

# THE AMAZING PUMPKIN

Let's learn some fun facts about this 5,000 year-old fruit!

## THEY ARE EVERYWHERE!

Well, almost. Pumpkins can be found on every continent except Antarctica, because...ICE. The state of Washington grows plenty of pumpkins every year, but we are not even in the top 10 pumpkin producing states in the United States!

**Can you guess what our top 10 agricultural commodities are? (hint: think fruits, veggies and animals)**

- |    |     |
|----|-----|
| 1. | 6.  |
| 2. | 7.  |
| 3. | 8.  |
| 4. | 9.  |
| 5. | 10. |

Washington's top 10 agricultural commodities are (in order): Apples, Milk, Wheat, Potatoes, Cattle, Hay, Hops, Cherries, Grapes and Eggs

## THEY ARE DELICIOUS.

Pumpkins are savory, which means they are not sweet. Because of this, many people think of them as vegetables (nope, still fruits), but this savory squash can make some deliciously sweet things! Better yet, pumpkins are packed full of vitamins. You'll find lots of vitamin A, vitamin C, vitamin E, potassium, and fiber, to name a few.

The largest pumpkin pie ever baked was 20 feet in diameter and weighed nearly 3700 pounds!

**How many of you would it take to equal the weight of the largest pumpkin pie ever made? (hint: divide 3700 by your weight)**

## THAT'S RIGHT, PUMPKINS ARE FRUITS.

They form from flowers and have the important job of getting the plant's seeds out into the world (a pumpkin can have over 500 seeds!). They are also considered squash...and also gourds!

The family of fruit they belong to is called Cucurbitaceae (kyew-curb-i-tay-see-aye). Can you say that five times fast? The family includes over 800 species of squash, cucumbers, melon and more. All are fruits and most grow on vines!

## What are your 3 favorite fruits?

- 1.
- 2.
- 3.

## THEY ARE ANCIENT.

Pumpkins are one of the oldest cultivated plants in the world and are believed to have originated in North America over 5000 years ago. Some scientists have dated seeds found in Mexico back to 7000 BC, which is closer to 9000 years ago!

## THEY NEED BEES!



That's right, you can grow a pumpkin plant from a seed, but for pumpkin flowers to turn into pumpkin fruits, pollinators are necessary! Pumpkin plants have male and female flowers. For a flower to create a fruit (pumpkin) a pollinator must visit. As a bee drinks nectar from different flowers on the plant, it transfers pollen from the male flower to the female flower and voila, you have a pumpkin! Thank you, bees!

Aside from pumpkins being super interesting, here are just a few of the many fun science activities you can do with them! Regardless of which activities you choose to do, make sure you work with an adult and think about the safest way to conduct each experiment. Have clean up supplies ready and it is always a good idea to wear protective gear (eye protection, apron, gloves, etc).

## ROASTING PUMPKIN SEEDS

Roasting pumpkin seeds is science! When you roast your food, the heat causes many small chemical reactions that transform or denature (break down) the proteins and sugars in your food. This can make your food more easily digestible, perfectly browned and very delicious. Yay, Science! There are lots of ways to roast pumpkin seeds, so if you are up for it, look for the recipe that will work best for you!

## PUMPKIN VOLCANO

This one is always a hit and can be done just after you have scooped out your pumpkin's insides or after you have finished carving it! It gets messy so is best done outside on a firm surface.

### YOU WILL NEED:

A bottle of vinegar and box of baking soda (optional additions are food coloring and dish soap). Your amounts will vary depending on the size of your pumpkin and if its carved or not. You can start by gently pouring  $\frac{1}{2}$  cup (or so) of baking soda (plus a few drops of soap and food coloring) into your pumpkin and then adding vinegar until you see a reaction. You can also fill your pumpkin with a few cups of vinegar first (more if it's a huge pumpkin), add just a few drops of soap and food coloring, and then add scoops of baking soda until you see a reaction! You may have to stir. Better yet, make a hypothesis (educated guess) on which method will work better and try them both!

### WHAT HAPPENS:

When baking soda (a base) and vinegar (an acid) are mixed together, a chemical reaction occurs and one of the products is carbon dioxide, a gas which wants to escape to the surface. That is what makes the fizz! Add soap to increase the fizziness.

## PUMPKIN OOBLECK

This is a super fun way to use all the parts of your pumpkin. If you have a pie pumpkin, you can bake something delicious after you scoop out the insides, but with a regular carving pumpkin, you may want to try this sensory experiment! Oobleck is a non-Newtonian fluid, which means it doesn't really act like water (a Newtonian fluid) will act. Apply pressure on oobleck and it behaves more like a solid. Stop applying pressure and it behaves like a liquid. Interesting, right? This recipe is a twist on classic oobleck which you can create by slowly mixing a 1:1 ratio of cornstarch and water. For pumpkin oobleck, scoop out the pumpkin guts and remove the seeds (seeds in a bowl are also a fun sensory experience or you can roast them!). Next, put your seed-free pumpkin guts into a blender and add water bit by bit, blending until it is smooth and liquified. Now for the oobleck – In a bowl, slowly add and mix  $\frac{1}{2}$  cup of the pumpkin liquid to  $\frac{1}{2}$  cup of corn starch. Play with the ratios until you get the right consistency for you and add a few seeds for more sensory fun. Compare pumpkin oobleck with classic oobleck. Do they feel the same or different? Why do you think so? Beware...this one can get messy!

## READY FOR MORE?

If you are ready to take your pumpkin science to the next level, how about extracting DNA from a pumpkin? Did you know 60% of your DNA is the same as a pumpkins? That's right, you are 60% pumpkin! Check out this great experiment we love from Rosie Research and you might even get to extract and observe some DNA!

[rosieresearch.com/pumpkin-dna-extraction](https://rosieresearch.com/pumpkin-dna-extraction)

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