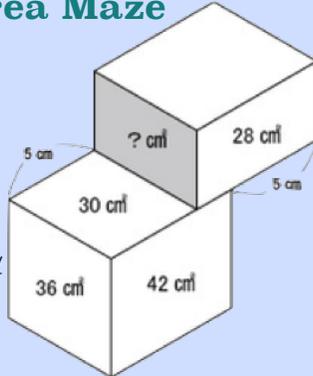


# Mathematics

To find our previous newsletters, click the link found here: [STEM East Newsletters](#)

## 3D Area Maze

Can you figure out the value of the question marks (whole numbers only)?



[https://wordplay.blogs.nytimes.com/2015/08/17/naoki-2/?\\_r=0](https://wordplay.blogs.nytimes.com/2015/08/17/naoki-2/?_r=0)

## Spirals in Nature

This well known pattern can be found in nature. What number do you think comes next? Why?

1, 1, 2, 3, 5, 8, 13...

Can you find one of these objects in or around your home? You may observe spirals winding in opposite directions. Can you identify how the spirals represent the pattern above?



Visit the site below for an online extension of this activity.

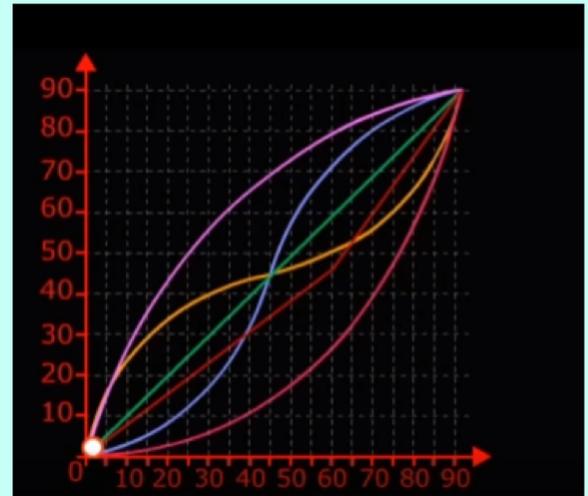
<https://www.experiencingmaths.org/en/read-the-nature/>



Want to share what you are doing from this newsletter? Share it with us on [flipgrid.com/asdesteamshowcase20](https://flipgrid.com/asdesteamshowcase20) Use your Microsoft Login to access the grid.

## One Recipient - One Curve

The six containers have the same height (90cm) and the same volume (90L) The graph shows the fill level of the containers as a function of time. Can you match each curve to the corresponding container? How do you know which is which? Can you guess what the dimensions of the containers are? Can you design another container that would have a different curve? <https://www.experiencingmaths.org/en/constructing/?onglet=2>



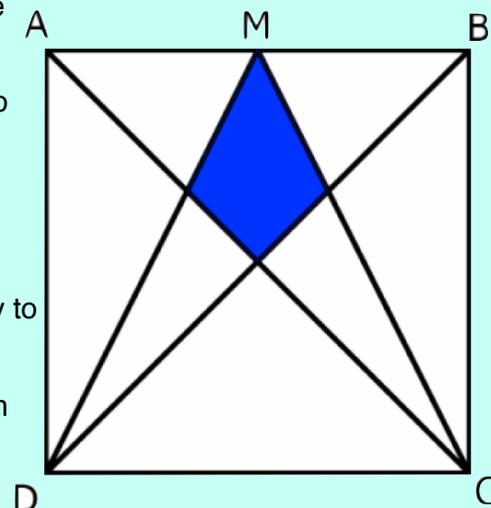
## Kite Area

ABCD is a square. M is the midpoint of side AB.

Diagonal lines are drawn to form the blue shaded quadrilateral.

**What fraction of the total area is shaded?** Can you think of more than one way to prove your solution?

Compare your solution with other methods: <https://rich.maths.org/8301>



For more information, contact Bryan Ouellette Subject Coordinator for Math & Science 6-12  
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# Science

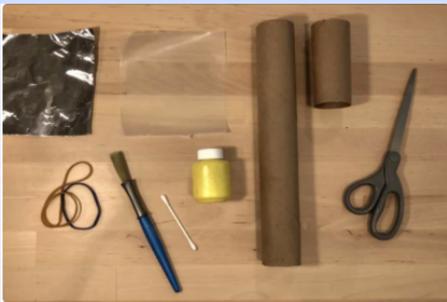
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## Design Challenge

### Maker-space Kazoo

A kazoo uses a *membrane* or *resonator* to produce sound. When you hum, talk or sing into a kazoo the air produced by your voice vibrates the membrane or resonator, creating its unique buzzing sound. Make your own kazoo. Experiment with different designs. How does this change the sound produced by the kazoo?

- Paper rolls of various sizes
- Aluminum foil or wax paper to create your resonator
- Elastic bands
- Scissors to cut a small hole in tube
- Decorations



<https://www.instructables.com/id/Kazoo-MakerEd-at-Home/>



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## The Tethered Goat

Imagine a goat tied to the corner of a shed by a rope. The shed is 4 feet by 6 feet. The rope is 6 feet long.

What do you wonder about this situation?

Draw a picture of the situation.

What questions do you have?



Extension: The sun rises to the east of the shed and sets to the west. The goat would appreciate some shade. Where should you plant a tree? What tree would you plant? Explain your thinking.

Activity from: *Mathematical Mindsets* by Jo Boaler

## LESSONS FROM MOTHER EARTH

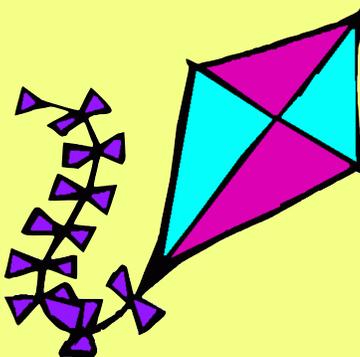
'Three Sisters' planting originates with the Indigenous Peoples of North America (what Indigenous Peoples call 'Turtle Island'). With the gardening season starting up – why not try this traditional, effective planting technique while connecting with Mother Earth and growing food for your family! You can make a plan of your garden using the grid paper found here: <https://www.hand2mind.com/pdf/gridpaper.pdf>

For more information on this type of planting, visit: <https://www.youtube.com/watch?v=kl6MeYIR6TI>

Wela'lin (Thank You)



## Design a Kite



Have you been outside lately? If so, you would've noticed that we've had some pretty windy weather. We challenge you to design your very own kite with any materials you have at home (make sure to ask a guardian for permission). Track your data when testing your kite. Can you alter your design to make it more successful? How could you display this data?

For more information, contact Bryan Ouellette Subject Coordinator for Math & Science 6-12  
[bryan.ouellette@nbed.nb.ca](mailto:bryan.ouellette@nbed.nb.ca)