40 Weeks of Math Challenges

Week 25

These visual math challenges have been created to intrigue and inspire your children. They are designed to be hands on, open-ended inquiries, to challenge them to think deeply about the world around them.

Each week a new set will be released with four levels.

- Preschool

- Years 1/2 (approx. age 6-8)

- Year 3/4 (approx ages 8-10)

- Year 5/6 (approx. ages 10-12)

I hope you enjoy exploring the ideas with your children! The challenges don't require any special resources, however your children will need a 'Math Journal' to record their discoveries. Any notebook will work, but if you can, try to encourage them to use a Grid book.

You are welcome to freely print these cards for your family but please respect our creative copyright and link back to the original file on our web page to share with others. Thanks, Jo
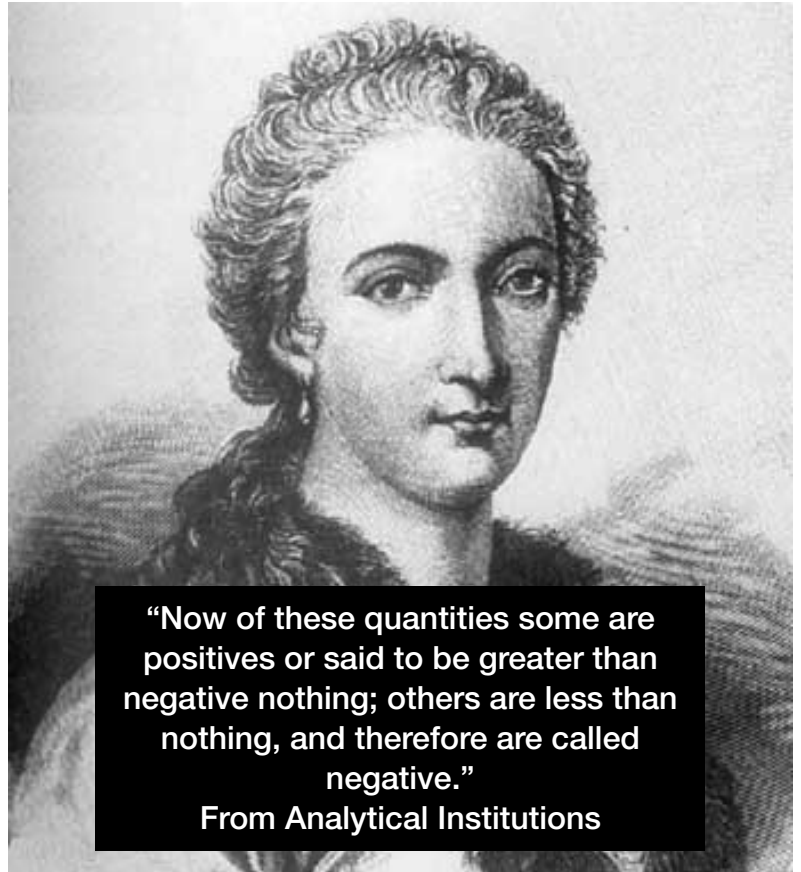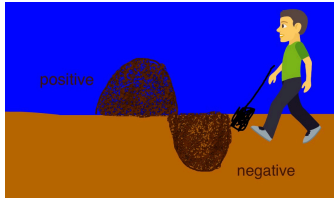
Find me on Instagram @jo_mathinnature and Nature Study Australia

Image from wikimedia commons https://commons.wikimedia.org/wiki/File:Maria_Gaetana_Agnesi.jpg

Maria Gaetana Agnesi

She was the first woman to write a mathematics handbook and the first woman appointed as a mathematics professor at a university. (1718-1799)

1. Draw a line across a page dividing it into two. The top colour blue. This is above ground. The bottom colour brown. This is below ground. What happens if a man comes and digs a hole? As the hole gets bigger where will you put the dirt? This is my picture, can you draw a hill and hole picture?
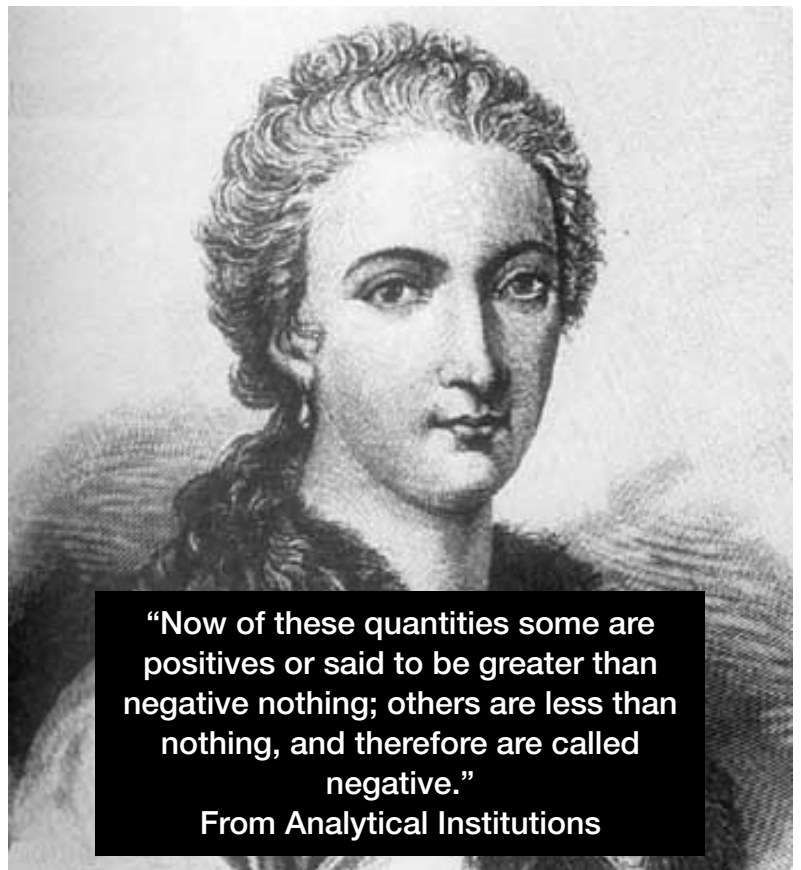

"Now of these quantities some are positives or said to be greater than negative nothing; others are less than nothing, and therefore are called negative."
From Analytical Institutions

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1. A negative number is a number that is less than nothing. Does that sound strange? How can you have less than nothing?

2. We use negative numbers when we talk about things like temperature. 0°C is the point at which water freezes, but the temperature outside can be colder than this! Some mornings, where I live, have been -5°C this winter. How cold does it get where you live? Find the coldest temperature is Australia. Find the coldest temperature ever recorded on Earth. Draw a thermometer in your journal.
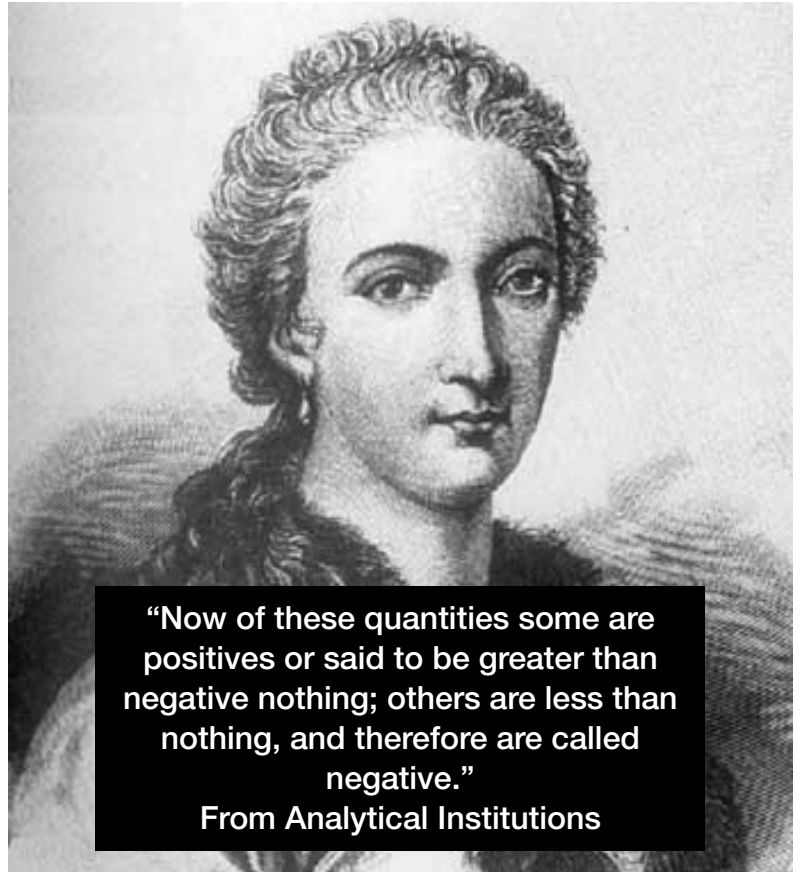
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1. One of the first things Maria talks about in her book call Analytical Institutions is negative numbers. Numbers that are less than 0.

2. Draw a number line in your journal showing positive and negative numbers from -20 to 20.

3. Show on your number line how to add 12 to -7.

4. Can you make some of your own math problems with your number line?

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1. You have been looking at square numbers for the last few challenges. 9 is a square number. It can be shown as $3 \times 3 = 9$, or by $3^2 = 9$

2. A number multiplied by itself is called a square of that number. If you multiply a number by itself three times, this is the cube, or third power, of that number. $3 \times 3 \times 3 = 27$ or 3^3.

3. Use the square numbers you made with Fibonacci (week 23) and turn them into cube numbers.

"- the product of a number multiplied by itself is called the Square of that number, or it's second power."
From Analytical Institutions