

2020.




THE YEAR MOST KIDS REALIZED



THEIR PARENTS CAN'T DO MATH.





Don't Say That!
Don't Imply That!
Do Say This!

Fiona Allan
14 July 2021

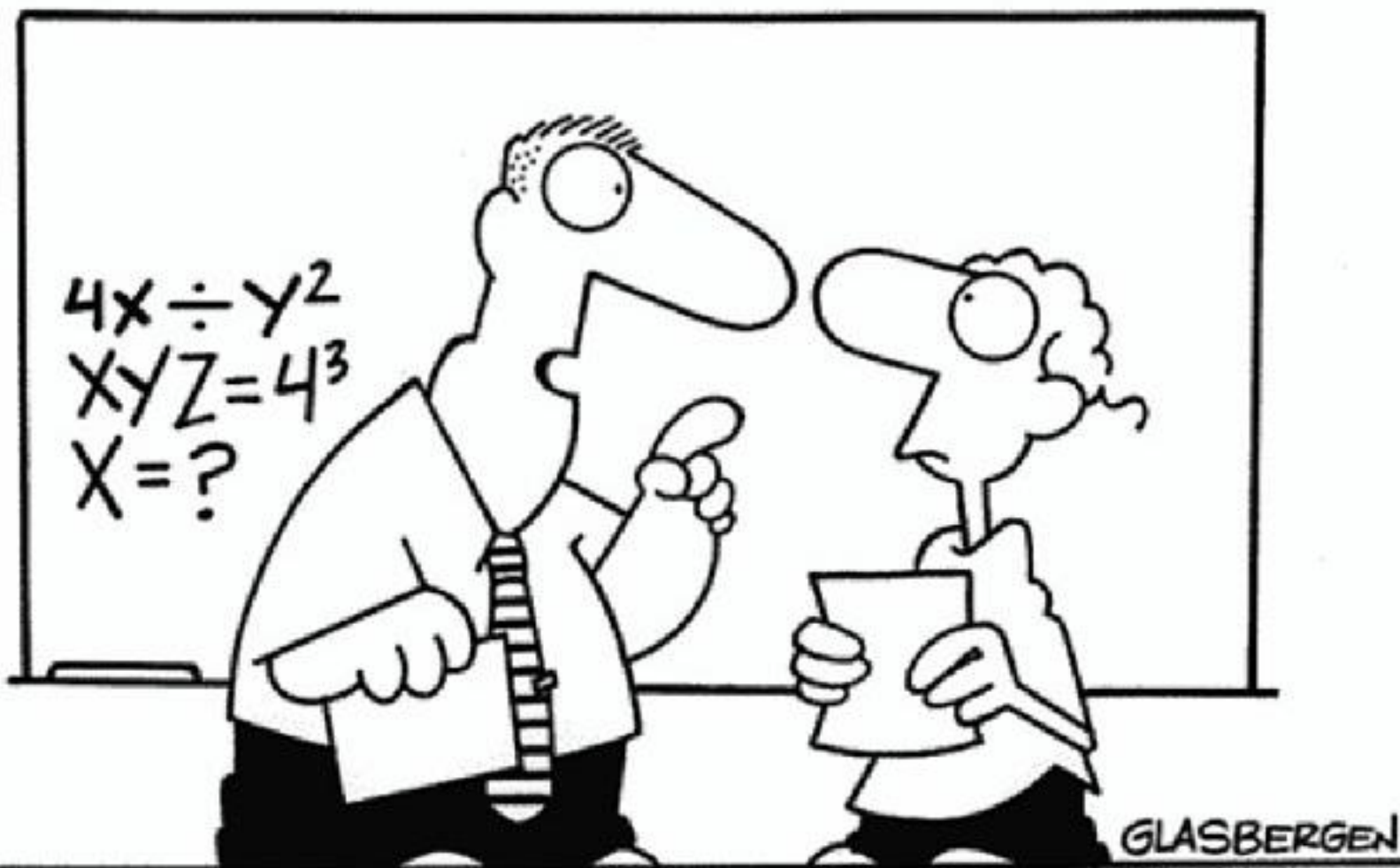
TEACHER!
WILL WE EVER
USE ANY OF
THIS ALGEBRA?

YOU WON'T,
BUT ONE OF THE
SMART KIDS
MIGHT.



DON'T LOOK SO WORRIED.
WE DON'T EXPECT MUCH OF YOU.





“Algebra class will be important to you later in life because there’s going to be a test six weeks from now.”



**"It's important to learn math because
someday you might accidentally buy
a phone without a calculator."**



“Why is it important for today’s kids to learn algebra? Because I had to learn this junk in school and now it’s your turn, that’s why!”

Don't say that!

- You always take the small number from the big number
- The more digits there are, the bigger the number
- To multiply by 10, simply add a 0 to the end of the number
- To divide by 10, take off the last number and that becomes the remainder

Don't say that!

- A fraction has a top number and a bottom number
- In a fraction the big number is always on the bottom
- If it's a rectangle, it's not a square
- When you multiply (or divide by 10) the decimal point moves

Don't say that

- When you multiply two numbers together, you always get a bigger number
- What other rules do we give children that don't work in later years?
Write your suggestions in the chat box.





Don't imply that

'=' means 'this is the next thing I thought of'

For example: $2 + 3 = 5 + 6 = 11 \times 7 = 77$

But $2 + 3 \neq 5 + 6 \neq 11 \times 7 = 77$

Why? $2 + 3 =$ $4 + 6 =$ $10 - 7 =$

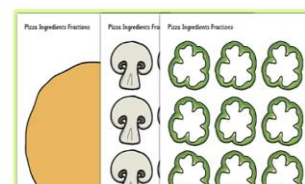
Don't imply that

Fractions are always parts of pizza



Pizza Fractions Game

★★★★★ ∨ 50



Pizza Ingredients Fractions Cut and Stick Activity

★★★★★ ∨ 43



Pizza Fractions Halves Quarters and Thirds Activity Sheets

★★★★★ ∨ 18



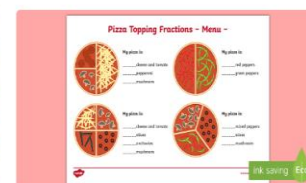
Pizza Fractions PowerPoint

★★★★★ ∨ 43



Pizza Fraction Display Posters

★★★★★ ∨ 27



Pizza Topping Fractions Menu Worksheet

★★★★★ ∨ 1

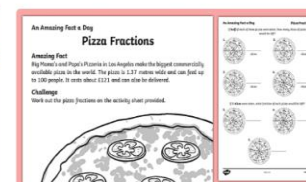


Pizza Fraction Display Posters (Symbols)



Pizza Fractions

★★★★★ ∨ 16

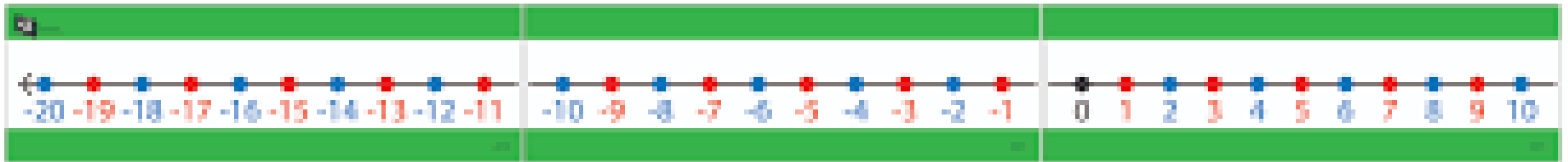
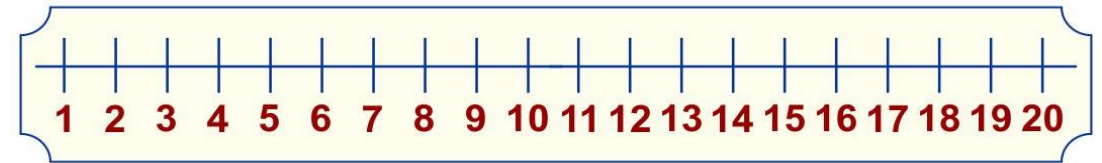
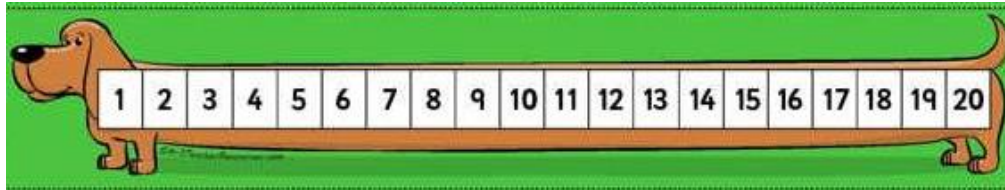


Pizza Fractions Worksheet

★★★★★ ∨ 1

Don't imply that

The number system starts at 0





"Count 1 to 10?"

thepictureland.com



"1, 2, 3, 4, 5, 7, 8, 9, 10."



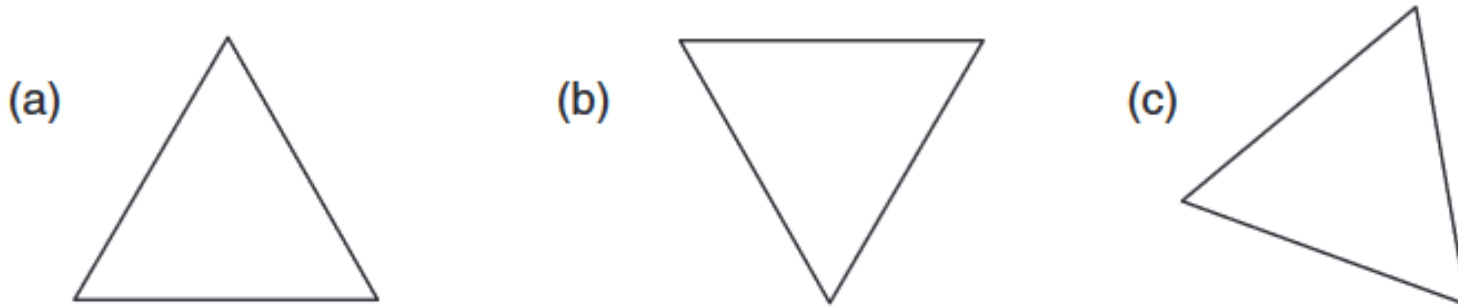
"Where is 6, you didn't count it"



"Today in the morning news, I heard that 6 died in a road accident."

Don't imply that

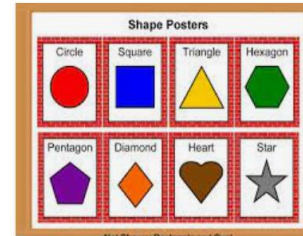
How many sides do these figures have?



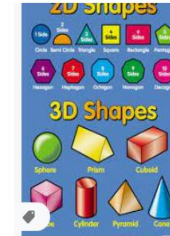
A child may respond the (a) has two sides and a 'bottom', shape (b) has two sides and a top and only (c) has three sides.

Don't imply that

All shapes have equal sides



Shape Posters : Classroom-Printables ...
pinterest.com



2D and 3D Shapes Teaching Aids
brightideasteaching.co.uk



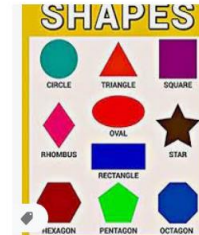
Use these colorful posters for shapes
pinterest.com



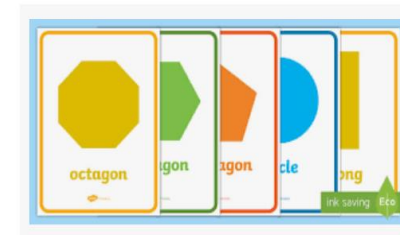
32 Pieces Shapes Classroom Poster
amazon.co.uk



Shapes Teaching Classroom Display
brightideasteaching.co.uk



SHAPES Chart by School Smiles
amazon.co.uk



FREE! - *Free* Posters on 2D Shapes ...
twinkl.com.au



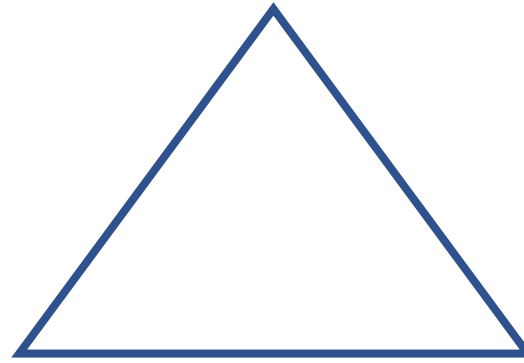
Shapes kinder poster
pinterest.com

Found on Google:

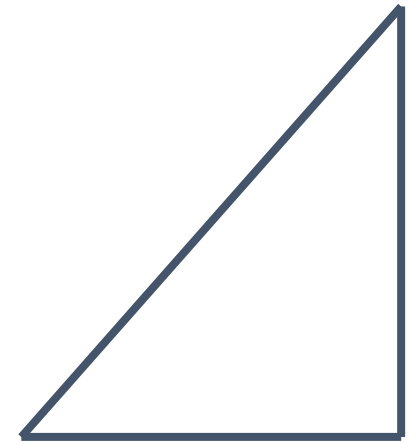
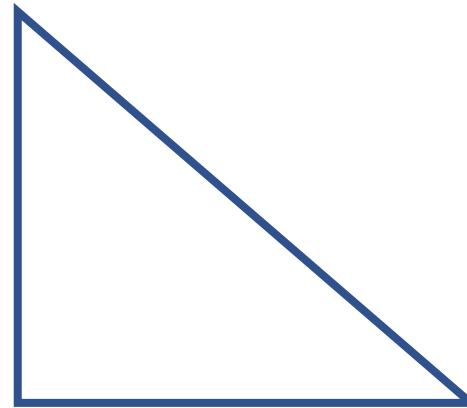
- 'What do I call an irregular quadrilateral with 6 sides?'
- 'What is an irregular 8-sided shape called?'
- 'Can I call a 6-sided polygon a 'hexagon' even if the sides aren't equal?'

Don't imply that

- All triangles look like this:



- All right-angles triangles look like this:

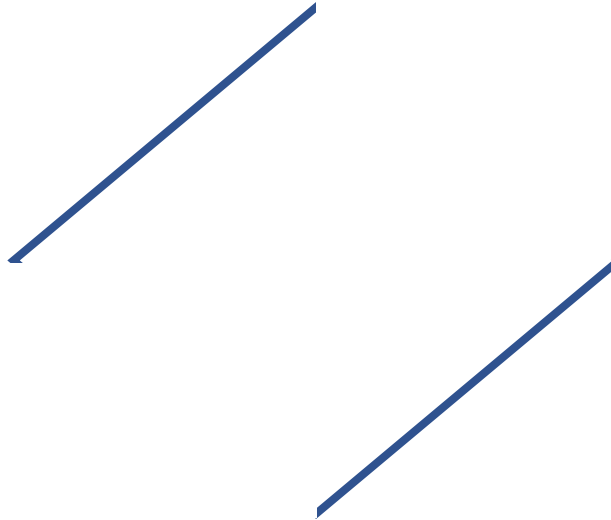


Don't imply that

- These are parallel lines:



- These lines are not parallel:



Don't imply that

You never get a minus sign
at the beginning of an equation...

Solve the Quadratic Equations

Name: _____

Complete the Square

Worksheet # 1

1.) $10x^2 + 20x - 71 = 9$

2.) $x^2 - 20x + 49 = -2$

3.) $2x^2 + 16x - 70 = -4$

4.) $x^2 + 12x - 20 = 8$

5.) $x^2 - 16x + 50 = 2$

6.) $10x - 20x - 83 = -3$

7.) $x^2 - 18x - 56 = 7$

8.) $3x^2 - 18x - 42 = 6$

9.) $x^2 + 4x - 25 = 7$

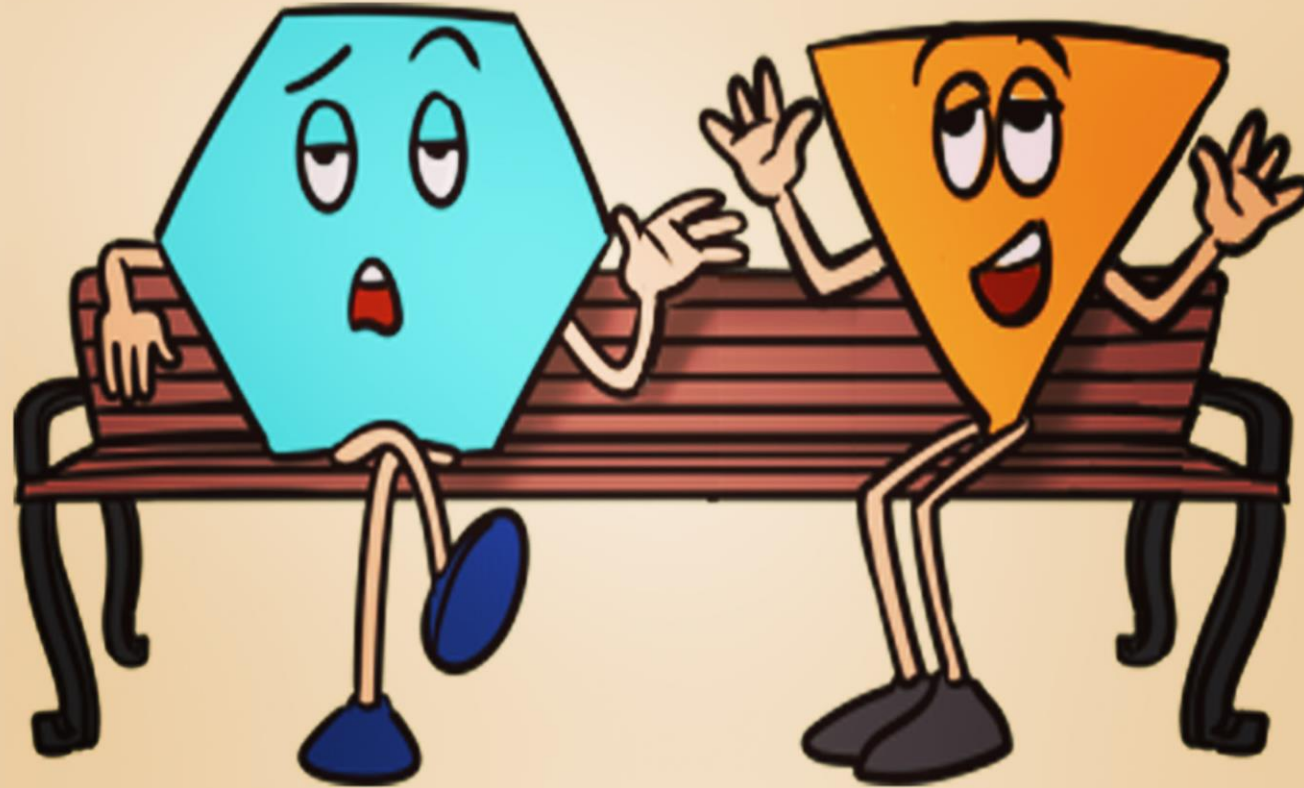
10.) $x^2 - 16x - 20 = -3$

Language in the Maths classroom

Label your axes!



**DUDE, AREN'T CIRCLES LIKE,
TOTALY POINTLESS.**



TOTALLY, DUDE.

MATH JOKES, SONGS AND GAMES @ NUMBEROCK.COM

**Are you sure I make a
difference?**



I'm positive!

**I HAD AN ARGUMENT
WITH A 90 DEGREE
ANGLE...**

TURNS OUT IT WAS RIGHT.



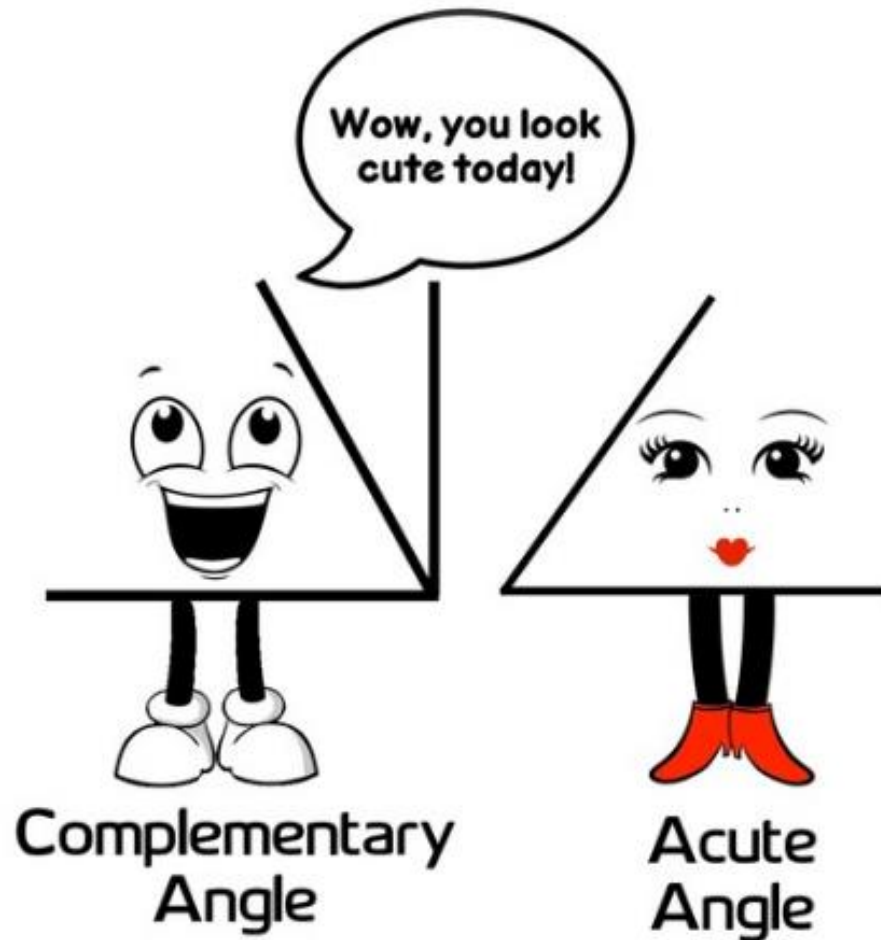
**K5
MATH**

**Why are obtuse angles
so depressed?**



Because they're never *right*.

Sometimes word play helps them remember!



Never mention the number 288.
It's just two gross.



<http://www.peterandgarybaker.com>

Maths words can confuse learners

complex

degree

differentiation

digit

even

function

gross

integration

key

metre (meter)

odd

operation

power

plot

prime

problem

product

root

table

series

volume

yard

Can you think of any more words which mean one thing to the general public and something different in the Maths classroom? Type them into the chat.

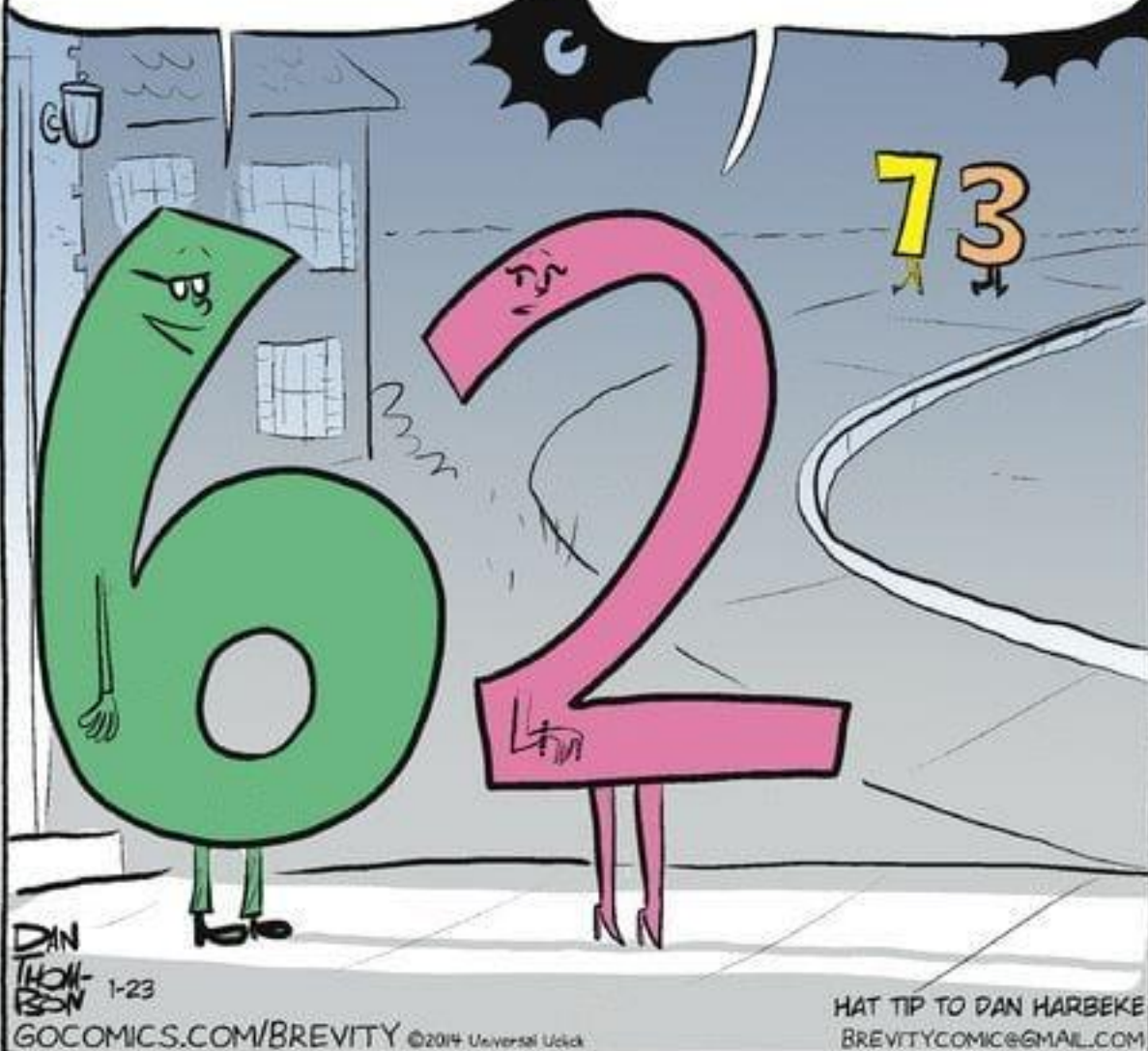
Aww, how cute. He has
an imaginary friend!



Keaton Stroos '10

BOY OH BOY,
GOOD OL' SEVEN
WAS IN PRIME
FORM TONIGHT.

I GUESS. THEY
JUST STRIKE
ME AS SUCH
AN ODD COUPLE.

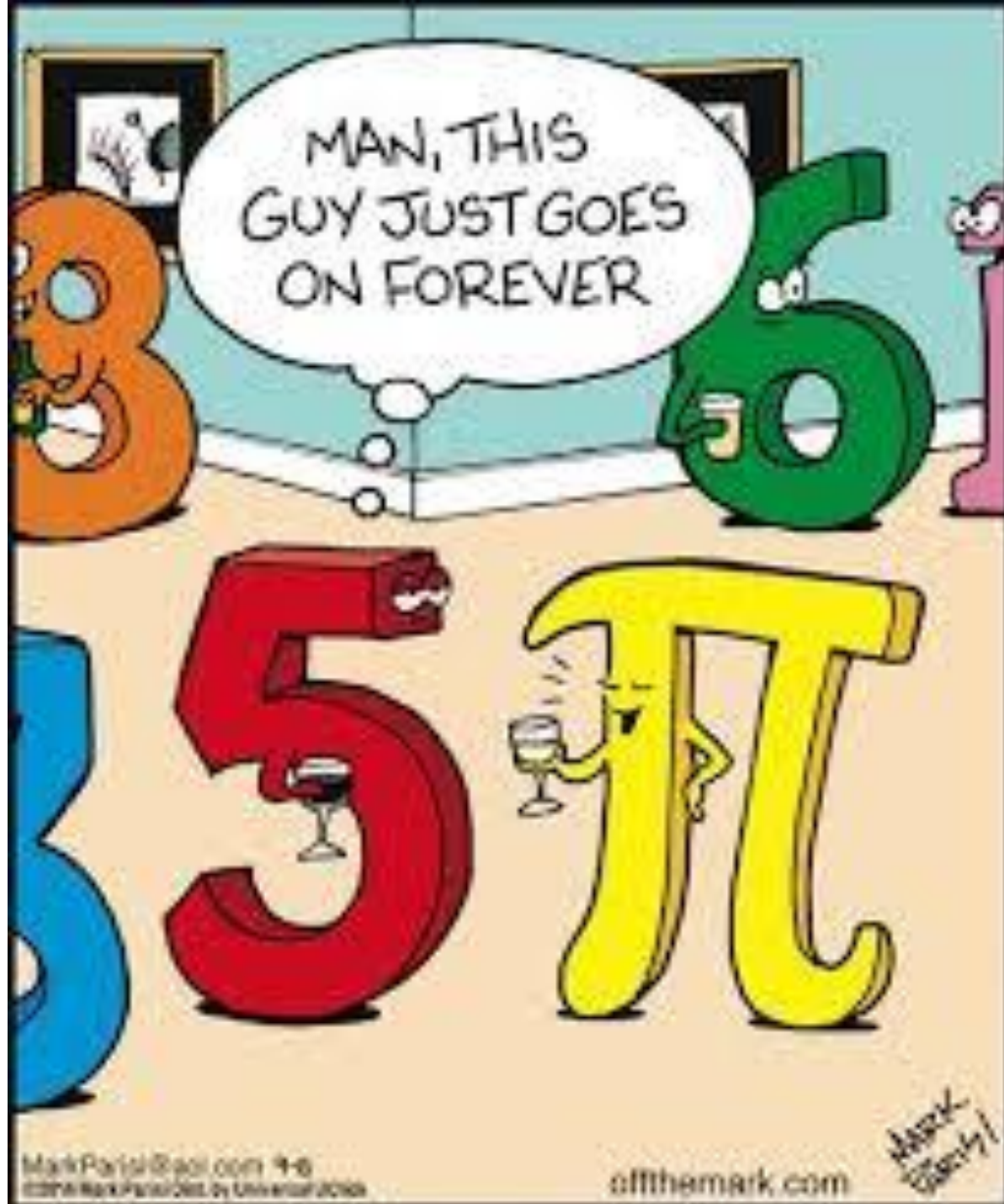


DAN
THOMSON

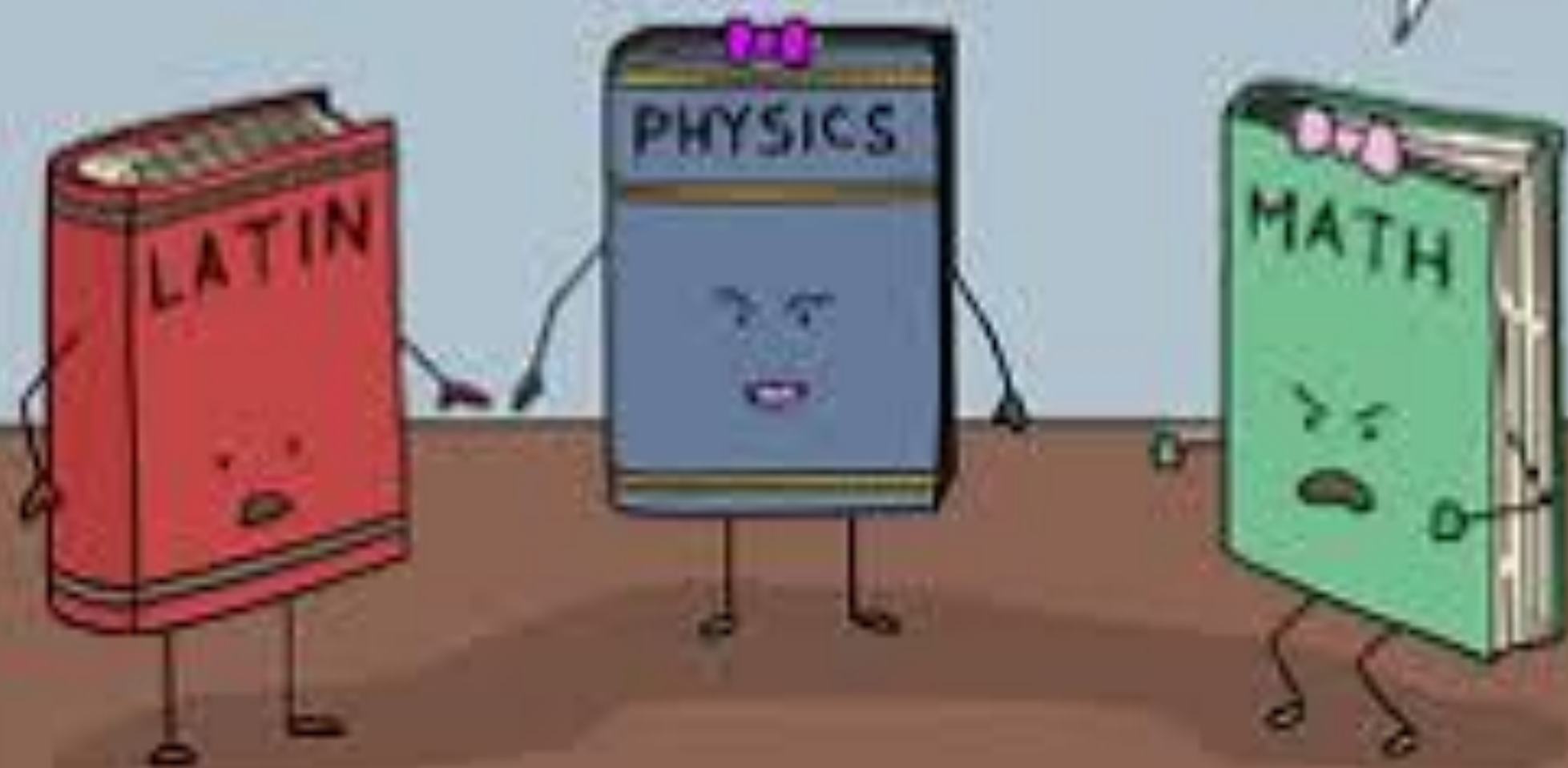
1-23

GOCOMICS.COM/BREVITY ©2014 Universal Uclick

HAT TIP TO DAN HARBEKE
BREVITYCOMIC@GMAIL.COM



Oh my god I hate you, Kyle! You just
used me to get here!





Do say this!



Raising maths attainment through enhanced pedagogy and communication

Results from a 'teacher-level' randomised controlled trial

Richard Churches
Fiona Allan

Research summary

CfBT Education Trust has had a long engagement with the adult learning sector and particularly with the area of adult numeracy. The organisation has also published two research papers on neuro-linguistic programming (NLP) and its potential in education, including a systematic literature review. The literature on adult numeracy suggests that pedagogy may be less effective if the relationship between teacher and learner does not reflect sensitivity to attitudes, beliefs and classroom emotional climate, areas in which advocates of NLP claim effectiveness.

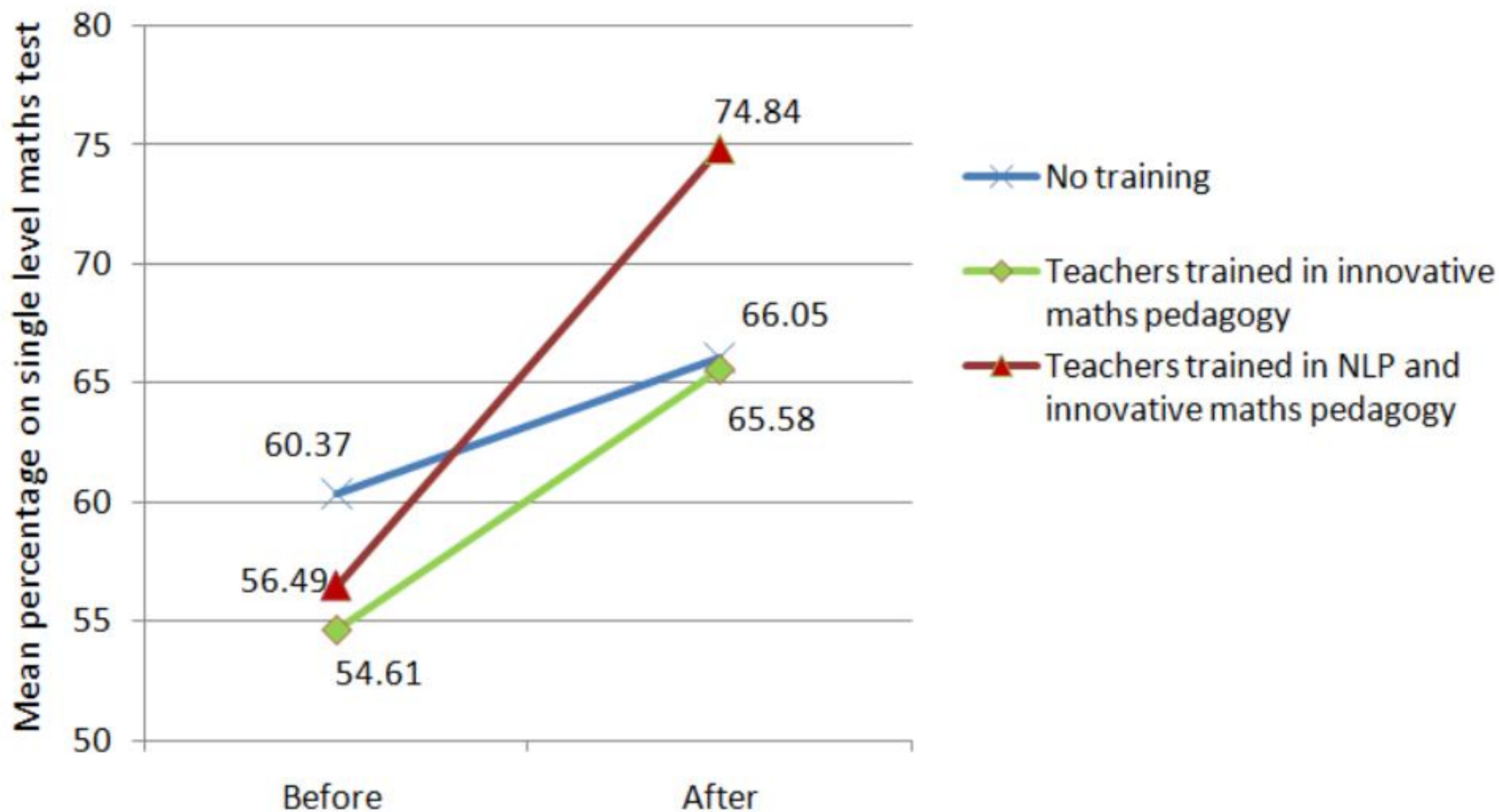
The research design for the present study took the form of a large-scale randomised controlled trial carried out over a six-month period. The study used established government adult numeracy tests before and after the three interventions. The analysis compared the effects of: a) teachers trained in approaches to hypnotic language and body language (as they appear in the NLP model) combined with innovative maths pedagogy, with b) teachers who just received maths continuing professional development (CPD), and c) a baseline control condition (learners whose teachers received no training or CPD).

The addition of NLP training produced a significant improvement in maths attainment. The increase in mean difference for this group was over three times that of the control group and approximately one and a half times that of the 'maths training only' group. Results suggest that some NLP training may be helpful to maths teachers where a baseline of effective pedagogy is in place.

The results of this study support approaches recommended by the National Centre for Excellence in the Teaching of Mathematics, while indicating that teachers' communication skills amplify or attenuate the effectiveness of such pedagogy, and that where teachers receive training in communication strategies from therapy that aims to create a stable emotional climate, attainment is significantly greater.

Future research may wish to look at whether simply training language patterns or body language still results in the same increase in attainment.

Maths attainment before and after treatment as a function of three conditions



The principals of suggestion (as defined in NLP)

There is a surface structure to language (the actual words) and a deeper structure (their meaning and what is suggested)

Notice the difference between:

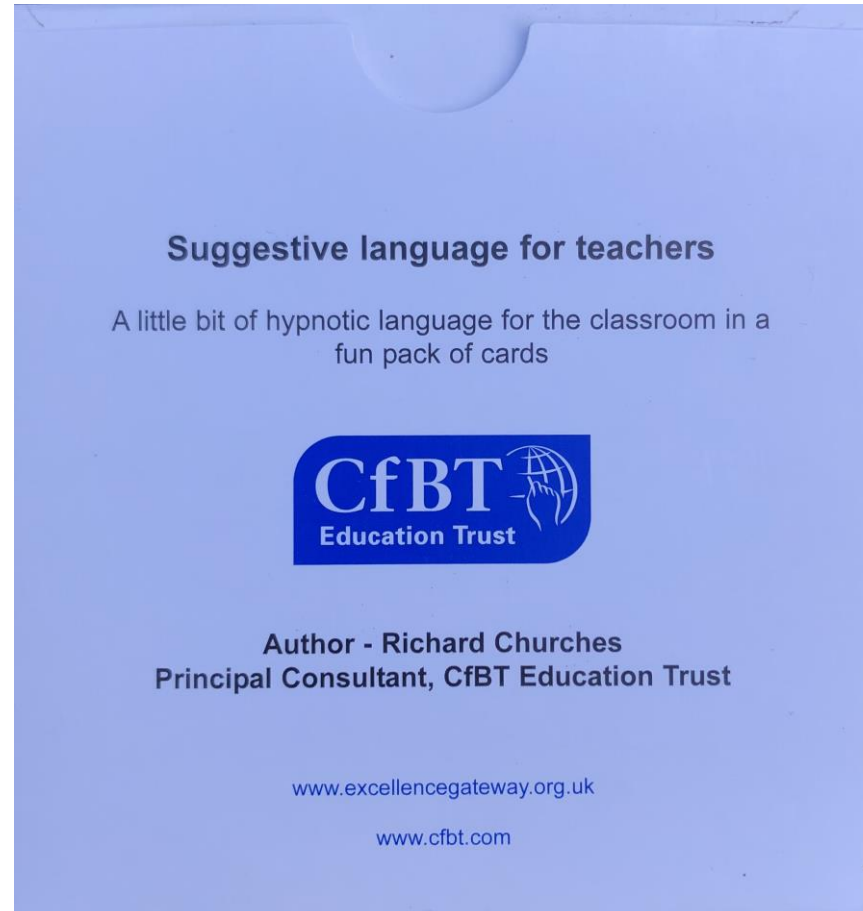
If *you do this* you **might**.....

and

When *you do this* you **will**.....

It is also about avoiding implying what you do not want. 'Try' for example implies possible failure.

Suggestive language for teachers



Don't think of



You cannot not think of something

- I am not going to tell you that you are going to enjoy this.
- I'm not suggesting you will understand division straight away.

Suggestive language

- The order of words isn't important – '*This is the easiest way, isn't it?*' is the same as saying '*isn't this the easiest way?*'

Limiting mindset with a question

So how interested *are you in this option?*

I'm wondering **how quickly** *you will begin to learn this?*

Would it *now be an opportunity to do some measuring?*

Phrase a question to include a suggestion; so that the person the question is directed at, will think of what you want.

Mentioning a desired state

Mentioning the desired state of mind or emotion (what you want) in your suggestion can help to encourage that state of mind by bringing it to the attention of the person you are talking to.

- *I am **curious** to know when you will enjoy number bonds.*
- *Another **fun** way to do this calculation is to*

Because

If you connect a suggestion to something that is undeniably true it is likely to make the suggestion more likely to be accepted.

- **As you read this** *you could* begin to think of your own version of this pattern.
- *Completing this activity* **means** that you will find the next one easier.
- **Now that you know** *you can work out equivalent fractions and you know percent means 'out of 100'* you will be able to turn simple fractions into percentages.

Yes tags

Adding a 'yes tag' (isn't it, doesn't it, wouldn't it, can't it?) after a suggestion particularly at the end of a sentence makes it more likely to be accepted. This works even better if you nod while you do it.

- Now you can multiply by 10, you can divide by 10, can't you?
- Your group had the correct answer 36. Now you could make up similar questions, couldn't you?
- This is a quick way, isn't it?

Command with a question

- Can you think of a question to ask?
- Can you work more quietly?
- Could you put your pens down, look at me and listen?

That's right

- That's right, label the x and y axes carefully
- Talking quietly in groups, that's right

Choice with no choice

- Would you like to do the odd numbered examples or the even numbered examples?
- Which maths worksheet would you like to do for homework?
- Would you like to use the traditional method or would you like to use the grid method?

Mirroring body language



And finally

A talking sheepdog rounds up all the sheep into the pen for his farmer. He comes back and says, “Okay, Chief — all 40 sheep accounted for”.

The farmer says, “But I’ve counted them and I’ve only got 36!”

The sheepdog replies, “I know, but I rounded them up.”



A few Maths jokes

- **Parallel lines have so much in common ... It's a shame they'll never meet.**
- **Did you hear about the over-educated circle? It has 360°!**
- **Why doesn't anybody talk to circles? Because there's no point.**
- **Why did the maths teacher spill all of his food in the oven? The directions said, "Put it in the oven at 180°".**

And a few more

- **Do you know what's odd?** Every other number!
- **I hired an odd job man to do eight jobs for me.** When I got back, he'd only done jobs one, three, five, and seven.
- **Did you hear about the maths teacher who's afraid of negative numbers?** He'll stop at nothing to avoid them.
- **Why was the maths class so long?** The teacher kept going off on a tangent.



Questions



Comments

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