

Math in Nature

Activity 15 Take a Nature Walk

You might not think going for a walk in nature could lead to math, but it's true. Math and Nature are very close friends. If you know nature well, patterns, shapes, and numbers can help you pass on what you know about the world around us.

- a** Go for a walk in the forest or by the water, or in a park or your backyard. Even as you walk your kids to school you will see patterns in nature. Help your child notice numbers, shapes, and sizes.
- a** As your kids get older, longer walks are possible. Go for a walk with someone who knows nature—an elder, a fisherman, a hunter, or a park naturalist.
- a** Some leaves have 3 parts, some only 1, some have many. They all seem to be odd numbers. I wonder why? Make a collection of leaves of different shapes. When you get home, sort the leaves in many ways—by shape, by size, by colour, or in any way you see.
- a** Look at the tracks animals leave. How can counting help you figure out what animal left each track? What shapes do you see in the tracks? Draw the tracks.
- a** Listen to the sounds that birds make. What patterns do you hear? How can the patterns help you figure out what bird is calling, even if you can't see it?
- a** Count the legs as you see the creatures: 0 legs, 2 legs, 4 legs, 6 legs, 8 legs, 100 legs, 1,000 legs. They all seem to be even numbers! I wonder why?
- a** If you live by the ocean, keep track of the tides



Math in Nature

• look for numbers shapes and patterns



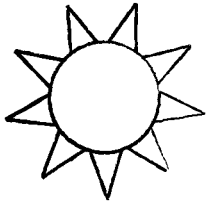
Activity 16 How Long Is a Day?

a Keep track of the time the sun rises and sets every day for a year. Pick 1 day a week, and use the chart on the next page to mark the time of sunrise and sunset on that day. Your chart will show the pattern as the days get longer in the summer and shorter in the winter. You will see a big jump when the time changes because of daylight savings time. (Spring forward, fall back.)

You can find the time of the sunrise and sunset on the TV weather channel, or in the newspaper.

You can also look it up online (for example at <http://www.earthtools.org/>). When you are online, check to see if the time they give is standard time or daylight savings time, and adjust accordingly.





HOURS OF DAYLIGHT

sunset
(p.m.)

| | | | | | | | | | | |
|-------|---------|--|--|--|--|--|--|--|--|--|
| 11:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 10:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 9:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 8:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 7:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 6:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 5:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 4:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 3:00 | | | | | | | | | | |
| | 5 Hours | | | | | | | | | |
| 10:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 9:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 8:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 7:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 6:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 5:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 4:00 | | | | | | | | | | |
| | | | | | | | | | | |
| 3:00 | | | | | | | | | | |

sunrise
(a.m.)

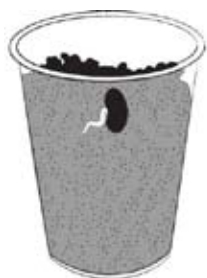
Month:

Month:

Activity 17 Plant a Seed

➤ *a* Plant some bean seeds in a small pot. Your child can plant, water, and measure the bean as it grows. Beans are ideal because they grow very quickly.

➤ *a* Plant some seeds around the outside of a clear plastic or glass pot, so you can watch them sprout. First line the pot with a piece of paper towel, then put the soil into the pot. Slip the bean seeds between the paper towel and the side of the pot and they will be easy to see. Put the seeds in various positions (i.e., on end, rounded side up, rounded side down). Water and watch as the roots all go down and the stem goes up, no matter how the seeds are placed.

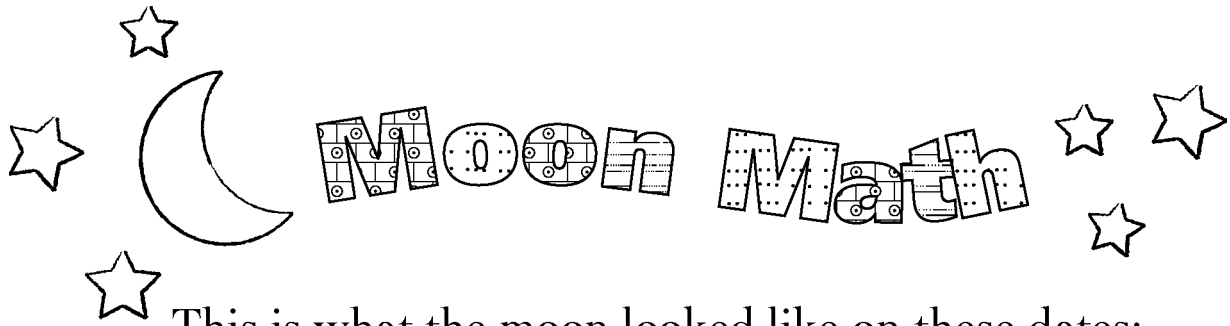


Activity 18 How Does the Moon Change Shape?

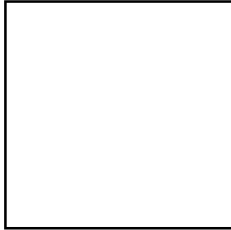
In the fall, winter, and spring, we can see the moon earlier in the evening, because the days are shorter. This means that your kids are likely to be up late enough to see the moon and make the drawings.

- a** Start sometime when the moon is full, and look at the moon together. Talk about the shape, and draw it and write the date on the drawing. About a week later, make another drawing, and so on every week for 6 to 8 weeks. If you like, you can use the chart on the next page to keep track of your drawing.

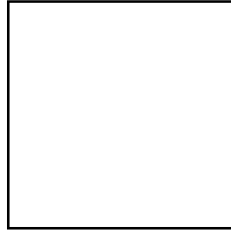




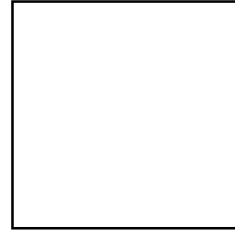
This is what the moon looked like on these dates:



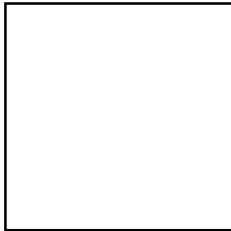
date: _____



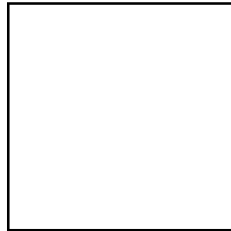
date: _____



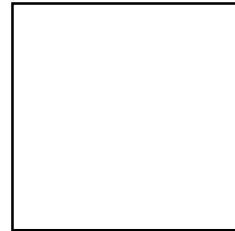
date: _____



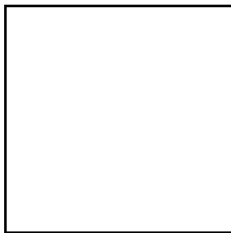
date: _____



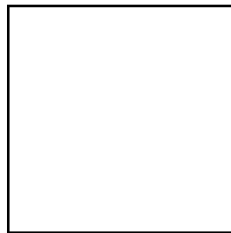
date: _____



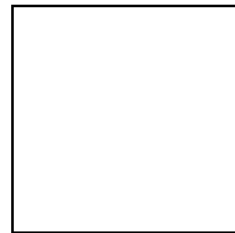
date: _____



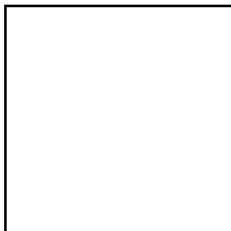
date: _____



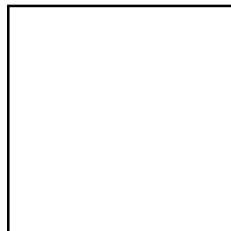
date: _____



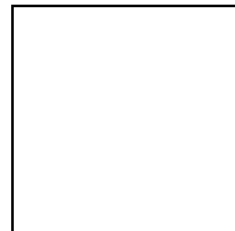
date: _____



date: _____



date: _____



date: _____

Draw the moon on the same day every week for a few weeks.
What patterns do you see?