Peterborough Victoria Northumberland and Clarington Catholic District School Board

Math Moment…

Math is Everywhere in Nature

The next time you are outside with your child, stop and look around. Take some time to notice all of the amazing shapes and patterns in the world around you. Mathematics forms the building blocks of the natural world and can be seen in amazing ways. Here are a few examples.

The Fibonacci Sequence:

Named for the famous mathematician, Leonardo Fibonacci, this number sequence is a simple, yet wonderful pattern. It is based on the 'rabbit problem'. The sequence begins with the numbers 1 and 1, and then each subsequent number is found by adding the two previous numbers. Therefore, after 1 and 1, the next number is 2 (1+1) and the next number is 3 (1+2) and so on leading to 1, 1, 2, 3, 5, 8, etc.

The great thing about this sequence is that it can be seen in nature. When you see a pinecone, take a look at the number of spirals. The same is true for a pineapple or the seeds in a sunflower. The numbers in this sequence also form a unique shape known as a Fibonacci spiral, which again, we see in nature in the form of shells, flowers, and leaves.

Fractals in Nature:

Fractals are another fascinating mathematical shape that we seen in nature. A fractal is a repeating shape. In other words, if you were to zoom way in or zoom way out, the same shape is seen throughout. Fractals make up many aspects of our world, including snowflakes, the leaves of ferns, tree branches, and the branching of neurons in our brain. Learn more about fractals and how we see and apply them in our world today at the Fractal Foundation.

Hexagons in Nature:

Another fantastic feature in nature are hexagons. The most common hexagons can be found in a bee hive. These are regular hexagons that have 6 sides of equal length. Bees build their hive using a tessellation of hexagons. But did you know that every snowflake is also in the shape of a hexagon?

We also see hexagons in the bubbles that make up a raft bubble. Although we usually think of bubbles as round, when many bubbles get pushed together on the surface of water, they take the shape of hexagons. Try it sometime!

Concentric Circles in Nature:

Another common shape in nature is a set of concentric circles. Concentric means the circles are all different sizes, one inside the other. A common example is in the ripples of a pond when something hits the surface of the water. But we also see concentric circles in the layers of an onion and the rings of trees that form as it grows and ages. If you live near a wooded area, try looking for a fallen tree to count the rings.

Math in Outer Space:

We can see many of the same shapes and patterns that we have on earth in outer space. For example, the shape of our Milky Way Galaxy is a Fibonacci spiral. The planets orbit the sun on paths that are concentric. We also see concentric circles in the rings of Saturn.
Scientists also state that there is unique symmetry between the earth, moon and sun that makes a solar eclipse possible. No other planets seem to have this happen. Try researching more about this with your child.

Isn't our world and universe remarkable!

How many others examples can you find with your child this month?

Check out May's Math Problem! Share your strategies with your family or @PVNCCDSB using #PVNCLearns #PVNCMath!

How many steps would it take to walk around Lake Ontario? How much time would it take?

Use pictures, words, or numbers to explain your strategy.