

All About Vines Activity



At a Glance

Discover new facts about cucumber and pumpkin vines, experiment with growing your own pumpkin, and get creative with paper quilling.



Did You Know?

Did you know that pumpkins grow on vines? We see pumpkins each fall, sometimes they are decorated and sometimes used in delicious recipes. But we don't always get to see how pumpkins grow. The pumpkin vine plays an important role in bringing nutrients to the pumpkin itself. Pumpkin vines can grow as much as six feet per day and can get as long as 30 feet! On each vine are green tendrils, that look like a spring or a coil. These tendrils help to anchor the vine and protect it from the wind. The tendrils are able to twist in a coil shape to grip onto fences, poles, other plants, or even trees. The leaves are dark green and large, with five lobes and serrated edges. Leaves have soft fine hairs covering them and the veins are easily seen. Once the plant is mature, yellow-orange flowers will form. When pollinated by a honeybee, the flower will grow into a pumpkin. It usually takes 70–100 days to harvest a nice size pumpkin.

The cucumber plant is another example of a vine plant that has tendrils. The cool thing about the cucumber plant is their tendrils have the ability to compensate for added stress, like wind, that may be placed on the plant. These coiled tendrils will actually tighten their grip by forming more coils around the structure it is attached to, and have the ability to keep their shape!

Researchers, at Wyss Institute for Biologically Inspired Engineering at Harvard University, are copying this behavior to create a better metal coil for human-use that won't untwist when too much stress is placed on it. Most metal coils when overused, like on a trampoline for instance, get stretched out and eventually need to be replaced. The new metal spring design adapts to the increased stress by increasing the number of coils and does not become overstretched. This means the coils won't need to be replaced. To learn more about how scientists and researchers are learning from nature visit: <https://asknature.org/strategy/plant-tendrils-act-as-spring/>

When a scientist or researcher learns from nature and applies what they have learned to human-needs, it is called biomimicry. To learn about biomimicry visit: <https://biomimicry.org/what-is-biomimicry/>

Curling Paper Activity



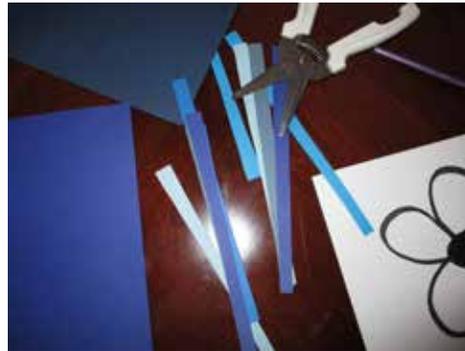
Materials:

- 8 inch x 10 inch piece of cardboard
- Black marker
- Colored copy paper strips 8 inch x ½ inch wide (construction paper and cardstock are not recommended)
- Glue stick
- Pencil
- Scissors

The art of curling paper is called quilling. It is easy, and fun! Start on your quilling journey by making a flower creation!

Directions:

1. Be sure you have plenty of 8 inch x ½ inch strips of paper cut and ready to use. You can use any colored copy paper you'd like.



2. Use the black marker to draw a flower shape on the piece of cardboard. Keep the flower shape simple.



Curling Paper Activity



3. Use your pencil as the curling tool. Wrap a strip of paper around the pencil tightly. Hold for a second, then slide the curl off of the pencil. Repeat this step several times.



4. Rub the glue stick onto the first section of the flower and place the first pieces of curled paper onto the glue.



5. Continue curling and gluing the curled paper in any pattern you wish. Be creative.



6. Allow time to dry before lifting your creation.

Planting and Growing a Pumpkin Patch Activity



Materials:

- 1 packet of Pumpkin seeds
- A sunny spot in the garden with lots of space to grow or a pot
- Small shovel
- Water

Pumpkins are very popular in the fall season. This tender vegetable needs to be planted by early-mid July in order to produce a pumpkin in time to decorate for Halloween.

Directions:

1. Prepare a sunny place in your garden by loosening the soil (you can also start your seed in a pot).
2. Plant your seeds at least 3 feet apart to allow room for the vines to spread out. If planting in rows, be sure the rows are far enough apart. Follow the directions for planting found on your pumpkin seed packet. If planting in a pot, plant several seeds.
3. Use your shovel to dig a hole about 1 inch deep. Place a seed in the hole and cover with soil.
4. Be sure to water the seeds after planting.
5. Water the plants each day, especially during long periods of time with no rain.
6. Check your pumpkin plants often. You will want to thin out the weaker plants, to allow the stronger plants to use the needed nutrients in the soil. If you planted your seeds in a pot, be sure to thin out so only one plant is left.
7. Your pumpkin will need about 70–100 days to grow. Be patient. You can record your pumpkins growth in a nature journal!
https://longwoodgardens.org/sites/default/files/wysiwyg/ED_activity_nature_journal%20%282%29.pdf
8. It is normal for the pumpkin vine to wither when the pumpkins are done growing.

Extension:

Have a contest with a friend. See who can grow the largest pumpkin by Halloween!

- Measure the circumference of the pumpkins
- Weigh the pumpkins
- Decorate the pumpkins
- Make a pumpkin-based recipe