CURRICULUM, PEDAGOGY AND BEYOND

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Learning the language of Maths: Unlocking truths though word origins

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What is a Mathematics teacher?

"**Mathematics** looks and sounds vaguely like **arithmetic**, but the two words have no connection with each other, and the ancestor of **mathematics** had nothing to do with numbers at all. It comes from the Greek word *methema*, which meant 'science', and was based on the verb *manthanein* meaning 'to learn'. Science involves numerical reasoning, and by the time the term came into English in the 16th century, as **mathematics**, it was being applied specifically to certain sciences, such as astronomy and physics, in which geometrical calculations played an important part. Over the following hundred years or so it narrowed down to its modern sense, 'the science of numbers'."

Source: John Ayto's *Oxford School Dictionary of Word Origins* (2013, Oxford UP).

How do we teach the language of Mathematics?

1. Teach the basics
2. Create a language-rich culture
3. Take (and make) opportunities

Teach the basics:

Start at the very beginning

Teach the Basics: Easy as 1, 2, 3…

	LATIN	GREEK
1	Unum	Ena
2	Duo	Dio
3	Tria (Tres)	Tria
4	Quattor	Tessera
5	Quinque	Pende
6	Sex	Eksi
7	Septem	Epta
8	Octo	Okto
9	Novem	Enea
10	Decem	Deka

Sources: www.fluentin3months.com/greek-numbers/ and www.omniglot.com/language/numbers/latin.htm

What do you notice?

	LATIN	GREEK
1	Unum	Ena
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Sources: www.fluentin3months.com/greek-numbers/ and www.omniglot.com/language/numbers/latin.htm

Teach the Basics: Algebra

Source: Google.com

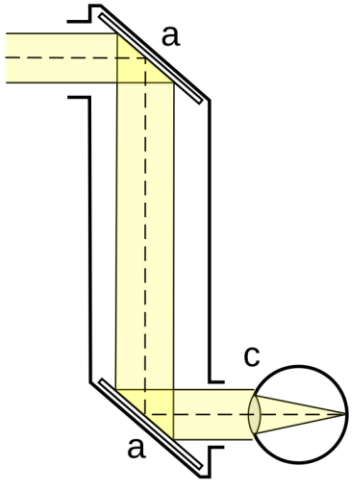
Teach the basics: Area and Perimeter

Area

"**area** was originally a Latin word, meaning 'a piece of ground'."

Perimeter

"**perimeter** comes via Latin from Greek *perimetros*, based on the prefix *peri-* meaning 'around' and *metron* meaning 'a measure'."



How will this knowledge help your students?

Source: John Ayto's *Oxford School Dictionary of Word Origins* (2013, Oxford UP).

Create a language-rich culture:

Why is a square called a square?

Create a language-rich culture:

Is a rectangle a square? Is a square a rectangle?

Rectangle

rectus angulus (Latin), which translates as “straight angles” (or right angles).

Square

“Middle English: shortening of Old French *esquare* (noun), *esquarre* (past participle, used as an adjective), *esquarrer* (verb), based on Latin *quadra* ‘square’.” – Google.com

How will this knowledge help your students?

Source: Google.com

Create a language-rich culture:

Using the given information from the book, I searched for a shape that matches the description; an icosadodecahedron. by disecting the word into the meaning of it's base word:

$$\frac{\text{icosa}}{20} + \frac{\text{do}}{2} + \frac{\text{deca}}{10} + \frac{\text{hedron}}{\text{face}} = 32 \text{ face}$$

Source: AMT Enrichment 2024 student paper (used with permission)

Take (and make) opportunities…

What is a polygon?

poly = many

gon = knee

Take (and make) opportunities: The Gon Game

GON

Latin: knee

English: angle

ACUTE

Latin: Sharpen your focus

RIGHT

Latin: upright angle

OBTUSE

Latin: beat against

STRAIGHT

English: stretch

REFLEX

Latin: bend back

GET READY…

Make the angle shown with your knee.
You’re out if you make a wrong move
or if the slide has moved on.
The winner is the last one standing!

What is a diagonal?

dia = through

gon = knee/angle

Take (and make) opportunities but…

…don’t forget to teach Maths!

Median = *medius* (Middle Latin), meaning “mid”.

Mean = *medius* (Middle Latin), meaning “mid”.

Mode = *modus* (Latin), meaning “measure”.

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