

BOOMbox at Home

Plant a Pizza Garden

Planting a pizza garden is a great way to get children interested in gardening and healthy eating. Get a jump on your outdoor garden by starting seeds indoors and transplanting seedlings after the last frost. You also can grow herbs indoors all year.



Supplies

Here is what you will need to start seeds:

- small containers at least 2-3" deep, with holes in the bottom; yogurt or applesauce cups, clay pots, or plastic drinking glasses are all good options.
- a tray without holes to hold the small containers
- craft sticks and marker or pen to label containers
- potting soil
- spray bottle
- seeds of choice including basil, parsley, oregano, tomato, and peppers

Instructions

- Make sure your containers have a small drainage hole at the bottom.
- Fill each small container with potting soil nearly to the top.
- Use your finger to poke a hole in the middle of the soil.
- Put in a few seeds and cover the hole loosely with soil.
- Place pots into a tray and find a warm, sunny location, maybe a windowsill.
- Keep the soil moist, but don't over water.

Moving it Outside

When you move seedlings outside, here's a rough idea for how much space to allow between plants. Check your seed packets for specific information.

- Tomatoes: 2 feet apart for bushes, 3 feet if they grow on vine
- Peppers: 18 to 24 inches apart
- Onions: 6 inches apart
- Basil: 8 to 18 inches apart, depending on type
- Oregano: 12 to 36 inches apart, depending on type

What will you learn today?

BOOMbox at Home

Chia Seed Egg Heads

Create your own cute character with chia seed sprout hair! When you're finished, left-over egg shells can be used in compost.



Supplies

Supplies needed:

- eggs
- knife
- coloring materials
- chia seeds
- potting soil

Handling knives can be very dangerous! Younger artists may need to ask an adult for help.

Instructions

- First, cut the top of the egg shell off, and drain what is inside. Make sure to rinse the egg off inside and out.
- Fill the egg almost full with potting soil, and then pour in the chia seeds on top.
- Water the soil regularly.
- Decorate your egg shells to represent a character or other design.

What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

BOOMbox at Home

Nature Seed Bombs

Seed bombs are an amazing way to help grow gardens and to repopulate wildflower areas. Seed bombs are another biodegradable way to start seeds in your garden, and a super fun way to do it, too!



Supplies

Supplies needed:

- potter's clay
- wildflower seeds
- water
- a bowl

This can get messy—work in a spot that you don't mind getting dirty!

Instructions

Try this science experiment at home:

- Assess your garden's needs.
- Pour the potter's clay into a bowl, and pour the wildflower seeds on top of the clay and mix.
- Add enough water to be able to form the clay/wildflower seed mix into balls.
- Let dry for at least 3 hours in the sun and then have fun throwing them in your garden!

What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

BOOMbox at Home

Soil Horizons Dessert Cups

One way to see soil horizons is to grab a shovel, get outside, and dig a big, deep hole. How deep? Well, depending on where you dig, your hole may need to be up to 100 feet deep to hit bedrock! Don't have the time or space for that? A simple, tasty way to visualize soil horizons is by making this soil layer snack.



Supplies

For this activity, you will need:

- chocolate chips
- butterscotch chips
- chocolate pudding
- Oreos
- shredded coconut
- green food coloring
- gummy worms or gummy bugs
- clear cups or glasses
- spoons
- sticky notes or other labels (optional)

Instructions

- Place a whole Oreo into the bottom of the cup to represent the bedrock horizon.
- Layer chocolate and butterscotch chips on top of the Oreo to represent the parent material.
- Cover chips with a layer of chocolate pudding to represent subsoil.
- Next, layer on crushed Oreos to represent the topsoil.
- Stick the gummy worms and insects on the “topsoil.”
- Mix the shredded coconut with the green food coloring to make grass. Sprinkle on top, allowing the worms to poke through.
- Use the sticky notes to label the layers on the outside of the cups before serving!

What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

- Why do the colors spread? This is because of a concentration gradient. In the area right around the candy, there is a high concentration of color whereas in the plain water, there is almost no color. The molecules that make up the colors move towards the areas with lower concentration, like people spreading out throughout a room instead of all sitting in one corner.
- Does this style of art remind you of any paintings you've seen before? Research pointillism, an art style made up of only dots like our round candies, and post-impressionism, an art style that can include the same sorts of swirls. For an extra challenge, try to recreate a famous piece.

What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

BOOMbox at Home

Candy Art

Candy may be fun to eat, but you can also use it as part of this science project. Enjoy some art before eating any leftovers.



Supplies

- white plate or tray
- Skittles or other colorful hard candy
- water

Instructions

- Separate your candy by color.
- Place the candy in a pattern on the plate or tray. Leave some space for the colors to spread! It might take a few tries to create the perfect picture.
- Carefully pour some water onto the plate or tray. The candies do not need to be fully submerged.
- Watch the colors spread as the candy dissolves.
- Take a photo to preserve your art project. If you'd like, you can remove the candy pieces first, but this may disrupt the colors.



Want to explore more?

- This project was inspired by [this post from STEAM Powered Family](#). Take a look at their results!
- Why don't the colors mix together? This is because of a property called stratification. Each of the colors is made from different chemicals, and when they dissolve, they form solutions with different densities, salinities, etc.

BOOMbox at Home

Edible Candle

No candles? No problem! Make an edible candle in minutes using supplies you may already have in your kitchen. Fool your friends by taking a bite out of your birthday candles—just be sure to blow them out first!



Supplies

- knife
- walnut
- banana
- lighter or match
- standard birthday candles (optional)

Knives and matches can both be very dangerous. Younger scientists should have adult assistance for these steps.

Instructions

- Cut a walnut into small slivers. You can use the wick of a birthday candle as a reference for size.
- Cut the banana into pieces that are the same size and shape as a birthday candle.
- Place a walnut sliver in the top of the banana slice. Push it in a little so that it stands upright without support.
- Light the walnut the same way you would light the wick of a normal candle.

Want to explore more?

- Check out [this post from Thought Catalog](#) for more information on the science of this project.

What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

BOOMbox at Home

DIY Paper Pinwheels

The best way to learn more about how windmills work is to make your own miniature windmill. These DIY paper pinwheels are a great way to take advantage of a windy day.

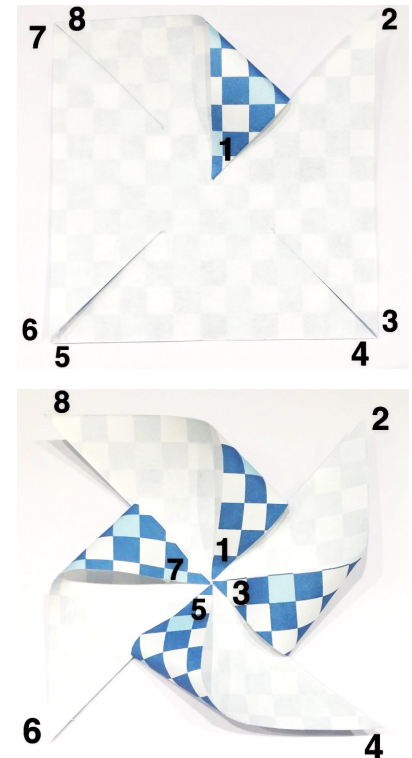


Supplies

- Sheets of colorful paper or cardstock
- Scissors
- Glue stick
- Push pin
- Pencil with eraser

Instructions

- Start by cutting two pieces of colorful paper or cardstock into squares.
- Glue both squares together with the colorful sides facing out. Make sure it is fully dry before proceeding.
- Crease the paper by folding in half both horizontally and vertically. Those creases will serve as the guidelines for where to cut.
- Now make cuts halfway to the center on all four points, along the creases.
- Using the diagram in the pictures, gently fold in Corner 1 and glue the tip down in the center. Repeat this step for Corners 3, 5 and 7.
- Once the glue has dried, insert a push pin to the center to hold the tips together.
- Attach the pinwheel to a pencil by pushing the pin into the pencil's eraser.
- Finally, try blowing at the edges of the pinwheel to make it spin. Make sure to loosen the pin a bit if the blades do not rotate well.



What will you learn today?

Send a photo of your project to mycreation@skokielibrary.info and we may feature it on social media.

BOOMbox at Home

Creating a Gas

Mixing together baking soda and vinegar is a fun way to learn about chemical reactions that create gases. This is an easy experiment that anyone can do with common household items.

Supplies

For this activity, you will need:

- a jar
- a small plastic bag
- a rubber band
- vinegar
- baking soda
- safety goggles or glasses



Instructions

- Fill the jar one-third full with vinegar.
- Place one tablespoon of baking soda into the plastic bag.
- Use the rubber band to fasten the open end of the plastic bag onto the jar.
- Pick up the other end of the bag and hold it over the opening of the jar so that the baking soda drops into the vinegar. What happens when the two ingredients mix together?
- Squeeze the plastic bag. Does it feel like there is more air inside the plastic bag than before?

Want to explore more?

Mixing together vinegar, a liquid that is also known as acetic acid, and baking soda, a solid that is also known as sodium bicarbonate, results in a chemical reaction that creates carbon dioxide gas. You can explore the fizzing power of vinegar and baking soda by trying out lots of different kinds of experiments.

- Use a plastic bottle filled one-third full of vinegar and a balloon with one tablespoon of baking soda inside it to see the balloon expand as the chemical reaction occurs.
- Make a volcano out of modeling clay or paper maché, and pour some vinegar and red food dye into the crater. Drop in a spoonful of baking soda to watch the volcano explode!
- Experiment with different amounts of baking soda and vinegar to see what combinations make the biggest reaction.

What will you learn today?

BOOMbox at Home

Fart Chart

Farts can be loud and smelly, but do you know how to make the loudest and smelliest fart ever? Run this experiment to find out what foods give you the loudest and smelliest farts so you can horrify everyone around you.



Instructions

- Print out the fart chart on page two, or draw your own with a marker and some paper.
- Before you start collecting information, make a guess about what foods you think will make you fart the most.
- Every day, record what foods you ate on the fart chart. Record how many farts you made that day, how loud they were, and how smelly they were. You can either write or draw or add some stickers.
- Repeat these steps over the next few days. What different kinds of food did you eat? Did your farts vary in frequency, volume, and smell?
- Use the information you have collected to form your conclusion. What foods gave you the most farts? What foods gave you the loudest farts? What foods gave you the smelliest farts? Was your first guess correct?

Want to explore more?

Even after you finish your fart experiment, there's still plenty more to learn about farts.

- Try eating the fartiest foods for a month. Do your farts get more frequent and smellier, or do they stay the same? Why do you think this is?
- Recruit a friend to do the experiment with you. Do they get the same results from eating the same kinds of food? If they get different results, what do you think caused the difference?
- The fart chart was originally created by Aerial, a writer for the Seacoast Moms Collective. Find out how her kids have used the fart chart [at this blogpost](#).

What will you learn today?

Fart Chart

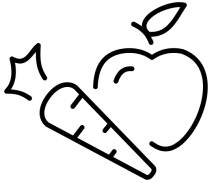

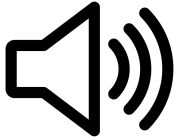

What did I eat today? 	How many farts did I make today? 	How loud were the farts? 	How smelly were the farts? 

Image credits: healthy Food by Counloucon, fart by BomSymbols, Volume by Chunk Icons, and smell by Corpus Delicti from the Noun Project

BOOMbox at Home

DIY Fire Extinguisher

Want to make your own basic fire extinguisher? This experiment is no replacement for a real fire extinguisher, but it is a fun way to put out a candle and learn about the science of combustion.

Supplies

- plastic bottle
- vinegar
- baking soda
- tea light candle
- safety goggles or safety glasses

*Matches can be very dangerous.
Younger scientists should have adult assistance
with this project.*



Instructions

- Light the tea candle.
- Pour vinegar into the bottle until it is around half full.
- Quickly pour the baking soda into the water bottle.
- Carefully hold the bottle at an angle to let the carbon dioxide escape and put out the fire. Be careful to not spill it!

Want to explore more?

Wondering how this works? When vinegar and baking soda are combined, they react to create carbon dioxide. Carbon dioxide is heavier than oxygen, so when you release carbon dioxide from the bottle, it sinks into the place of the oxygen surrounding the flame. This starves the fire of oxygen and puts out the flame.

What will you learn today?