Maths Year 9

Home learning Pack Contents

There are four short units of work included in this pack, and some puzzles at the bottom of this page. Aim to solve at least one of the puzzles and complete at least two of the units.

Unit 1: Graphs

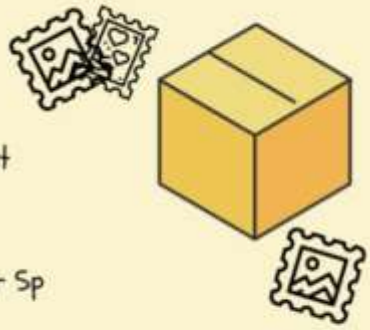
Unit 2: Multiplication

Unit 3: Sudoku

Unit 4: Desmos (please note: a device with access to the internet is needed for this task).

Here are some warm up money puzzles to wet your appetite!

Stamps



Tom's Parcel cost 55p to post

He stuck eight stamps on it.
Each stamp was either 10p or 5p

How many of each stamp did Tom stick on his parcel?

Coins in a Row

Take five coins: 1p, 2p, 5p, 10p, 20p.
Put them in a row using these clues.

- the total of the first three coins is 27p
- the total of the last three coins is 31p
- the last coin is double the value of the first coin

My cat snoozes for 50 minutes in each hour.
For how many hours a day does my cat snooze?

A 5 B 10 C 15 D 20 E 50

Which of the following progress bars indicates 23.4 MB of 37 MB downloaded?

A B C D E

Runaround Sue is orienteering. She goes 1 km North, then 2 km East, then 3 km South, then 4 km West.
In what direction must she go to return to the start?

A North East B West C North D North West E East

Unit 1: Graphs

Create a chart using data that you have collected for Maths Week England

1. Collect some data about something important to you.

Your favourite sweets

The temperature in your garden

Your family's heights

2. Create a chart using the data you have collected.

It can be any type of chart:

Pictogram

Bar chart

Line graph

Scatter plot

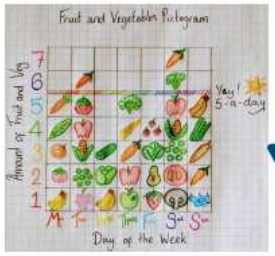
3. Send us your chart, our favourite will win a prize.

Some other ideas:

Sort your graph bars by height: tallest to shortest, or shortest to tallest.

Remove your Smarites and colour the grid using different colours and patterns.

Collect other materials, like leaves or toys, and sort using size or shape.

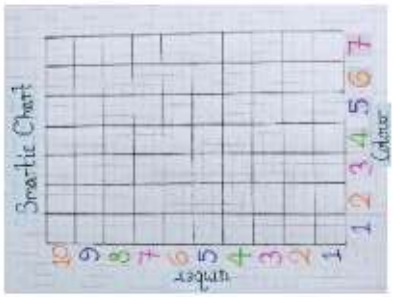


Draw pictures in your grid to create a pictogram.

We've made a pictogram of the fruit and vegetables we each day for a week.

A Smartie Chart

ROYAL STATISTICAL SOCIETY
DATA | EVIDENCE | DECISIONS



Step 1: Sort your Smarties

Sort your Smarties into piles based on colour.

Count the number of sweets in each pile.

Step 2: Draw and label your graph axes.

Draw a horizontal line across the bottom of your page.

Divide the line into sections, one for each colour.

We have 7 Smarties colours so have split our line into 7 sections.

Add the label "Colour" below this line, this is your x-axis.

Draw a vertical line up the left-hand side of your page.

Divide the line into sections, to count the number of sweets.

We have split our line into 10 sections.

Add the label "Sweets" to the left of this line, this is your y-axis.

Draw lines going up from your x-axis and across from your y-axis to create a grid. Make sure your grid has enough space to fit a sweet.

Step 3: Add your Smarties

Add your Smarties to the graph:

One colour at a time.

Starting from the bottom and building up.

Start a new line for each new colour.

Well done!

You've made a Smartie Chart!

Remember to take a photo before you eat the sweets

Unit 2 Multiplication. On two different days, complete one chart per day.

X	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

X	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Unit 3: Sudoku

Complete as many of these puzzles as you can.

- *Each **line** must include each of the numbers between 1 and 9 only once.*
- *Each **column** must include each of the numbers between 1 and 9 only once.*
- *Each of the 9 highlighted **squares** must include each of the numbers between 1 and 9 only once.*

9				1				2
4	1			6	3			9
	3	2			4	6		
			3	4				
	2	8						
			5	2				
	8	1			5	3		
2	7			3	1			5
5				8				4

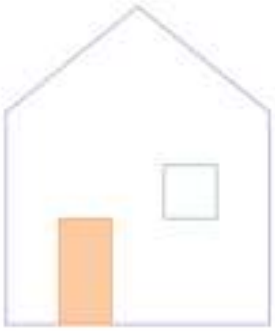
							2	8
	6							7
			4		1			
5			9	7		3		
2		4			8			
3					4	5		
1	3			9				
	5	7					9	
		8	3	1	7			

7				2		4	8	
2		6			8			5
5			9					
			1	5				
	2						6	
				6	7			
					6			3
6			5			1		4
	9	3		4				7

5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
4			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

Unit 4: Desmos drawing.

Creating Maths Art in Desmos (using polygons)



You can create lovely pictures in Desmos (***www.desmos.com***) by using polygons based on a table of coordinates.

These instructions show you how to create this picture. Work through them to make sure you understand how to use polygons in your own creation.

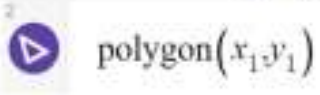
Drawing the house

1. Click the plus sign in the top left, choose table from the menu:

2. Add these values to your table:

x_1	y_1
0	0
0	4
2.5	6
5	4
5	0

3. On the next line enter: **polygon(x1,y1)**



Use (x1, y1) as they are the headings of your table. It will automatically make the numbers a subscript.

4. Long hold the coloured circle on the left of the word polygon to format the shape e.g. change the colour, untick the fill.

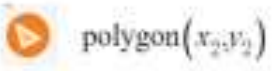
5. Click the circle next to y1 in the table to hide the individual points on the corners.
(The circle will change to have no colour).

Drawing the door

6. Repeat the above method for creating a polygon with these values:

x_2	y_2
1	0
1	2
2	2
2	0

7. Enter: **polygon(x2,y2)**
   (This table has x2 and y2 as column headings).



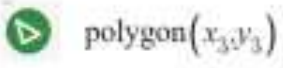
8. Long hold the coloured circle to format the shape.

Drawing the window

9. Repeat the above method for creating a polygon with these values.

x_3	y_3
3	2
3	3
4	3
4	2

10. Enter: **polygon(x3,y3)**
    (This table has x3 and y3 as column headings).



11. Long hold the coloured circle to format the shape.

Saving and sharing your file

1. Create an account or sign-in.
2. Click Untitled Graph (top-left) to name and save your art.
3. Click on the Share Graph icon (top-right) to get a link.

- To view a completed version of this online see: ***www.desmos.com/calculator/8bjwnan6h4***
- Video instructions can be seen at: ***youtu.be/Jq83LIySOkU***
- Desmos art can be seen at: ***www.desmos.com/art***