cooling effect of 10 room size air conditioners operating 20 hours a day.
Use this page to gather clues about trees in your neighborhood. Are they all the same kind?

Note: The tree will be either conifer or broadleaf. Check only one set of responses.

- **Conifer** (cone bearing)
- **Broadleaf** (deciduous)

### Leaves (Conifer)
- **Needle**
- **Scale**

**Shape:**
- _____ round
- _____ flat
- _____ triangular
- _____ square

**Number in Bunches:**
- _____1
- _____2
- _____3
- _____4
- _____5
- _____6 or more

*Needles are long and thin. Scales are tiny overlapping modified leaves that can be pulled apart.*

### Leaves (Broadleaf)

**Attachment:**
- **Simple** (single blade)
- **Compound** (more than 1 blade)

**Leaf Margins (edges):**
- _____ Lobed
- _____ Entire (smooth)
- _____ Toothed

**Leaf Shape:**
- _____ Triangular
- _____ Lance shaped
- _____ Cross shaped
- _____ 5-pointed star
- _____ Oval shaped
- _____ Lobed
- _____ Egg shaped
- _____ Heart shaped
- _____ Fan Shaped
- _____ Other shape (draw below)

### Tree Shape
- Tall and Thin (Columnar)
- Triangular
- Oval
- Round
- Broad

### Bark
- **Color:**
  - Brown
  - Gray
  - White
  - Reddish
  - Black

- **Texture:**
  - Smooth
  - Rough
Every living thing goes through a set of changes called a life cycle. A tree begins its life as a seed. The seed grows and changes until it becomes a fully grown tree. Some trees grow faster than others, but they all need several years to become mature. Mature trees are able to make seeds. When these seeds begin to grow, a new life cycle begins.

**LIFE SPAN**

A life span is the length of time a tree lives. Trees are among the oldest living things on earth. The average age of a tree depends on its species. Some of the shorter-lived trees include palms, which can live around 50 years. One the other hand, Giant Sequoias can live over 3,000 years and at least one Bristlecone Pine is estimated to be almost 5,000 years old.

**ACT OUT THE LIFE CYCLE OF A TREE**

- You're a seed! (Curl up in a tight ball.)
- You've sprouted! (Uncurl and kneel.)
- You've grown a branch! (Stick up one arm with fist clenched.)
- You've grown another branch! (Stick up the other arm.)
- You've grown lots of leaves! (Wiggle your fingers.)
- You've grown tall! (Stand up with feet together.)
- You've spread out lots of roots! (Spread feet apart.)
- You've grown lots of little roots! (Wiggle your toes.)
- You've been attacked by insects and fungi! (Start scratching all over.)
- You've been hit by lightning! (Make a loud noise.)
- You've become a home for wildlife in your old age! (Smile and sigh.)
- Woodpeckers peck into your dead wood! (Make a hammering noise and vibrate.)
- You blow down in a storm! (Make a creaking sound and fall down.)
- A new seed sprouts from your rotting wood! (Stick up one arm while lying down.)

Can you think of other events that might affect a tree’s life cycle?
As with all living things, trees have a life cycle. What do trees begin as? Seeds. The seeds will be different depending on what kind of tree it is. Some seeds come from the tree’s fruit while others are inside nuts or cones. Some seeds are big. Some are quite small. Seeds are produced by the male and female parts of the tree and with the right amount of sunlight, water and soil, they will begin to grow.

Seeds have three main parts
- Testa or Seed coat: The outer covering of the seed which protects the internal parts.
- Cotyledon: The seed leaves. The cotyledon absorb the food from the parent plant and stores it for the embryo.
- Embryo: Embryos are the baby plant inside the seed. The plumule (shoot) and radicle (root) make up the embryo of the plant.

Germination occurs in following stages:
1. The seeds absorb water through the seed hole. The cells of the embryo start dividing and increasing in size.
2. The seed coat breaks open and the root (radical) sprout and grows downwards.
3. The shoot (plumule) start growing upwards, which later produces stem and leaves.
4. When the seedling grows green leaves, it starts making its own food.
5. By this time, cotyledons dry up and fall. The seedling then develops into a new plant.

**Germinate a Seed**
Germination means the development of a seed into a new plant. All seeds do not germinate. Only those which get suitable conditions grow into new plants. The conditions necessary for a seed to germinate are:
- Air to breathe.
- Water to make the seed coat soft. This enables the baby plant to break the seed coat open and come out.
- Warmth to make its cells active.

**Materials:** four shallow dishes, cotton balls, bean seeds

Place a cotton ball on each of the four shallow dishes. Place a 3 seeds on each of the cotton-balls. Follow the steps below for each dish.
- Dish 1: Keep this dish in a place where it gets an adequate amount of air and warmth. The cotton should be moist.
- Dish 2: Place the second dish in the refrigerator and keep the cotton moist.
- Dish 3: Place the dish where it can get an adequate amount of air and warmth. Do not wet the cotton.
- Dish 4: Place it where it can get adequate warmth, but keep the seed and the cotton covered with water so the seed doesn’t have access to air.

Dish 1 had air, warmth and water. Dish 2 had air and water. Dish 3 had air and warmth. Dish 4 had warmth and water. Which seeds germinated?

**Tree Facts**
Just like humans, trees need water to survive—and they drink a lot of it. In a single day, a large tree can consume 100 gallons of water out of the ground and discharge it into the air as oxygen and water vapor.
**Seedling**
Once above the ground, the shoot becomes a seedling. This stage lasts until the tree is about three feet tall.
- The soft green stem begins to harden, change color, and develop a thin protective bark.
- Leaves or needles develop and continue to search out light.
- The root grows and branches down and out resembling an up-side down underground tree with a flattened top.

**Sapling**
A sapling is a small tree over 3 feet tall. The trunk is still flexible and the bark is usually smoother and thinner and than in a mature tree. A sapling doesn’t produce flowers or fruit and isn’t mature enough to reproduce.

**Mature**
Once a tree is producing flowers or fruits, it stops being classed as a sapling and enters the mature stage. During this stage in the cycle, each tree will grow as much as its species and site conditions will permit.

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**Measure the Height of a Tree Using Trigonometry**

**Materials:** Piece of paper and a tape measure.

1. Fold a piece of paper in half so that it forms a triangle. If the paper is rectangular (not square), you’ll have to make a rectangular sheet of paper into a square. Fold one corner over so it forms a triangle with the opposite side, then cut off the extra paper above the triangle. You should be left with the triangle you need. The triangle will have one right (90 degree) angle and two 45 degree angles.

2. Hold the triangle in front of one eye by holding a corner opposite from the 90° right angle (see the above picture), and point the rest of the triangle toward you. One of the short sides should be horizontal (flat), and the other should be vertical (pointing straight up). You should be able to look up along the longest side by raising your eyes. The longest side, the one you’ll be looking along, is called the hypotenuse of the triangle.

3. Move back from the tree until you can sight the top of the tree at the top tip of the triangle. Close one eye and use the other to look directly along the longest side of the triangle, until you see the exact top of the tree. You want to find the point where your line of sight follows the longest side of the triangle to the very top of the tree.

4. Mark this spot and measure the distance from it to the base of the tree. This distance is almost the full height of the tree. Add your own height to this, since you were looking at the tree from the height of your eyes off the ground. Now you have the full answer!
Have you ever imagined what the world would be like without trees? The benefits of trees extend beyond their beauty. Trees planted today will offer social, environmental, and economic benefits for years to come.

- Trees clean the air
- Trees provide oxygen
- Trees cool us
- Trees save water
- Trees help prevent water pollution
- Trees help prevent erosion
- Trees provide food
- Trees provide pr wood and other products
- Trees provide habitat for wildlife

Every year, 1 large tree

- Retains 1000 gallons of rainwater
- Generates 260 pounds of oxygen
- Absorbs the carbon dioxide of a car driven 500 miles
- Saves $32 in summertime air conditioning
- Provides a home for 103 species of wildlife

www.ifeartday.com
WE NEED TREES FOR CLEAN AIR!

Each day you breathe about 35 pounds of air. You take over 20,000 breaths each day and breathe in 2,860 gallons of air! In your lifetime, you may take about 635 million breaths! Humans can live only a few minutes without air; but we usually don’t think about how important clean air is.

Air pollution comes in many forms. It is usually found as a gas or as tiny particles in the air. Air pollution can also be found in a liquid form, called acid rain. Acid rain is the result of gases and liquids mixing in the air. There are also many examples of solid particles in the air. They include: soot from smokestacks, dirt stirred up by cars on gravel roads and dust from bulldozing or mining. Mother Nature also produces her share of “natural” air pollution. Erupting volcanoes pollute the atmosphere with toxic fumes. Smoke from forest fires produces harmful particles and lightning generates ozone, a gas which is harmful to breath.

Trees remove air pollution in two ways. Some pollutants get stuck to the plant surface itself. That’s just a temporary removal, as wind can shake the pollutants back into the air, and rain can wash it down into the soil. The primary way in which trees remove pollution is by sucking up the gases through tiny openings on leaves called stomata, which literally means “mouths.” That’s especially true for ozone, sulfur dioxide, and nitrogen dioxide.

Collect Some Air Pollution
Materials: Sticky tape, scissors, copy of worksheet below, string, hole punch, magnifying glass, marker
1. Cut the four holes in the strip as marked.
2. Using a hole punch, make a hole in the top and tie the string into a loop.
3. Cover one side of the strip with clear tape so that the holes are covered on one side. DO NOT TOUCH THE STICKY SIDE OF THE TAPE SHOWING THROUGH THE HOLES.
4. Select different sites around the school to hang the Sticky Collectors. The collectors should be placed where they can hang freely, not touch other surfaces.
5. After a week, collect the Sticky Collectors and analyze them. What did you find?
Can we see air pollution? How do we know air pollution exists?
WE NEED TREES FOR OXYGEN!

When you get hungry, you grab a snack from your fridge or pantry. But what can plants do when they get hungry? They make food for themselves!

Plants are called autotrophs because they can use energy from light to synthesize, or make, their own food source. Many people believe they are “feeding” a plant when they put it in soil, water it, or place it outside in the Sun, but none of these things are considered food. Rather, plants use sunlight, water, and the gases in the air to make glucose, which is a form of sugar that plants need to survive. This process is called photosynthesis and is performed by all plants, algae, and even some microorganisms.

After the sugar is produced, it is then broken down by the mitochondria in the plant cells into energy that can be used for growth and repair. The oxygen that is produced is released from the same tiny holes through which the carbon dioxide entered. Other organisms, such as animals, use oxygen to aid in their survival. It is proposed that one large tree can provide a day’s supply of oxygen for up to four people.

**Photosynthesis**

\[
\text{Carbon dioxide + Water} \rightarrow \text{Glucose + Oxygen}
\]

When leaves carry out photosynthesis, they give off a gas. This gas usually passes unseen into the atmosphere. However, when underwater plants are placed in the light, the gas bubbles up from their leaves. You can collect and identify this gas.

**Materials:** test tube, jar, wide-necked funnel, wooden skewers, pondweed

1. Fill a sink with water, submerge the jar, and put the pondweed inside. Place the funnel upside down in the jar. Submerge the test tube and place it over the spout of the funnel, making sure that no air is trapped inside the tube.

2. Let the water out of the sink. Pour a little water out of the jar, and then place the assembled equipment on a sunny windowsill. The pondweed will start to photosynthesize, producing bubbles of gas which collect in the tube.

3. When the tube is half filled with gas, light a wooden skewer and then blow it out. Pick up the tube, and insert the glowing end of the skewer into it. The skewer will suddenly burst into flame again, showing that the gas in the tube is pure oxygen. Try the same test with a tube containing ordinary air, and compare the results.

www.iearthday.com
A habitat is the place where a plant or animal can get all the things it needs to survive. The next time you pass by a tree, think of it as a habitat.

- What are some plants and animals that depend on trees?
- What do trees provide for these plants and animals?
- Can you see signs of life on the trunk, branches, roots, and leaves?
- How is a tree affected by the plants and animals that live on it?

### Organisms

<table>
<thead>
<tr>
<th>Organisms</th>
<th>Association with Tree Habitats</th>
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| **Insects** | - Ants live on or around trees. Weaver ants build leaf-nests on trees.  
- Bees and butterflies are often seen collecting nectar from flowers.  
- Many insects depend on trees for food, including:  
  - Leaf-eating insects like caterpillars and grasshoppers.  
  - Wood-eating insects like termites and beetles.  
  - Sap-sucking insects like cicadas and stink bugs. |
| **Spiders** | - Orb-weaver spiders or hunting spiders live and hunt on trunk or branches. |
| **Reptiles** | - Snakes and lizards |
| **Birds** | - Birds such as sparrows and kingfishers eat the fruits of trees.  
- Some birds like woodpeckers eat insects that live on or in trees.  
- Some birds next in trees (crows, robins, pigeons). |
| **Mammals** | - Squirrels and tree bats |
| **Plants** | - Ferns and orchids grow on trees.  
- Moss may be found at base of tree trunks  
- Vines and climbers use trees as support to reach the canopy for sunlight.  
- Some parasitic plants like mistletoes tap water and nutrients from the host tree. |
| **Lichens** | - Lichens are composed of alga and fungus in a symbiotic relationship. There are commonly found growing on tree trunks and don’t harm the tree. |

### Tree Search

Visit a park or forest where there are trees. Observe four trees in different stages of their life-cycle, including dead or fallen trees and decomposing logs. Make notes about your observations and sketches to record your findings. Use these questions to guide your observations.

- Which animals prefer live trees and which prefer dead trees?
- What roles do trees play in the lives of animals and what roles do animals play in the lives of trees?
- What value might dead trees have in a forest?
- What difference do the seasons play in the kinds of animals that you might observe?
Cooling

Who hasn’t sought the cool air under a shade tree or enjoyed the coolness of a walk in the woods? The most obvious way trees cool the air is by shading. Reducing the amount of sunlight striking buildings and pavement reduces the amount of energy that is absorbed and re-radiated into the air.

Trees also cool the air by a process known as ‘transpiration cooling.’ When it’s a hot day, you might get a little sweaty. Plants “sweat” as well. Similar to how we lose water through our skin, plants lose water through their leaves. Although you might not be able to see them, plants have small pores, or holes, on their leaves. Take a look at the bottom of a leaf under a microscope, and you will be able to see these holes, which are known as stomata. This is where plants can lose water through transpiration.

As trees release water into the atmosphere from their leaves via transpiration, the surrounding air is cooled as water goes from liquid to a vapor.

So, cooler air is nice, but how does it help air quality? The emission of many pollutants increases with temperature. Scientists found trees in parking lots made air three degrees cooler. Those few degrees difference reduced vehicle surface temperatures, inside-car temperatures, and, importantly, gas tank temperatures by 7 degrees! Fewer hydrocarbon emissions result from gas that evaporated out of tanks and hoses with reduced temperatures.

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Discover Transpiration

**Materials:** Sunny day, tree with big leaves, plastic bag, rubber band
1. Find a big leaf still attached to the tree.
2. Cover the leaf with a plastic bag and seal it tight around the branch with a rubber band.
3. Watch the leaf for an hour. What do you see inside the bag?

Even though it’s an invisible process, the loss of water from plants through transpiration is an important part of the water cycle because it adds a lot of water to our air. In just one year, every leaf on earth can send out much more than its own weight in water. In fact, a large oak tree can contribute 40,000 gallons of water a year to the air!
For centuries people saw trees only as lumber or firewood. In the process of making the lumber, they would discard the sawdust, bark and wood scraps.

Eventually, scientists studied the structure of trees and discovered that all parts of a tree, big or small, have an abundance of valuable chemicals. The forest products industry used this research to create new products. Trees are now used in thousands of common consumer items that play a vital part in improving your health and your everyday life.

**Gum**
Gum and synthesized essential oils from trees can be used to make chewing gum.

**Fruits and Nuts**

**Eye-glass Frames**
Cellulose wood fibers are dissolved and can then be formed into molded articles like eyeglass frames and combs.

**Baseball Bats**
The white ash tree is a hardwood is used to make baseball bats.

**Clothing**
Cellulose is used to produce rayon and acetate which can be used making clothing such as ties, dresses and suits.

**Toothpaste**
Cellulose can be used in toothpaste to give it a paste-like consistency.

**Maple Syrup**
Tree sap is used in making syrup.

**Shampoo**
Methylcellulose can be used to thicken shampoo and conditioner. Without it, they would just be soap water.

**Perfume**
Tree bark is used to make tall oil, which cosmetic companies can use to make perfumes.

**Candles**
Tree gum can be used to make candles.

**Tires**
Tree-produced chemicals can be used for making the synthetic rubber found in tires.

**Parmesan Cheese**
Cellulose powder can be used to help keep canned grated Parmesan cheese from caking together.

**Toilet tissue**
Wood pulp is used to make paper products such as toilet tissue, paper towels and notebook paper.

Plant Cell Wall
All plant cell walls are made of cellulose. Manufacturers grind up the wood and extract the cellulose.
Tree Products Scavenger Hunt

Try to find as many items on this list as you can. You may either find the item or a picture of it. You will have 10 minutes for the scavenger hunt. Items are divided into three levels of difficulty. Keep a tally because each level is worth a different amount.

If you can name what part of the tree the items comes from or what part is used in the product, you will get bonus points!

Easy Items: Find it = 1 point. What part of the tree does it come from = 2 points
○ Chair ____________________________
○ Toilet tissue ____________________________
○ Apple ____________________________
○ Pecan ____________________________
○ Paper money ____________________________
○ Envelope ____________________________
○ Mulch ____________________________

Easy Score ________

Difficult Items: Find it = 2 points. What part of the tree does it come from = 3 points
○ Molasses (syrup) ________________
○ Toothbrush handle ________________
○ Cork ____________________________
○ Birdhouse ____________________________
○ Food packaging ____________________________
○ Chocolate ____________________________
○ Charcoal ____________________________

Difficult Score ________

Expert Items: Find it = 3 points. What part of the tree does it come from = 4 points
○ Aspirin ____________________________
○ Cinnamon ____________________________
○ Rayon cloth ____________________________
○ Hairspray ____________________________
○ Nail polish ____________________________
○ Ice Cream ____________________________
○ Eyeglass frames ____________________________

Expert Score ________

TOTAL SCORE ________

Answers on Page 16

www.ifearthday.com
During heavy rains, trees reduce the risk of flooding. There are two major ways in which trees provide protection against flooding.

**Trees slow rainwater.**

All floods are caused because the rain cannot soak into the soil fast enough. Instead, it runs rapidly over the surface of the land. Trees and other plants help to slow rushing floodwater, giving it time to soak into underground aquifers, and greatly reduce damage downstream.

**Tree roots help water seep into the soil.**

When trees and other plants grow in an area, the roots of plants dig deep in to the soil and create space between soil particles. When it rains in highlands, water that flows downhill gets drained into the space created by the root system of plants. The soil held in place by plant roots acts like a sponge, soaking up water and then slowly releasing it back into the river.

Do this activity and learn how to help save the soil with plant roots!

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**Can Plants Slow Soil Erosion?**

Soil erosion is partially caused by rain runoff washing away the soil. “Runoff” refers to the water that flows over soil’s surface. It occurs when the soil is saturated or unable to absorb more water.

**Materials:** scissors, clean 1 gallon container with lid (such as a plastic milk jug), water, 2 bread pans, dirt, 2 9x13 inch cake pans, 12 to 14 plastic forks, two blocks to prop up one edge of a bread pan, outdoor test area, small gardening shovel

1. Ask an adult to use the scissors to poke one hold just above the handle of the 1-gallon container. This hole can be 1/2 inch across.
   It’s to let air into your container. (If you have a watering can with a spout, you can skip these steps.

2. Ask a adult to poke holes in the top of the container on the opposite side of the handle for the “rain” to come out. Three rows of five holes work well.

3. To test you watering can, fill it halfway with water and put on the lid. Over a sink, tilt the container so water pours from the smaller holes. Does it mimic rainwater? Make adjustments to your holes as necessary.

4. Fill the bread pans with soil. The layer of soil should be at least 2 inches deep.

5. Ideally you would grow plants in one pan. Since this takes time, you will use plastic forks to simulate the root system. Plant forks in one box. Distribute the forks so the area is evenly covered. Make sure you place them deep enough that only the handles stick out.

6. Remove the top half of one short side of each bread pan, as shown. This will allow soil to flow out of the pan when you do your erosion test.

7. Place each bread pan into a cake pan. Place a block under the “uncut end of the bread pan so it is like a small slope of a hill.

8. Fill the water container about 3/4 full of water. ”Rain” over the fork-less bread pan. Make observations as rain comes down on the soil.

9. Refill your container and “rain over the fork (plant) bread pan. Make observations as it rains. Do you see any differences between the two experiments?
We all need trees! They provide us with clean air, oxygen, flood control, animal habitats, wood products and so much more. How can we return the favor? Here are some simple ways we can all help trees.

1. Use paper wisely. We can save trees from being cut down by using less paper.
   - Make a space for reusable paper.
   - Use scrap paper for coloring or drawing.
   - Use both sides of paper.
   - Choose a reusable lunch box instead of a paper bag.

2. Play and create with trash.
   Use cardboard boxes, empty toilet paper and paper towel rolls to create. Boxes can become forts and superhero headquarters, toilet paper rolls turn into binoculars and bird feeders, and paper towel rolls become spotting scopes and periscopes.

   The library is a great alternative to buying new, as are friends who are willing to swap books. Instead of holding on to books when your kids have outgrown them, donate them to a used bookstore, library or reading program.

4. Plant a tree.
   Although planting trees is a popular Earth Day activity, fall is the season to plant trees and shrubs. Do your homework to make sure you pick the right tree for your space.

5. Visit the forest.
   Visit a local state or national park.

   When you visit the forest, stay on marked trails. This will minimize your impact on wilderness areas, preserving them for future generations.

7. Get your Smokey on. Remember Smokey the Bear?
   - Always be careful with fire.
   - Never play with matches or lighters.
   - Always watch your campfire.
   - Make sure your campfire is completely out before leaving it.
Have a Question?

It's time to ask those burning science questions you've been dying to know. We've assembled a panel of local scientists who are ready and willing to answer your questions. A featured question will be highlighted in the Ask a Scientist column in the Post Register each Tuesday during the school year. We look forward to hearing from you!

Send your questions to alana.jensen@vnsfs.com. Check the Ask a Scientist blog for more answers, classroom resources, and lesson plans.

www.idahoaskascientist.com
www.idahoeser.com

Tree Scavenger Hunt Answer Sheet (page 13)

**Easy Items**: Find it = 1 point; What part of the tree does it come from = 2 points
- Chair - solid wood (trunks and limbs)
- Apple - fruit
- Paper money - pulp
- Mulch - bark or the whole tree
- Toilet tissue - pulp
- Pecan - nut
- Envelope - pulp

**Difficult Items**: Find it = 2 points; What part of the tree does it come from = 3 points
- Molasses (syrup) - sap
- Cork - bark (mostly from cork oak tree)
- Food packaging - pulp
- Charcoal - wood
- Toothbrush handle - pulp
- Birdhouse - solid wood (trunks and limbs)
- Chocolate - nut (from cacao tree)

**Expert Items**: Find it = 3 points; What part of the tree does it come from = 4 points
- Aspirin - bark (of willow tree)
- Hairspray - contains wood resin
- Nail polish - contains chemicals (leftover from making paper, makes polish glossy)
- Ice cream - contains cellulose (makes it smooth and thick)
- Eyeglass frames - Cellulose (dissolved and forms a shape)
Benefits of Growing and Protecting Trees

- Trees provide shade and keeps the temperature cool
- Trees are home to different birds and insects
- Trees give us medicine which can cure us when we are sick
- Trees take in carbon dioxide and give out oxygen which is necessary and important for life.
- Trees protect the soil from erosion and landslides

Trees are TERRIFIC!!

Come and see us at the Department of Environmental Quality’s booth during Earth Day Celebration 2019
Saturday, April 27th
ROCKY MOUNTAIN
ADVENTURE
SUMMER CAMPS

SCHOLARSHIPS AVAILABLE!
museumofidaho.org

CAMPS FOR KIDS

Build it!
Ages 6-10
June 24-27

H2Whoa!
Ages 10-13
July 8-11

Real World Gaming
Ages 12-16
July 15-18

CAMPS FOR EDUCATORS

Water in the West
2 credits
July 22-23

Wild and Wonderful
Wetlands
2 credits
July 24-25

Code Invent! Computer
Science in the Classroom
2 credits
July 29-30

Habitat Contrasts
1 credit
July 31 - August 1

Astronomy
1 credit
August 5-6

History Alive!
1 credit
August 7-8
Utah Juniper Information and Coloring Page

**Bark**
Utah juniper bark can be woven into sandals, clothing, and rope.

**Wood**
The aromatic wood is highly durable and varies from milky white to reddish-brown with a swirling pattern.

**Medicinal Uses**
Native Americans used the Utah juniper to treat numerous medical conditions such as kidney trouble, heart trouble, hemorrhages, stomach aches, headaches, colds, fevers, flu, pneumonia, diabetes, cholera, tuberculosis, chickenpox, worms, swelling, rheumatism, burns, sore throats, hives sores, boils, and slivers.

**Size**
Typically, mature Utah juniper trees reach 10-30 ft tall, and the trunk can be more than 4 ft in diameter.

Utah Juniper trees can survive for 350 to 700 years.

**Needles**
The thick needles provide protection to birds and animals from harsh winters and hot summers.

**Berries**
Many bird species depend on the berries for fall and winter food. Junipers also help feed coyotes, elk, foxes, jackrabbits, and mule deer.

FLUOR IDAHO
The Juniperus osteosperma Vegetation on the INL Site
Recycling Options At Home

City Drop-offs*
1. Skyline High School (parking lot)
2. Kingston Parking Lot (1545 W Broadway)
3. Freeman Park (south of WCB)
4. Downtown Post Office (875 N Capital)
5. Tauphaus Park (Rogers St)
6. Central Park (Holmes & Cleveland)
7. North Tourist Park (Lincoln & Yellowstone)
8. Smith’s Food (400 S Woodruff)
9. Sunnyside Park (west of hospital)
10. Behind EITC (via Ashment Ave. or Hitt Rd.)
11. Taylovview Jr. High School (S. Holmes)
12. Community Park (S. Holmes & E. 25th St.)

City Services
13. Hatch Pit (395 E 33 North)
14. Transfer Station (2455 Hemmet)

Recycling Centers*
15. Western Recycling (1020 Denver)
   - Newspaper, magazines, paper, cardboard, plastic, aluminum, tin, scrap iron, copper, brass
16. Pacific Recycling (1155 N. Higbee)
   - Aluminum, copper, brass, iron, stainless steel, electronic waste, automobile batteries
17. Target (2171 S 25th E)
   - Glass and plastic bottles, aluminum cans, cell phones, MP3 players, ink cartridges, grocery bags

18. Interstate Recycling (3755 N Yellowstone)
   - Aluminum, copper, brass, radiators

Compact Fluorescent Light Bulbs
19. Idaho Falls Power (140 S Capital)
20. Home Depot (2075 S Holmes)
21. Lowe’s (925 E 17th St)

Computers & Electronics
(14 & 35) E-Cyclers (1976 N. Yellowstone)
22. Best Buy (2404 S 25th E)
Both businesses accept all sorts of electronics: batteries, computers, cell phones, GPS, etc.

Ink Cartridges & Toner
23. Cartridge World (2087 E 17th)
24. Staples (1999 S. 25th E., in store or online)

Plastic Grocery Bags
25-27. Albertson’s (Broadway, 17th, or Hitt)
28. Fred Meyer (1555 Northgate)
29. WinCo Foods (333 N Woodruff)
30-31. Walmart (Broadway and Hitt)

Scrap Metal
32. Pacific Steel (257 E Anderson)
33. Tire Recyclers (3195 N Yellowstone)

Unused/Expired Medication Drop
34. Bonneville County Sheriff (605 N. Capital) or check with your local pharmacy, many accept them

What else can I do at home?

There’s no better place to start recycling and reducing energy use than at home. Here are some ideas.

Unplug battery chargers or power adaptors or plug TVs & radios into a power strip & turn off when not in use.

Check air filters and replace as needed.

Install a programmable thermostat (could save about $575 per year).

Seal outlets and electrical boxes on outside walls with outlet gaskets.

Plant trees or shrubs around windows to block heat in summer and insulate in winter.

Set your water heater to 120°F or less.

Ride a bus or a bike or carpool.

Plan your errands to reduce trips.

Recycle (see the back page for recycling unusual items at home).

Wash only full loads of dishes & clothes.

In winter, open south facing window coverings during the day & close at night.

Install insulation; energy-efficient appliances, windows, or doors; or renewable energy systems (see www.energystar.gov/taxcredits for tax credit info).

Replace incandescent light bulbs with compact fluorescent or LED bulbs and turn off when not in use.

Curbside Recycling Providers—Note: Due to international ban on importing certain materials, most locations no longer accept plastics #3-7
Curbside recycling programs in the area:
Ammon, Idaho Falls, and Rigby (and some surrounding areas)
Western Recycling 529-9908
www.westernrecycling.net
Email: curbside@westernrecycling.net
$7/mo residential
   * Newspaper, magazines, paper, cardboard, #1 & 2 plastic, aluminum, tin

City of Chubbuck 237-2400
https://cityofchubbuck.us/streets-sanitation/
$5/mo
   * All paper, cardboard, #1 & 2 plastic, aluminum, tin

Blackfoot, Firth, Snake River area
Bingham Curbside Recyclers 681-8597
$5.50/mo
   * Paper, cardboard, plastic, aluminum, tin

City of Pocatello 234-6192
http://www.pocatello.us/395/Recycling-Programs
Email: pocatellorecycles@pocatello.us
Included in City garbage service
   * Newspaper, magazines, paper, cardboard, #1 & 2 plastic, aluminum, tin

* Locations provided as information only. Listing does not indicate endorsement of listed business. Subject to change. All City locations now have bins to accept glass bottles for recycling.

Updated 3/20/19
# Recycling Unusual Items at Home

<table>
<thead>
<tr>
<th>Material</th>
<th>How</th>
<th>Why</th>
</tr>
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<tbody>
<tr>
<td><strong>Batteries</strong></td>
<td><strong>Batteries Plus (2182 Channing Way)</strong> will accept a variety of batteries including rechargeable and car batteries. <strong>Walmart Supercenters</strong> (both Idaho Falls and Chubbuck locations) and <strong>Sam’s Club</strong> (700 E 17th Street) will also accept car batteries. <strong>Pacific Recycling</strong> (1155 N. Higbee) accepts car batteries.</td>
<td>Batteries disposed in landfills and trash incinerators can disperse significant amounts of heavy metals and toxic chemicals into air and water ways.</td>
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<tr>
<td><strong>Cans, Plastics, Paper, and More</strong></td>
<td><strong>Recycling at Home (Idaho Falls Area)</strong> see reverse side for locations</td>
<td>Recycling conserves natural resources, reduces demands on landfill space, and can save energy and money.</td>
</tr>
<tr>
<td><strong>Compact Fluorescent Lights (CFLs)</strong></td>
<td><strong>Home Depot and Lowe's</strong> will accept CFLs at the return counter at any of their stores. <strong>Idaho Falls Power</strong> (140 S. Capital Ave.) and <strong>Batteries Plus</strong> will accept CFLs and fluorescent tubes. If a CFL breaks, follow EPA recommended clean-up instructions. (<a href="http://www.epa.gov/mercury">www.epa.gov/mercury</a>)</td>
<td>CFLs contain a small amount of mercury which can pose an environmental risk if they aren’t disposed of properly.</td>
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<tr>
<td><strong>Compost</strong></td>
<td><strong>Composting</strong> is a way to avoid sending kitchen and yard waste to landfills by turning it into a useful substance that can be added to house plants and yards. (<a href="http://www.howtocompost.org">www.howtocompost.org</a>) <strong>Pocatello “Compost Happens” Program</strong> The City of Pocatello provides a curbside yard waste only composting program to 700 participants for $5 per month.</td>
<td>Yard and food scraps make up a large percentage of household waste and by composting these materials you can turn them into a valuable commodity and avoid sending them to landfills.</td>
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<tr>
<td><strong>Electronics</strong></td>
<td><strong>E-Cyclers of Idaho</strong> accepts electronics (including mice, monitors, printers, laptops, etc.) dropped off at the store (1976 N. Yellowstone) or at their trailer at the Bonneville County Transfer Station (2455 Hemmert Ave.) For pickup of larger quantities or questions, please contact them at 208-881-9481 or email to <a href="mailto:info@ecyclersofidaho.com">info@ecyclersofidaho.com</a> <strong>Best Buy</strong> (2404 S 25th E) accepts all sorts of electronics, either at the front kiosk or contact an associate for additional items (including CRT TVs for a fee), peripherals, CDs &amp; DVDs, GPSs, etc. <strong>Target</strong> (2171 S 25th E) accepts cell phones, MP3 players, and other small electronics in the bins at the front of the store. Also, a number of major manufacturers have take-back programs available when you purchase new computers.</td>
<td>Because of the toxic nature of their components (computers and monitors contain such hazardous chemicals as lead, phosphorous, cadmium, barium and mercury), dumping of computers and related electronics in landfills is strongly discouraged.</td>
</tr>
<tr>
<td><strong>Household Hazardous Waste</strong></td>
<td>Household Hazardous Waste (including paints, solvents, varnishes, acids, flammables, acrylics, resins, carpet padding, motor oil, and gasoline) is collected periodically at area events in <strong>Bonneville County</strong> (<a href="http://www.co.bonneville.id.us/index.php/public-works/solid-waste">www.co.bonneville.id.us/index.php/public-works/solid-waste</a>) and <strong>Bannock County</strong> (<a href="http://www.bannockcountylandfill.us/hazardous-waste.html">http://www.bannockcountylandfill.us/hazardous-waste.html</a>). <strong>Walmart</strong> stores with oil changing services (both Idaho Falls locations and Chubbuck) will also accept used motor oil and filters at their Tire Lube Express departments.</td>
<td>Many common household products are hazardous, and if handled or disposed of incorrectly, they can pose a threat to human health, animals and the environment.</td>
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<tr>
<td><strong>Unused/Expired Medications</strong></td>
<td>Unused and expired medication can be disposed at the Bonneville County Law Enforcement building foyer (605 N. Capital) Monday—Friday 8am—6pm. Liquids must be in a zippered plastic bag and no syringes are allowed.</td>
<td>Flushing medications can be harmful to wastewater treatment facilities and may pass through and enter the river and aquifer.</td>
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<tr>
<td><strong>Other Unusual Items (CDs, computer cables, etc.)</strong></td>
<td><strong>Earth911</strong> (<a href="http://www.earth911.com">www.earth911.com</a>) offers information on how to recycle unusual items. Visit their site, go to Recycling Search, type in your zip code and the item name, and the site will provide a list of disposition sources (including local facilities and places where you can mail your items.)</td>
<td></td>
</tr>
</tbody>
</table>
Come Hang with Our Gang!

Student Challenge
Identify the main idea and supporting details in the paragraphs below.

African, or black-footed penguins are native to the coast of South Africa and most endangered penguin species. They are carnivores that feed mainly on fish like sardines, anchovies, mackerel, herring and have been known to also eat squid and crustaceans.

Commercial over-fishing, loss of nesting sites, and people collecting their eggs for food has caused the wild African penguin population to drop over 70% in the last 20 years.

Your Idaho Falls Zoo has 17 African penguins and works with other zoos and aquariums, as well as SANCCOB, a conservation organization in Cape Town, to save these magnificent birds from extinction.
Jump, run, crawl! It’s the Earth Day 1 mile challenge course run. Ready, set... give it your all on this two lap course designed to challenge balance, agility, and endurance in kids ages 3-14! Check the if-earthday.com website for times!