

# Mathematics

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## What's the Secret Code?

- Use the clues to find the code number:
  - It is between 8 500 and 8 800.
  - When multiplied by 8, the result is a whole number.
  - The digit in the hundreds places is  $\frac{3}{4}$  the digit in the thousands place.
  - The digit in the hundredths place is 200% of the digit in the tenths place.
  - There are no zeros in the decimal places.
- What code numbers fit these clues?
- Explain how you used all of the clues to find these possibilities.
- Write one more clue so that there is only one possible code number.

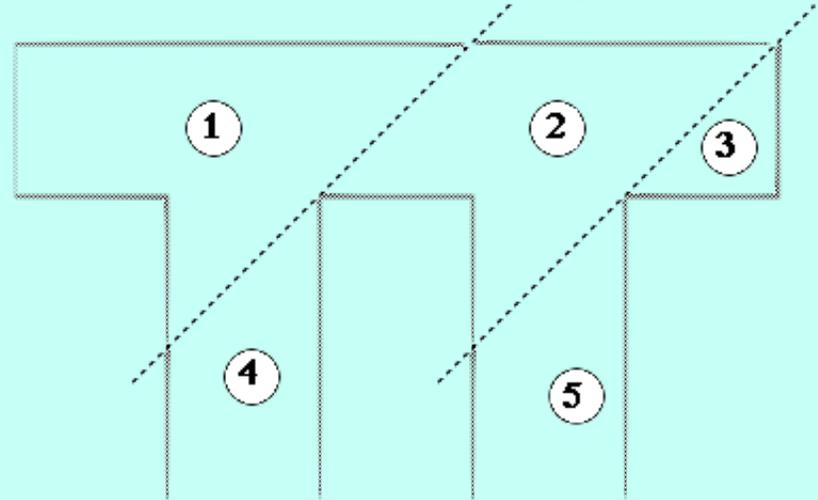


Adapted from: <https://youcubed.org/tasks/whats-secret-code/>

## Can You Make A Square?

Cut up the Greek letter Pi below into five pieces as shown. Re-arrange the five pieces to make a square. Is there more than one way?

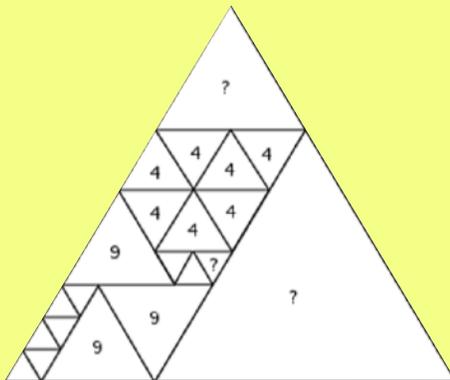
<https://www.mathisfun.com/puzzles/as-easy-as-pi.html>



## Area Maze - Triangle

Can you figure out the value of the question marks?

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



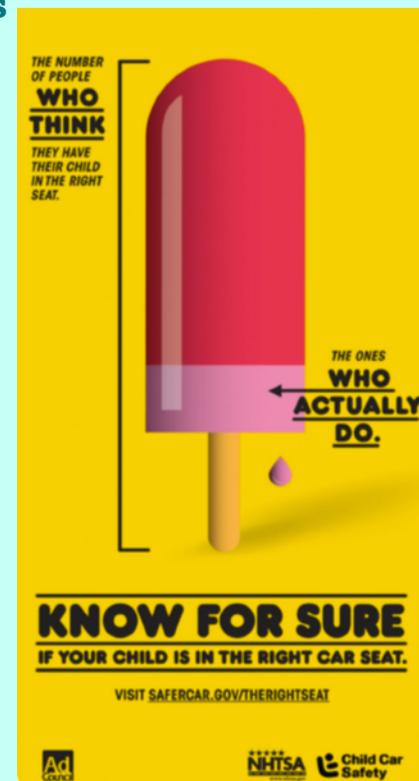
## Analyze This

In 2012 the US launched a Child Car Seat Safety campaign with visuals to encourage parents to be aware of recommendations. Compare the visuals. What fraction of children are in the right seat? What questions do you have?

<https://robertkaplinsky.com/work/car-seats/>



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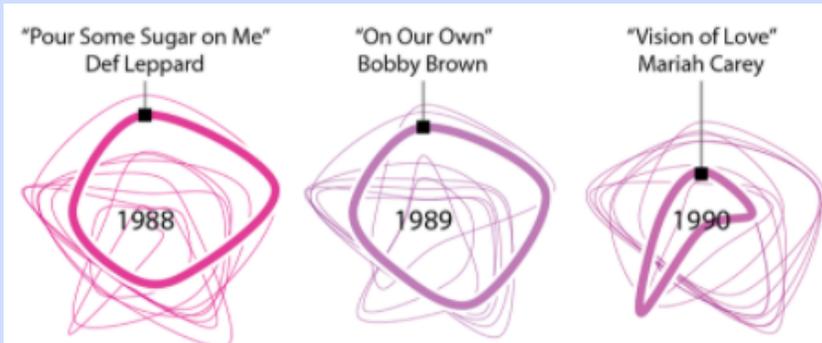


For more information, contact Bryan Ouellette Subject Coordinator for Math & Science 6-12  
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# Science

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## What's Going On In This Graph



## Instructions - Can You COMPLETE the Task?

Have you ever followed a set of instructions and not been able to reach the desired outcome? Writing "HOW TO" instructions might be harder than you think. Watch the video below to see what we are talking about.

[https://www.youtube.com/watch?v=cDA3\\_5982h8](https://www.youtube.com/watch?v=cDA3_5982h8)

Next, try your own hand at writing a set of "HOW TO" instructions and test it on someone in your family... and don't get frustrated when they "follow" your instructions!



### One Song's Fingerprint

Shown here: "1-2-3" by Gloria Estefan and Miami Sound Machine

LOUDNESS  
Average volume of the song

VALENCE  
How cheerful the song sounds

ENERGY  
How fast and noisy the song sounds

AVERAGE OF ALL SUMMER SONGS

ACOUSTICNESS  
Likelihood the song uses acoustic instruments

DANCEABILITY  
Strength and regularity of the song's beat

Every song has a "fingerprint." Each fingerprint is a data display that is used to show three or more quantitative variables from a common starting point.

- \*What do you notice?
- \*What do you wonder?
- \*What are the similarities and differences between each graph?
- \*What surprises you?
- \*What do you think the graph would look like for your current favourite song?

## INDEX CARD CHALLENGE

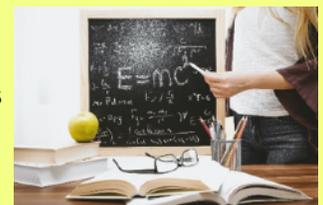
A physical change is when we change the form, size, shape, etc. of something without changing what the substance actually is.

Examples of physical changes are: cut, tear, fold, paint, colour, freeze, melt, etc.

Can you fit **through** a 3" x 5" index card (or paper of the same size) by manipulating it through physical change?

## Check It Out!

Have an interest in physics? You can explore a variety of simulators at: <https://www.myphysicslab.com/>



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