



## March 2011 – Spring!

Spring is coming! In some areas, it may not look or feel like it yet, but the days are getting longer and soon things will be growing and blooming all around us.

## Spring Science Projects

### How A Flower Drinks

In this project, you will get to see how flowers drink water through their stems.

What You Will Need:

- a single white flower (a daisy or a carnation will work best)
- food coloring (any color)
- a glass of water
- scissors

What To Do:

1. Add a few drops of food coloring to the glass of water. Make sure you close the food coloring tightly afterwards so it doesn't make a mess!
2. Cut the stem of the flower at an angle. Look at the end you just cut. Do you notice anything interesting about it? Is it hollow inside?
3. Put the flower into the glass of colored water. The flower should be above the water, only the stem needs to be in the water.
4. Set the glass and the flower someplace where it won't get knocked over.
5. Look at the flower every day and see if you notice any changes.

What's Happening?

Flowers use tiny tubes inside their stems to carry water from the roots of the plant all the way up to the flower. Since your flower didn't have any roots, the stem soaked up the colored water and carried it to the flower. When you cut the stem of the flower and looked at it, you probably saw the little tubes inside of the stem. The flower uses those tubes kind of like you use a straw to get a drink! Water is more attracted to the insides of the tubes than to the water around it, so it sticks to the sides of the tube and slowly travels up it all the way to the flower. After a few days, you probably noticed that the flower petals started to change to the color of the water! If you leave it in for a few more days, the color of the petals should get even darker. You can see

how the plant stem carries water all the way up to the flower, right to the tip of the petals to keep them moist and healthy.

## Earth's Rotation

Have you ever wondered why we have seasons? Do this simple project to see how the earth moves around the sun in a year, giving us day, night, and seasons!

What You Will Need:

- an orange
- a black marker or pen
- 2 thumbtacks or small stickers (each a different color)
- 2 toothpicks
- a large bowl

What To Do:

1. Draw a line around the center of the orange, making a top half and a bottom half. This line represents earth's equator.
2. Place a thumbtack or sticker on the top half of the orange (above the line) and another one on the bottom half (below the line). The top half represents the Northern Hemisphere and the bottom half the Southern Hemisphere.
3. Push a toothpick into each end of the orange - you should push them in about halfway, leaving enough room at the ends to hold onto. The toothpick in the top represents the North Pole and the one in the bottom represents the South Pole. Now you have a model of the earth!
4. Place the bowl upside down in the middle of your table. This represents the sun. Keep in mind that the sun is really much larger than the earth (it is 109 times as large as the earth!).
5. Now, hold the orange by the toothpicks with the bottom toothpick (the South Pole) tilted slightly towards the sun (bowl). This is how the earth is positioned towards the sun.
6. To represent one day on earth, hold the orange by the toothpicks and spin the orange completely around once.
7. Continue spinning the orange around, but this time begin to move the orange all the way around the bowl. Try to keep the orange an equal distance from the bowl the whole time. (Note: This is a little hard to do! It may work better to have an adult do the spinning while you watch what happens.)



What's Happening?

Let's review what we were representing: the orange represented the earth, the toothpicks represented the earth's poles, the line around the middle of the orange represented the equator, and the thumbtacks marked the hemispheres. The upside-down bowl represented the sun.

We have seasons because of the way that the earth moves around the sun. The earth orbits the sun along an egg-shaped

path, just like all of the other planets do. It takes a whole year, or 365 days, for the earth to go all the way around the sun one time. The earth is also tilted. It is always tilted in the same direction, so only part of the earth can be facing the sun at a time. The part of the earth that is tilted farthest away from the sun gets winter (because it is farther away from the sun) while the part of the earth that is towards the sun has summer (it is facing the sun more directly). The earth also spins around (while staying tilted in the same direction the whole time) while it is moving around the sun! It spins around one full time in a day.

## Fun Facts

- Bees, mosquitoes, and some other insects make humming noises by rubbing their wings together very quickly as they fly.
- Did you know that only female mosquitoes bite humans?
- On the First Day of Spring (March 20), if you were standing at the equator, the sun would be in the middle of the sky, passing directly over your head.

## Silly Science

- What do bugs have that no other animal has?
  - *Baby buggies!*
- Why can't the flower ride his bike?
  - *Because he lost his petals.*
- What is the best month for a parade.
  - *March!*

## Way Cool Websites

- Discover what different kinds of birds eat with this [quiz](#).
- Play this quick spring [concentration game](#), just for fun.

## Teacher Tidbits

### What Is Spring?

The changes that come with spring happen because of how the earth moves around the sun. When spring arrives, the days start getting longer and the weather starts getting warmer. The first day of spring, March 20th, is called the *vernal equinox*. At the equinox, the number of hours of daylight are almost exactly the same as the number of hours of darkness (12 hours each) everywhere on the earth! This is because the earth's equator (an imaginary line around the very middle of the earth, dividing it into a top half and a bottom half) is lined up directly with the sun. The sun is closer to earth and the sun's light shines on earth more directly in spring than it does during winter. That's why we start to experience warmer weather, too.

Did you know that when it's spring in earth's Northern Hemisphere (the part of the earth above the equator), it is fall in the Southern Hemisphere (the part below the equator)? The same is true for summer and winter, too. You can read more about seasons in [this article](#) about winter.

## Green and Growing

Have you ever noticed how it seems like things outside begin to turn green "overnight" when spring comes? Trees that were dormant during the winter begin to grow buds that grow into leaves and plants and new grass start to pop up out of the soil. As the days get longer and the weather gets warmer, the earth and soil start to thaw. Snow melts and soaks into the ground. Oceans get warmer which cause it to rain more.



Seeds and plants need three things to grow: soil, sun, and water. With more sunlight every day, along with the soil thawing and lots of rain, plants start growing quickly in springtime!

## Birds Building Nests

The oriole, robin, and swallow are all birds that you can see in the springtime. Sometimes seeing a robin is a sign that spring has come. When the weather starts to get warm, birds fly from the south to the north. Flying with the changing seasons like this is called migration. Migrating birds always head somewhere warmer in winter and come back in the spring. You can find out which birds migrate back to your area in the spring on this [website](#).

Spring is when birds build nests and have babies. To build a nest, birds find a safe place and start gathering twigs and grass to build their new home. When the nest is finished, the mother bird lays her eggs, and soon baby birds will hatch. Spring is always the time when baby animals are born. When everything is green and growing, there is plenty of food for the animals to eat. Warmer temperatures make it easier for small babies to survive. A mother bird will collect worms and insects for her babies to eat until they are big enough to find food on their own.

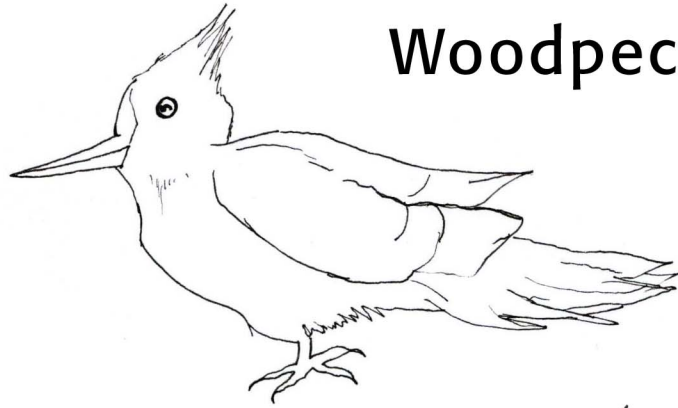
You can learn about other baby animals [here](#).

## Printable Worksheet

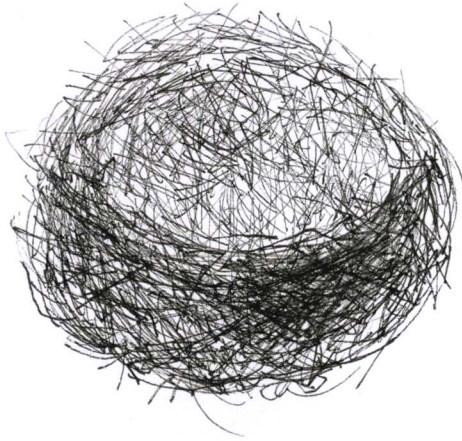
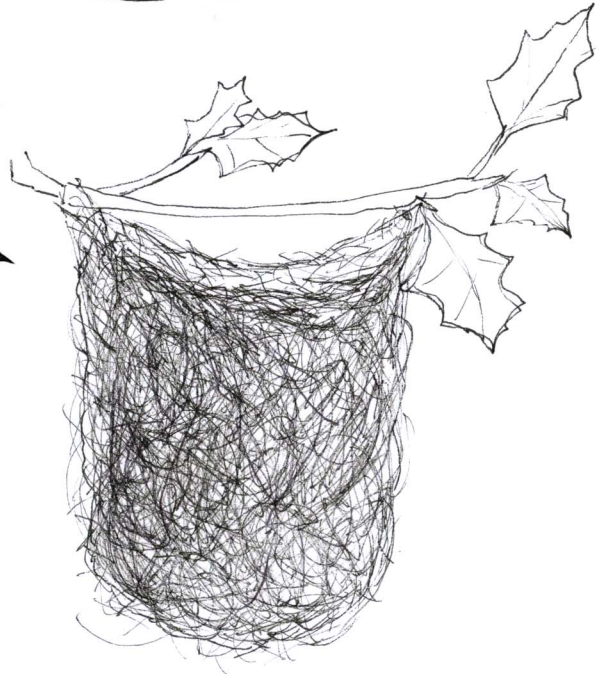
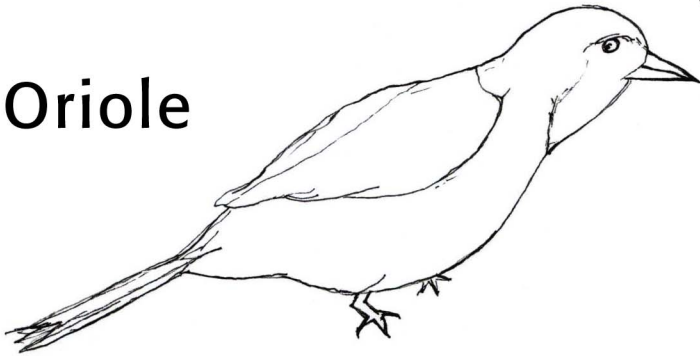
Kids of all ages will have fun coloring the birds on this sheet! Discuss the different types of nests that different birds make and see if they can guess why each one builds that kind of home to raise its young. Older kids might enjoy coloring the page using colored pencils to portray more accurate colors of the birds. Help them locate photos of the birds on the internet, in a field guide, or wildlife magazines to use as a coloring guide.



**Woodpecker**



**Oriole**



**Robin**



**Cliff Swallow**

