



Whizz Online Maths Extravaganza Puzzle Sheet 2

post-event handout

We hope you had a blast attending the maths extravaganza.

The fun isn't over just yet, though!

Here are some questions to ponder, based on the activities we did in the session.



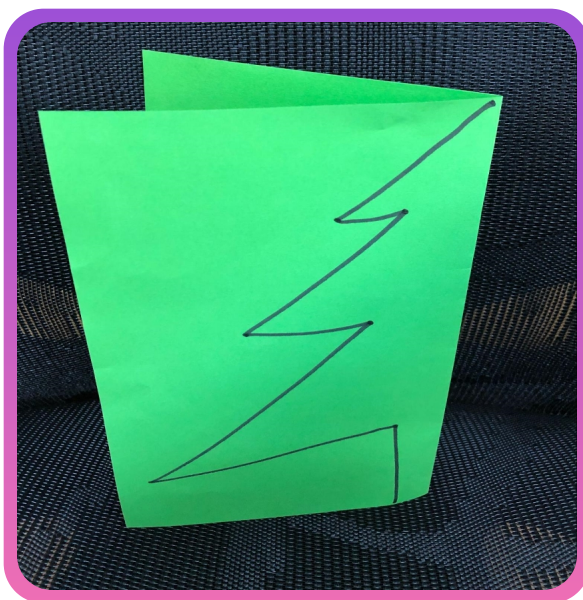
The falling paper problem

Eight origami papers fell on the floor. Work out the order they landed. **Where would you start? What are you looking for?**



Folding and Cutting challenge

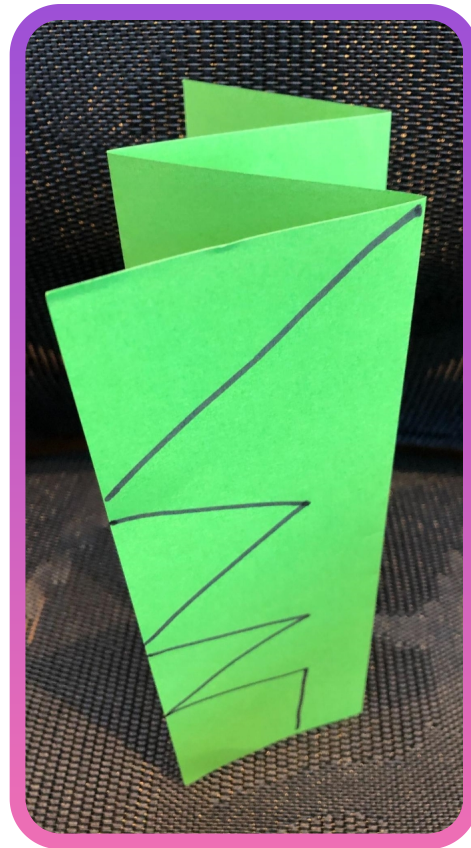
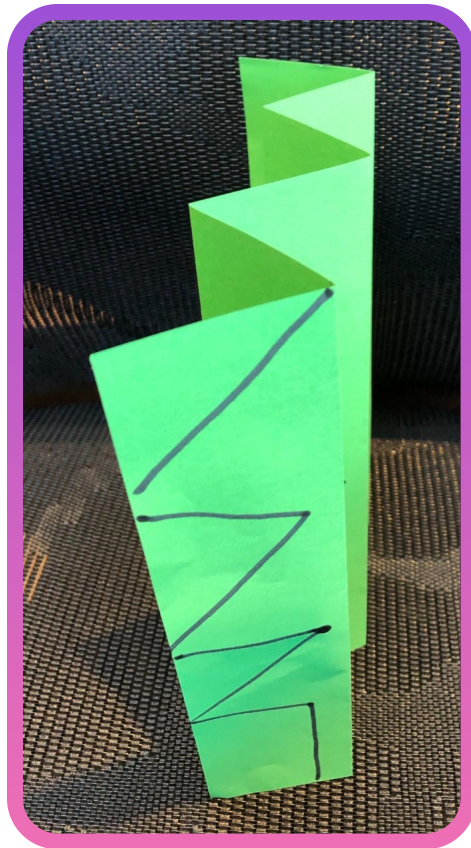
If you take a piece of paper, fold it in half, draw half a tree and cut it as below. You will make one tree.





Patchwork challenge

How many trees will these folds make?



Is there a link to the number of folds to the number of trees?
Does the way you fold the paper make a difference?
What are the different ways to fold paper?
How would you fold the paper to get 5 trees?
Is it possible to produce any number of trees?



How do you think the paper was folded to cut out and to produce these trees?

Can 6 trees be produced in a circular design?

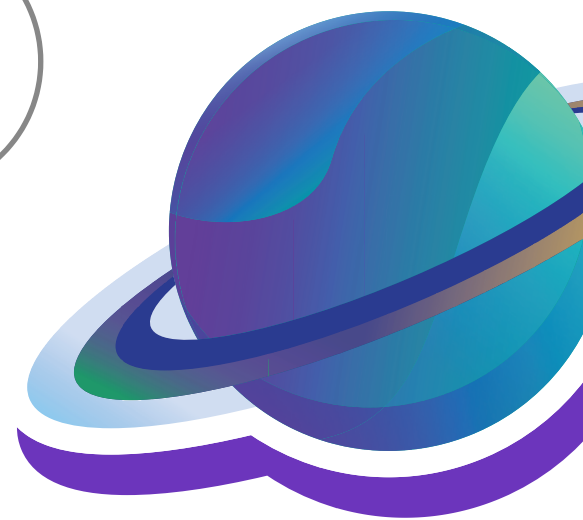
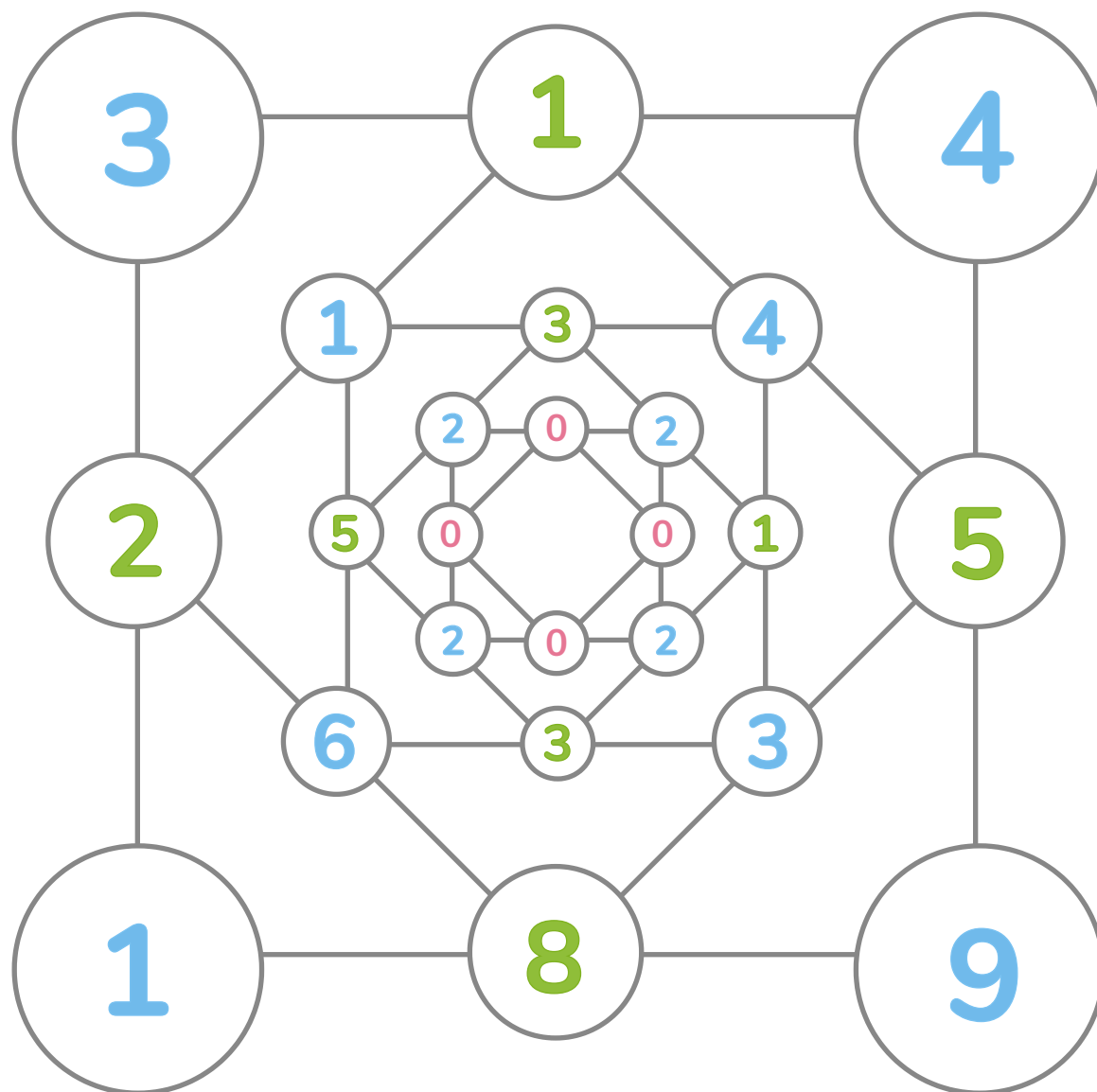




Diffy

Begin by writing four different numbers into the four circles on each of the outer corners. Fill in the outer squares by finding the positive difference - subtracting the smaller number from the larger number on each corner. Continue working toward the center, subtracting the corners.

What patterns do you see?



Is it always zero you end with?

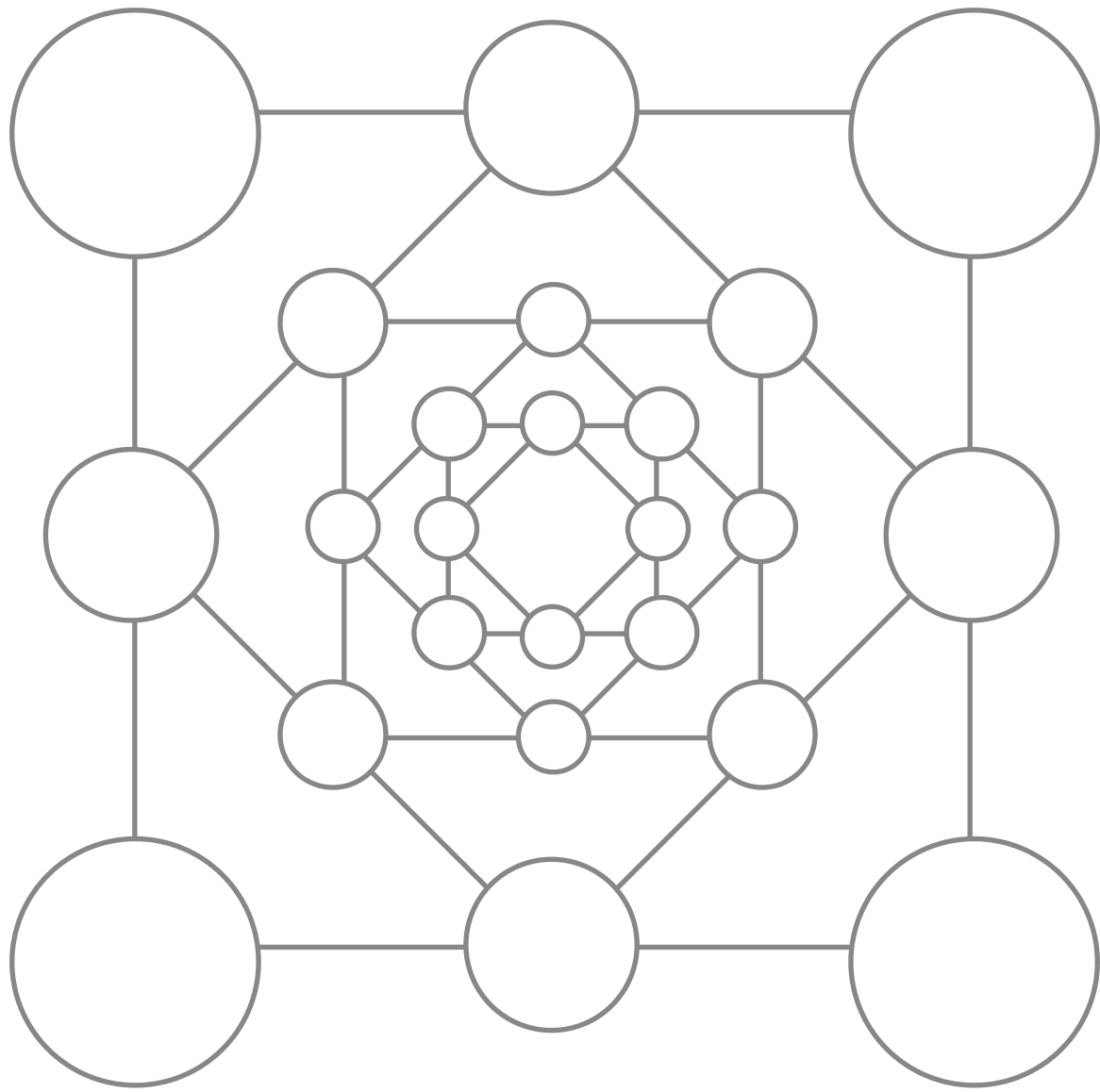
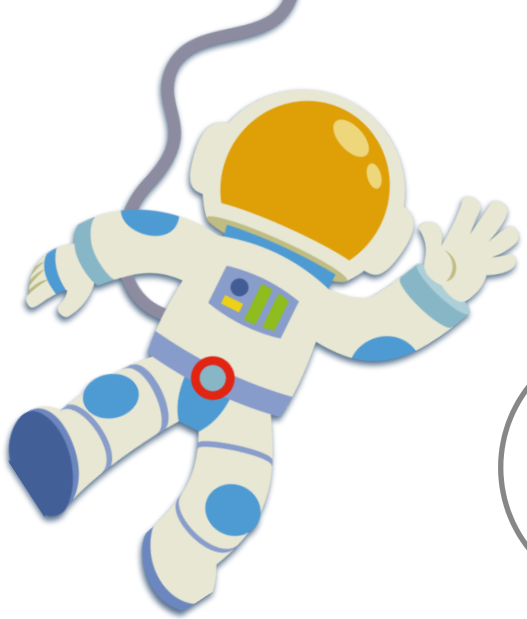
What numbers are best to start with?

Does it make a difference using larger numbers?

Is it possible to keep going forever?

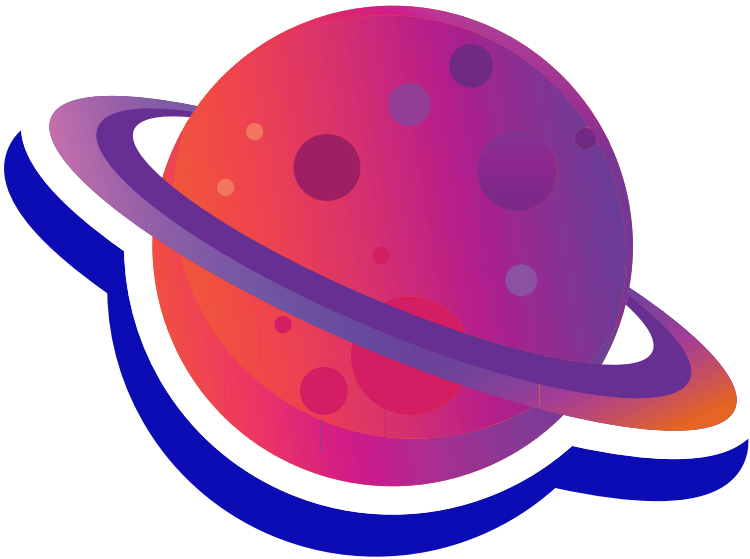
How many squares deep can you go? (This example is 6 squares deep.)





Note: This template is just a guide - you may need more or less squares deep.

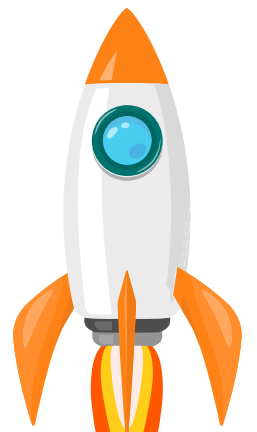
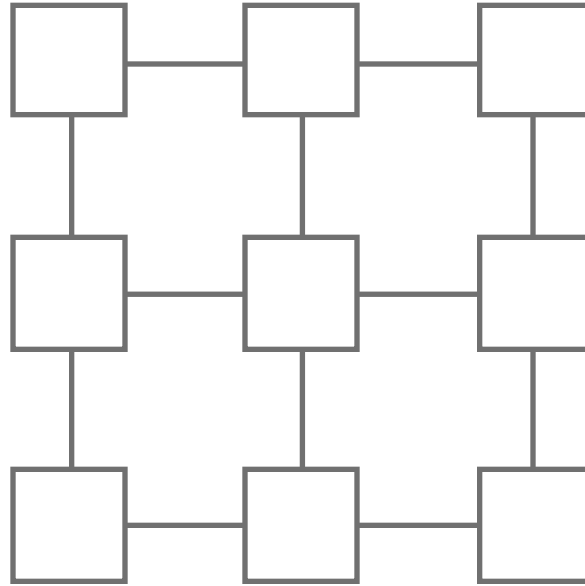
It can be played with integers, negative numbers, fractions, decimals, and money.





Number differences

Place the numbers from 1 to 9 in the squares below so that the difference between joined squares is odd. (You must use each of the numbers once.)



What have you tried so far?

Are there any other ways to do it?

Can you put the numbers in the squares so that the difference between joined squares is even? Explain your answer.

