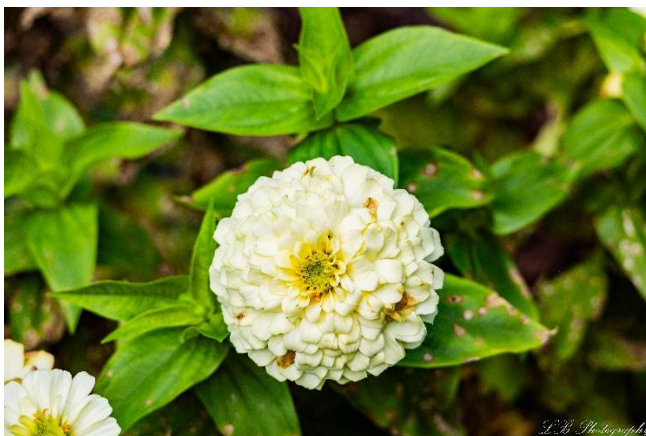


The Power of Flowering and Nonflowering Plants

Spring and summer are the best times to get into nature to explore flowering plants. Spending time in nature is the best learning experience for students. But, when the time of year isn't right, or students are in an area where access to a variety of flowering plants is not possible, *Science Learning and Exploring Through Photography* provides high-resolution images for students to work with. Be sure to print images in color. Images can also be downloaded onto a device.





Flowers come in a variety of shapes, sizes, number of petals, and colors.

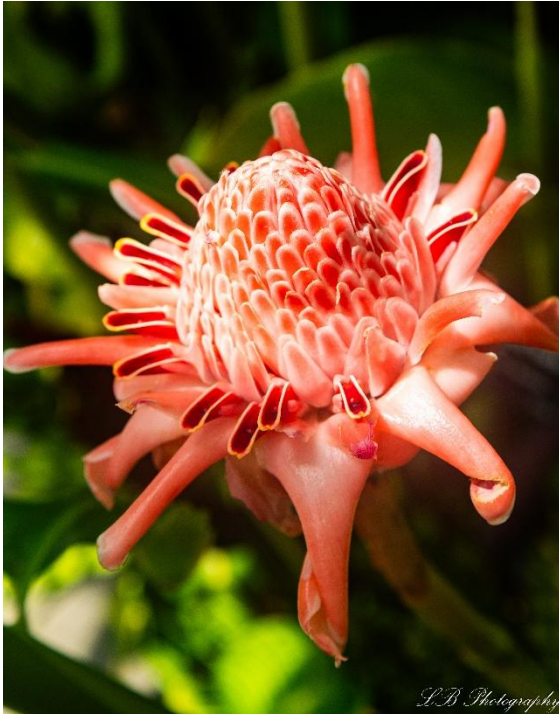
Observe these examples. What similarities do you notice? What differences?

Use a hand lens to observe closer. What tiny details can you see with the hand lens?

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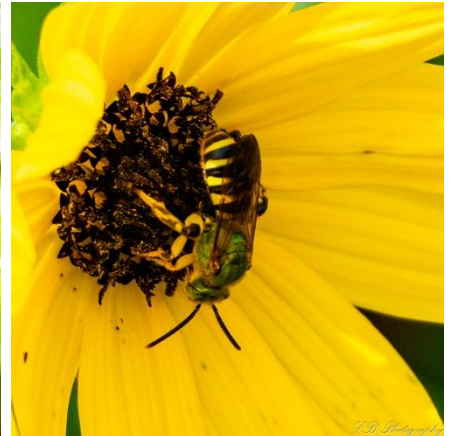




Flowers grow on plants from the ground, some grow in water, and some grow in the air. Use a hand lens to observe these flowers. Draw the shape of the petals. What other tiny details do you notice?

What petal shapes do you observe?	What other tiny details do you observe?

The main purpose of flowers is to attract pollinators to fertilize the plant. What do you notice on these flowers?



What part of the flower do they seem to be focused on?

Let's take a closer look at why that is.



With this flower, you can really see what the center of the flower looks like. The female part of the flower is slightly longer than the male. How many male parts does this flower have? How many female parts does this flower have?

The female part of the flower is called the *pistil*. The male part is called the *stamen*. A flower needs both parts in order to *reproduce* (produce seeds to make new plants).



Here's another flower where we can easily see the *reproductive* parts. Again, the female part (*pistil*) is slightly longer than the male parts (*stamen*). How many male parts does this flower have?
How many female parts?

What do you notice about the center of this flower? Can you identify the stamens and pistil?





How is this flower similar to the other flower examples?

How is this flower different from the other examples?

How many pistils does this flower have?

How many stamens can you count?



In this image, look closely at the bee. Little bits of *pollen* are sticking to the bee. The male part makes the pollen. The female part uses the pollen to produce seeds. This is the process of *pollination*.

Seeds formed in flowers help plants reproduce. You can see seeds beginning to form in the center of this flower. Some flowers will produce a lot of seeds. Some just a few.



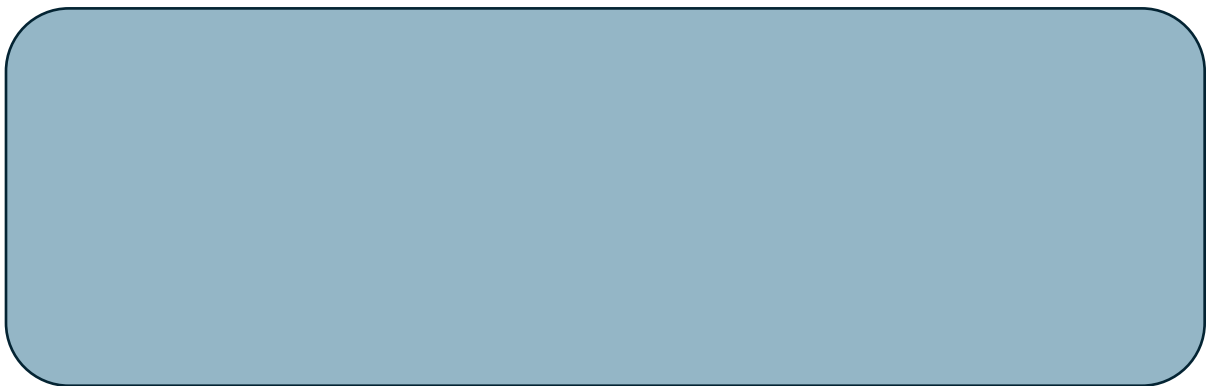
Next time you see flowers, take time to observe. What shapes and colors does the flower have? Where is the flower growing? What kind of pollinators are attracted to the flower? Take a closer look. Can you find the male and female parts of the flower? Do you see seeds forming? Flowers are fascinating.



Not all plants make flowers, but they all want to reproduce somehow. Nonflowering plants have different ways of reproducing.



Ferns are a type of nonflowering plants. Take a look at this tree fern. Use the hand lens. What details do you notice?



Here is a different kind of fern.



What do you notice along with the plant? What kind of animal do you think it is? What evidence supports your thinking?

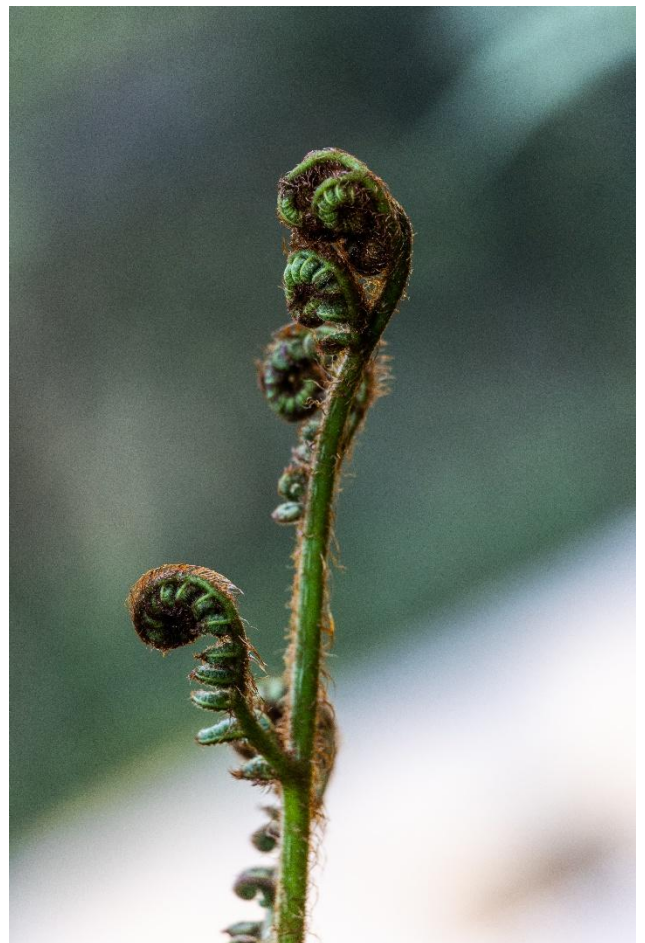
A fern frond is made up of lots of segments. Look closely. What details do you notice?

Ferns won't grow flowers. Instead, when you turn over a frond, you'll see a lot of tiny structures on the back.



The tiny structures contain *spores*. Spores are like seeds. They get carried away from the parent plant by wind and water, find somewhere to take root, and grow new plants.

Here we see the growth of a new fern frond.



Based on what you've learned about flowering and nonflowering plants, answer the following questions.

Do nonflowering plants need pollinators? Why or why not?	
Are ferns living or nonliving things? How do you know?	
How is a flower like a fern frond?	
How is a flower different than a fern frond?	
Do ferns have stamen and pistils? Why or why not?	