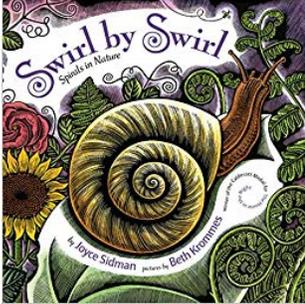


Bella's Book and Nature Club Take Home Extension Activities



Swirl by Swirl: Spirals in Nature

Written Joyce Sidman and Illustrated by Beth Krommes

We are learning about swirls and spirals that naturally occur in nature. This book looks at spirals both large and small, many of which can be found in your backyard or on a nature walk! Because you are your child's first and best teacher, please join us in the learning. Playing, talking, and sharing nature with your child can provide simple but powerful tools to teach your child important language, math, and science skills.

Love, laugh, and learn together!



Play and Learn

We learned that spirals can be found in many ways within our world - from animals, to plants, and forces of nature. We also learned that different spirals have different benefits. Water play can be a great way to create and interact with active spirals - fill a tub with water and use funnels to find swirling water. Make different size funnels by cutting the tops from a variety of plastic bottles - each one swirls differently! You can even watch the swirls as you empty a bathtub or sink. Encourage your child to **describe** to you how the water moves through the funnels and why they are different.



Talking can Teach

In the story *Swirl by Swirl*, the author uses descriptive language illustrate the benefits of a spiral; warm and safe, growing, strong, beautiful. Go on a spiral search in your home, or better yet, pretend to be spirals! Curl up and hide like hibernating animals - do you feel warm and safe? Or strong? How would you pretend to make a beautiful spiral - are you dancing and twirling? Talk about your favorite ways to be a spiral, and how it makes you feel.



Connect to Nature Together

Take a walk outside with your child to seek spirals in nature. Turn over rocks to find roly-poly bugs, dig up worms, search for snails, and inspect how flowers and leaves are arranged on your plants - spirals are everywhere! Try collecting a spiraled spider web early in the morning: spider webs are already sticky, so you can place a piece of black paper under the web and raise it up to perfectly catch the web... no glue needed!

Bella's Bit of Botany

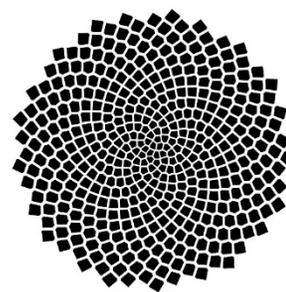
Meet Sunflowers: Sunflowers are big, bright, and happy! Every morning the plant points its flower toward the sun and the bloom follows the sun through the sky each day. Sunflowers spiral the pollen collectors where the seeds will eventually grow. This is nature's design for efficient use of space to ensure that the most sunlight reaches each part of the flower. It also makes it easy for pollinators like bees and butterflies to see and reach the flower's nectar. Below you can see the sunflower seed pattern used by the National Museum of Mathematics, which contains many spirals. You can visit <https://momath.org/home/fibonacci-numbers-of-sunflower-seed-spirals/> to learn how mathematicians and scientists count spirals, inspired by those found in nature. Don't forget to feed your own adult curiosity when exploring the world with your child!



Sunflower showing spirals



Sunflower Seed Head



Sunflower Spiral used for counting

We Use Plants: Spirals are Edible!



Ingredients

- 1 lb unsalted, shelled (not pre-roasted) sunflower seeds
- 3/4 tsp salt
- 1 tsp sugar (or honey or agave - any sweetener you prefer) (optional)
- 1 tbs olive or coconut oil (optional - for a smoother consistency)

Sunflower Seed Butter (Sun-Butter)

<https://www.prettyprudent.com/2011/08/entertaining-food/how-to-make-sunbutter-the-best-sunflower-butter-recipe-2/>

Preparation Instructions

- Toast seeds: Heat a pan on the stove, then toss sunflower seeds in the hot pan for a minute or two. Keep them moving so they don't burn.
- Place seeds in food processor with salt and sugar (or alternate sweetener)
- Process into a fine powder. Continue processing, for quite a long time (depends on your food processor) until the powder releases oils. Continue processing as mixture becomes crumbly. When it becomes moist and has a sheen, add sweetener if desired. Keep processing until mixture resembles peanut butter. If a smoother consistency is desired, add olive or coconut oil and process.
- Place in airtight container or serve immediately with yummy dippers like carrots, crackers, or apples..

Delicioso!



The Botanical Research Institute of Texas
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