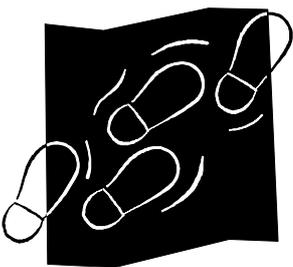


IDEAS

FOR



MATHS TRAILS



These ideas were put together by the teachers attending maths courses in the Autumn term. Some are specific to the venue of the courses, or to the teachers own schools, but can almost certainly be adapted to your own school environment.

We hope they give you some ideas if you are interested in putting a maths trial together.

## RECEPTION

- × Count how many :
    - steps there are to the classroom (from the playground)
    - windows there are - in the classroom, hall, etc.
    - large trees/small trees there are in the yard. Altogether?
    - doors/gates there are around the outside of school
    - bees/flowers there are on the mural
    - bars in the gate
    - trees in the field
    - doors in the school
    - benches
    - panes of glass there are in each window
    - panes of glass there are in the ground floor windows
    - rows of bricks there are up to the window ledge
    - estimate rows of bricks there are up to the roof
    - estimate slabs, daisies, plants, etc., in a given area (Could use a hoop for the area)
    - brackets hold up each length of guttering
  
  - × Number snake activities
  
  - × Can you find a number with more than one digit?
  
  - × Count the cobbles in a square metre.
  - × Count the slabs in a square metre.
  - × Count the paving bricks in a square metre.
- ) to help with these the  
) children could be given a  
) square metre quadrant made  
out of card or bamboo canes

## YEARS ONE AND TWO

- × Count how many :
  - doors there are
  - bars there are on the gates
  - paces long is the yard
  - fish there are on the mural
  - footsteps around the apparatus
  - windows there are
  - doors there are
  - benches there are
  - steps there are from downstairs to upstairs
  - rectangles can you find in the school building

**It is important to extend these simple counting activities for children in Years 1 and 2. Here are some ideas.**

- × Walk up the stairs to the classroom counting every other step - what do you notice about the numbers?
- × How many odd/even numbers on the number snake?
- × What is the biggest number you can make from the number square?
- × Stand in the hall and count the windows. Can you work out (in your head) how many panes of glass there are?
- × If 4 people can sit at a bench - how many people can sit down?
- × How many letters in SWAN HOTEL? Think of another name - to make it 10 letters.
- × Can you find how many panes of glass on one wall?
- × How many windows - how many panes in the windows - how many panes altogether?

- × Find the difference between the number of ground floor windows/upstairs windows.
- × How many windows? How many doors? What is the difference?
- × Estimate and check by counting how many paving stones?
- × Can you describe the sequence of the bushes and trees planted at the front of the hotel? (Tree, bush, bush, bush, tree, bush, bush, bush)
- × Find a car number plate where the numbers total 10.
- × Put numbers on the 100 grid.
- × Collect car number plates.
- × Patterns of number in window panes.
- × Make multiplication sums in different ways - looking at how many panes in one window.
- × If  $a=1$ ,  $b=2$ , etc., what is the sum of the school sign?

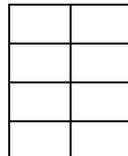
## YEARS THREE AND FOUR

- × There are numbers all around us. Try and find the highest possible number.
- × There are 24 cars on the car park. How many wheels are there?
- × Count the number of bolts on one bench. How many are there on all the benches (without counting them all)?
- × There are ..... guests in the hotel, ..... use the lift. What percentage of guests use the lift?
- × Convert car registrations into numbers - A=1, B=2, etc. Find the difference between 2 registration plates.
- × When adding the digits on any number plate (wherever), what is the highest number you can make? (Could change this to multiplying)
- × Estimate the number of cobbles in a square metre.
- × How many wheels are there in the car park spaces if full?
- × Test a statement :  
  
All petals on the daisies in the courtyard add up to 20. (Each daisy has 20) Can they write a general rule for another plant? Can they make a more general/accurate rule?  
  
Look at the courtyard steps. How high would 10 steps reach in height/in distance?  
  
How many steps would you need to reach the second floor?
- × There are 8 flower beds with 5 plants in each. How many altogether?
- × How many planks of wood on a picnic table? How many on all the picnic tables?
- × Estimate the number of cars that would fill the car park.
- × If you put 2 children on each side of a picnic table, how many children would you get on all the tables?
- × Find the highest and lowest numbers on the car registrations in the car park. Find the difference between them. Add together.
- × Choose 6 car registration numbers. Order them smallest - largest and largest - smallest.

- ✗ Which multiplication tables could you use to work out the number of wheels on the cars in the car park?
- ✗ How many cars have number plates where the numbers are in the three times/five times tables?
- ✗ How many panes in one window? How many panes in 4 windows?
- ✗ How many children can sit comfortably at one picnic table? How many children can picnic together?
- ✗ In a section of bedding plants, what fraction are blue, yellow, etc?
- ✗ Find one thing you could measure in :

metres  
centimetres  
litres  
pounds  
hours  
minutes

- ✗ Estimate and then measure the length of a white line on the car park spaces.
- ✗ Measure the length and width of a car park space. Work out the area of one space.
- ✗ How many different rectangles can you count in the shape of the largest window, for example :



- ✗ How many different types of triangle can you find? Can you name them?
- ✗ Can you find any shapes with more than four straight sides? Can you name them?
- ✗ What shapes can you see in the

signposts  
drain covers  
windows  
shop signs  
PE apparatus  
climbing frame

- ✗ Look for brick patterns in the walls.

- × Window shapes - describe windows in relation to their properties.
- × Stand ..... Write down what you can see when you look north, south, east and west. Look at the school building. How many vertical/horizontal/diagonal lines can you see? How many right angles?

- × Using 100 square.

Start on 5 - go 3 squares north. Where do you land? Take 2 steps east. Where do you stop?

Or - Turn  $90^\circ$ . Turn clockwise, turn anti-clockwise.

- × Looking at the school from the playground, what 3D shapes would you use to construct a model of the school?
- × Look at the netball court. Identify all the shapes you can see.
- × How many shapes can you identify in the boundaries of your school, eg fences, walls, etc.
- × Draw your shapes and then draw on as many lines of symmetry as you can find.

**When designing a Maths Trail for older children, try to build in challenge. Give children the opportunity to explain their thinking about efficient ways of tackling a problem.**

**For example, how many bricks in the boiler room wall, could be answered by counting - but this would obviously not be appropriate. Children could be encouraged to solve this by sampling.**

## YEARS FIVE AND SIX

- × Using the digits from 2 number plates, find the greatest difference by re-arranging the digits.
- × What proportion of the school site is taken up with buildings? Express as a fraction, decimal or percentage.
- × If there are 8 pieces of slate per 50cm of wall, how many are there in 12m of wall?
- × In one window there are 24 panes of glass. In total there are 384 panes of glass on one side of the building. How many windows in total?
- × Estimate the number of cobbles in a square metre, then work out how many cobbles in the whole area.
- × Look at car number plates and make a number sentence that will produce :
  - (a) the smallest numbers
  - (b) the largest numbers
- × **Explain how to** estimate efficiently the number of cobbles in the courtyard.
- × If there are 8 panes of glass in 1 window. How many panes are there in 28 windows? (Easier numbers for Years 3/4)
- × 0.5 of the car park is flooded, how many spaces are left?
- × If the car park holds X cars, how many will it hold when it is enlarged by 50%?
- × Single room for 2 nights and cancelled giving 3 week's notice. How much would you have to pay?
- × Estimate the number of leaves on the plant. Show an efficient way of tackling this problem.
- × Count the panes of glass in one window. Estimate the windows in the school. If the area of one pane of glass is X, what would the total area be of all the windows? Go on to cost if want to.
- × If the front of the building has 3 rows of 9 windows, and all 4 sides of the building have the same array, how many windows would there be altogether?
- × At the feeding of the 5000, how many picnic tables would need? (Get them to measure one bench, by sitting on the bench)
- × How many slates on the library roof? (Use sampling)

- × Each slate costs 60p. What is the cost of re-roofing the library? (Remember both sides)
- × If the average car is 3.5m long, and there are 20 cars on the car park, how long would a line of all the cars be?
- × The river moves at 4 metres/second. If a swan swims against this at 6 metres/second, how long to go 100 metres?
- × Estimate the number of railings at ..... in the playground. Find the approximate length of one railing. What would the length of the railings be if they were laid end to end?
- × How many cubic metres of water in the swimming pool?
- × Estimate and then measure the length of a white line on the car park spaces. Find the total length of all the white lines in the car park.
- × Measure the length and width of a car park space. Work out the area of one space. Calculate the total area of the car park spaces.
- × If one white line takes 25ml of paint, how much paint would be needed to paint all of the lines on the car park?
- × Look around for equilateral, isosceles, scalene triangles. Say where they are.
- × Estimate the roof angles of .....
- × Identify parallel and perpendicular lines.
- × What shapes can you find in the school environment which have angles of approximately .....<sup>o</sup>?