

MathsJam Shout



MATHS WEEK ENGLAND

November 2024

Maths Week England

Maths Week is a week-long FREE celebration of all things maths - aiming to raise the profile of the subject whilst, at the same time, encouraging people to pursue maths by promoting a more positive and inclusive approach. Visit the website at mathsweekengland.co.uk for free resources, including daily video puzzles, problem solving activities and more.

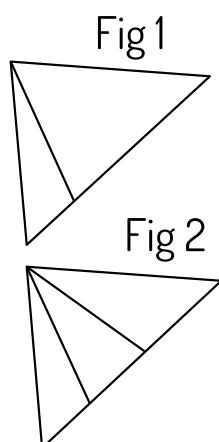
Puzzles Bits and Pieces

Three friends together play 2 computer games, each of which they can play only once. Game A takes 15 minutes and Game B takes 5 minutes. The problem is that there are only 2 computers. Ignoring the time taken to swap players, what is the minimum time needed for all 3 friends to play both games?

You are allowed to perform two operations with numbers: "doubling" and "increasing by 1". If you start from zero, what is the smallest number of moves needed to build up to exactly 100? Is there a general rule for how many operations you need to get to a number?

$$\begin{array}{l} \times 2 \\ + 1 \end{array}$$

In Figure 1, a single line is dropped from the top of a triangle to its base, and a total of 3 triangles (of any size) are formed. In figure 2, two lines are dropped and a total of 6 triangles are formed. How many triangles in total will be formed if I drop ten lines from the top to the base?

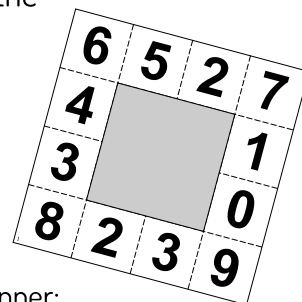


Make Flippin' Sums

Based on a 1994 article in Mathematics in School by Peter Padilla, which credits an unnamed 'Australian colleague'.

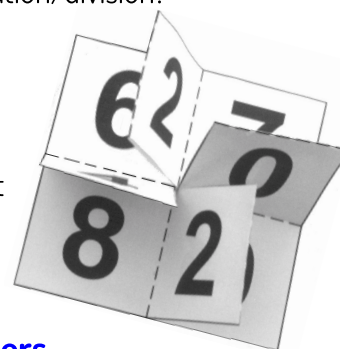
You will need: printouts (from the link below), scissors, paper glue

Use the instructions provided to make a Digit Flipper (three different designs of flipper are included in the printout).



Some questions to ask, for each flipper:

- How many different four-digit displays can be made?
- What is the largest/smallest total possible?
- What is the largest/smallest product possible?
- Use a random number generator to create a total. Can you find (one or more) arrangements of the flipper so that this total can be made using those four numbers and addition/subtraction/multiplication/division?
- How many different two-digit numbers can be found (running in any direction)?
- Find all the two-digit primes, two-digit squares and two-digit cubes you can make on each flipper.



Printout: bit.ly/digit-flippers

MathsJam Shout is a monthly sheet of ideas for activities to do at a MathsJam night. It's created using suggestions from a different MathsJam each month, and if you'd like to submit suggestions for a month in the future, email katie@mathsjam.com for details.

MathsJam is a monthly opportunity for like-minded self-confessed maths enthusiasts to get together in a pub and share stuff they like. Puzzles, games, problems, or just anything they think is cool or interesting. Monthly MathsJam nights happen in over 70 locations around the world, on the second-to-last Tuesday of each month. To find your nearest MathsJam, visit the website at www.mathsjam.com.