July 9, 2020

Year 6

Academic Year: 2019 - 2020

Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Year 6**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division				Number: Fractions				Geometry: Position and Direction	Consolidation
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Consolidation
Summer	Geometry: Properties of Shape		Problem Solving			Statistics		Investigations				Consolidation

Summer 2020

Monday 8th June 2020 - Friday 17th July 2020

Summer	Geometry: Properties of Shape	Problem Solving	Statistics	Investigations	Consolidation

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Summer II 2020

Learning Content for Weekly Planning

Overview

Small Steps

Read and interpret line graphs	Week V (29.06.20 - 03.07.20)
Draw line graphs	Week V (29.06.20 - 03.07.20)
Use line graphs to solve problems	Week V (29.06.20 - 03.07.20)
Circles	Week V (29.06.20 - 03.07.20)
Read and interpret pie charts	Week VI (06.07.20 - 10.07.20)
Pie charts with percentages	Week VI (06.07.20 - 10.07.20)
Draw pie charts	Week VI (06.07.20 - 10.07.20)
The mean	Week VI (06.07.20 - 10.07.20)

NC Objectives

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

Interpret and construct pie charts and line graphs and use these to solve problems.

Calculate the mean as an average.

06.07.20

LO: to read and interpret data from pie charts, using it to solve problems in context.

Starting Tasks (7-8 mins):

1. Green Pen Task: Respond to Marking

2. Mathemagician

Success Criteria

- to understand the purpose and everyday use of pie charts
- to read data from pie charts and retrieve information from them
- to interpret data from pie charts to solve problems in context.

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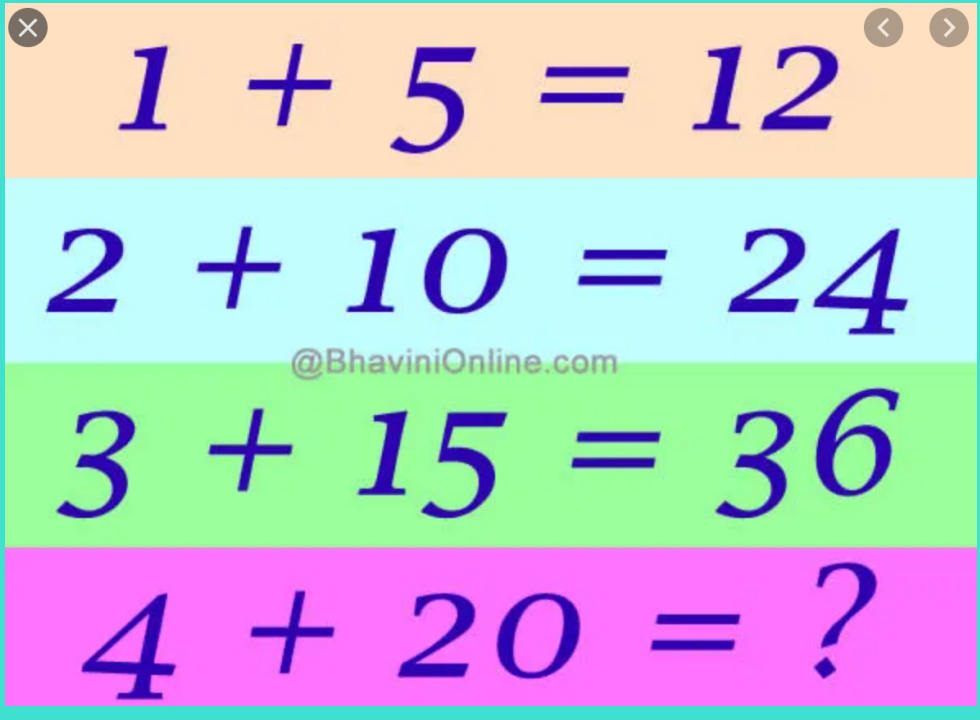
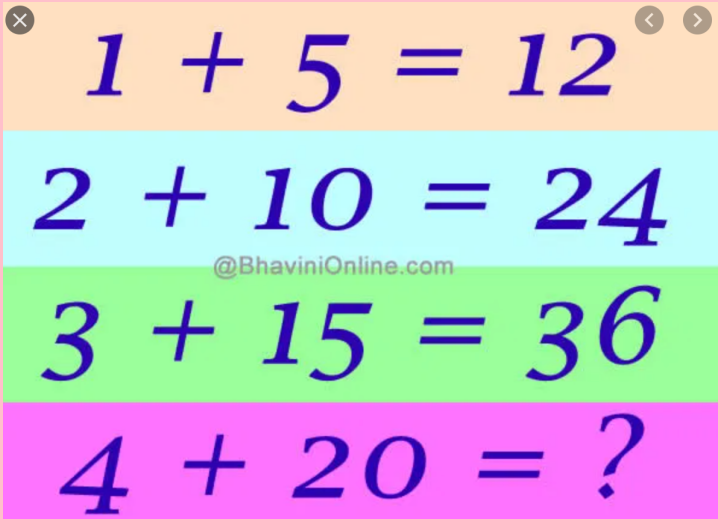
#Mathemagician

Riddle Me This...



Remember to write down and explain your reasoning behind your response.

Answers to #Mathemagician



1 + 5 = 6

2 + 10 = 12

3 + 15 = 18

4 + 20 = 24

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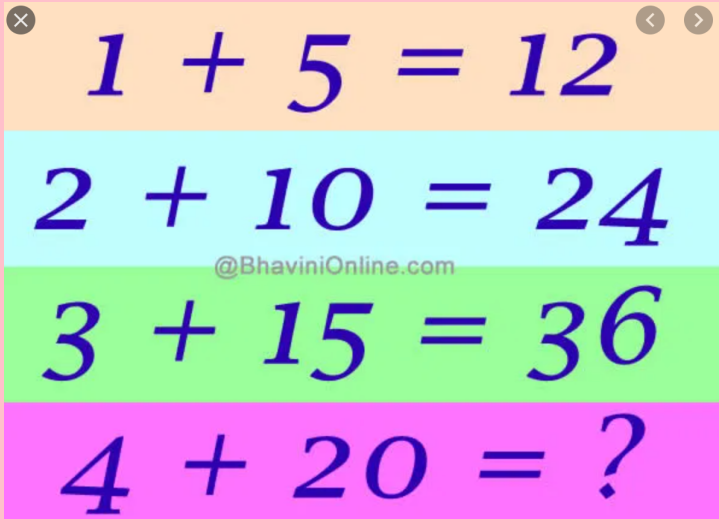
Answers to #Mathemagician



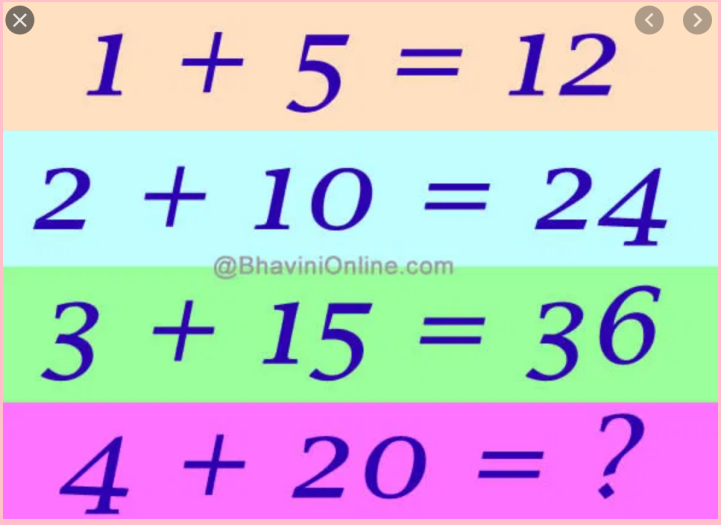
6 = 12

12 = 24

18 = 36

24 = ?

Answers to #Mathemagician



6 = 12

12 = 24

18 = 36

24 = 48

It seems as though the answer is double what it should be.

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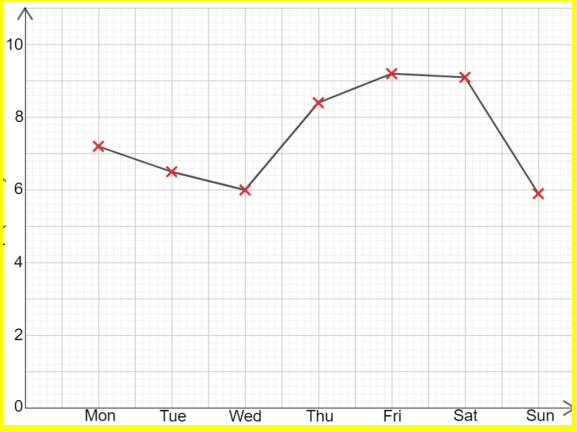
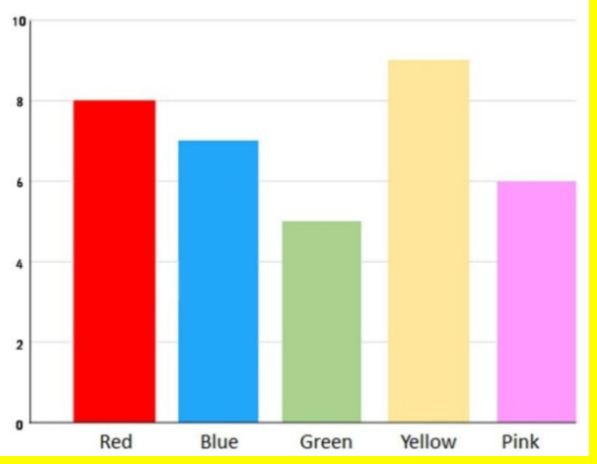
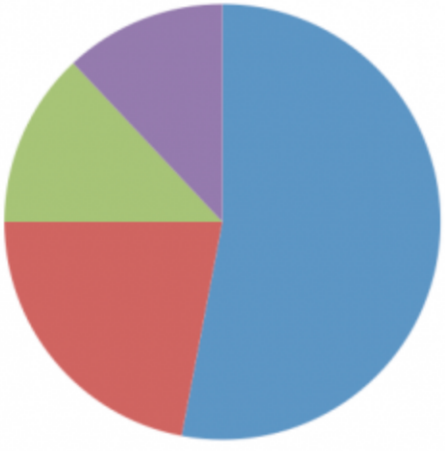
What are the names of each of these graphs?







Sport
History
English
Maths

James		3
Sarah		2
Alex		1
Amy		5
Terry		2

Who read the most? Amy

Who read the least? Alex

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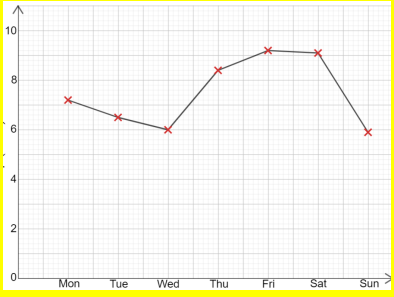
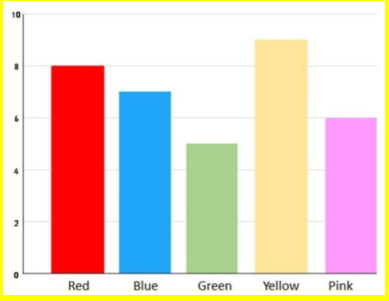
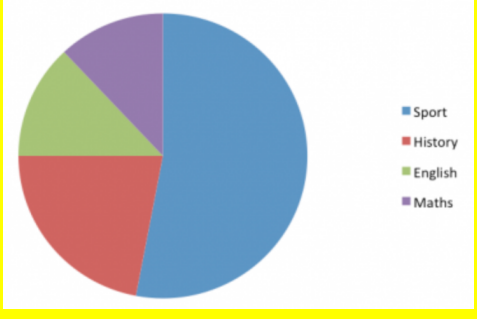
Line Graph



Bar Chart



Pie Chart



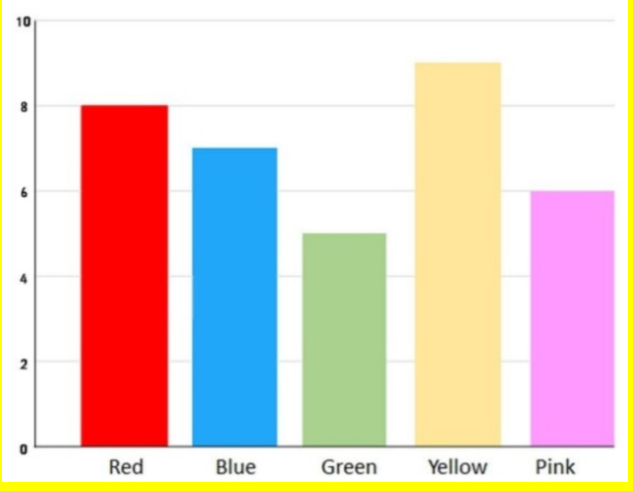
Pictogram

James	📕📕📕	3
Sarah	📕📕	2
Alex	📕	1
Amy	📕📕📕📕📕	5
Terry	📕📕	2

Who read the most? Amy

Who read the least? Alex

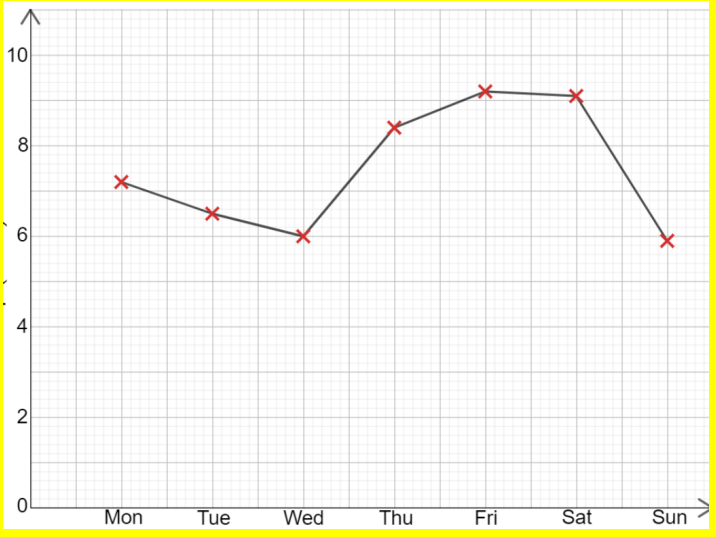
Bar Chart



A bar chart compares two or more variables against one to look for comparisons or to find an answer to a particular enquiry.

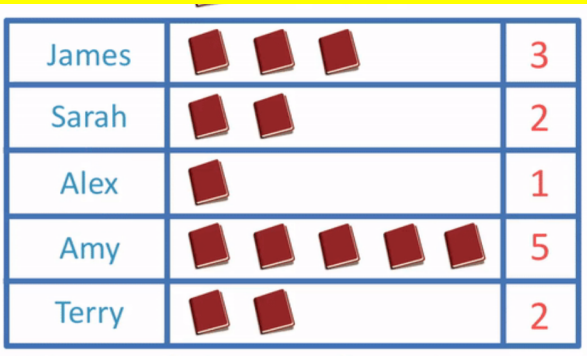
E.g. what is the favourite ice cream flavour in Year 6?

Line Graph



The line graph shows the relationship between two different variables and can provide a background story as to what is going on.

Pictogram

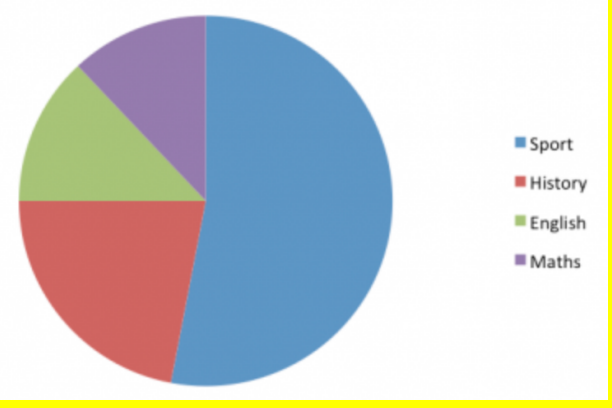


E.g.

Who reads the most books in Year 2?

A pictogram, similar to a bar chart, compares two or more variables against one to look for comparisons or to find an answer to a particular enquiry.

Pie Chart



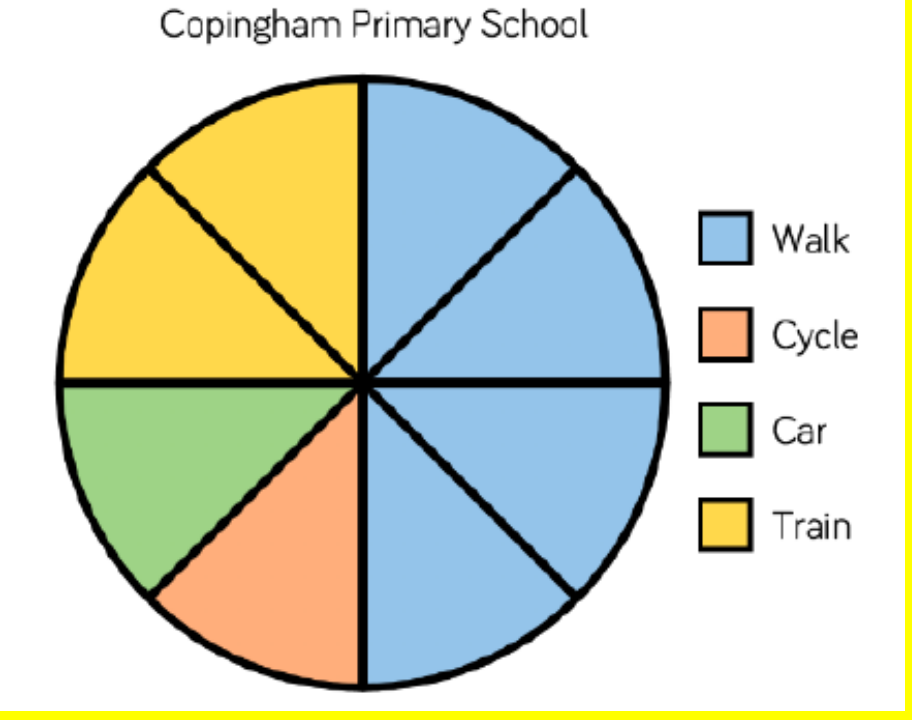
E.g.

Who reads the most books in Year 2?

A pie chart is another representation to compare two or more variables to look for comparisons or to find an answer to a particular question.

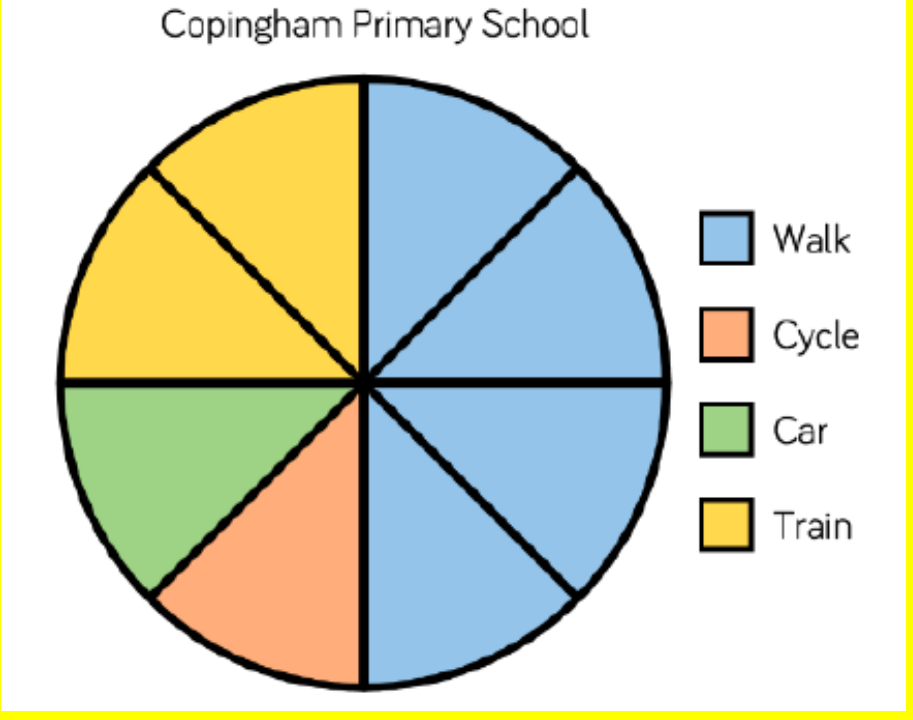
What do you think this pie chart could be about?

Why do you think this?

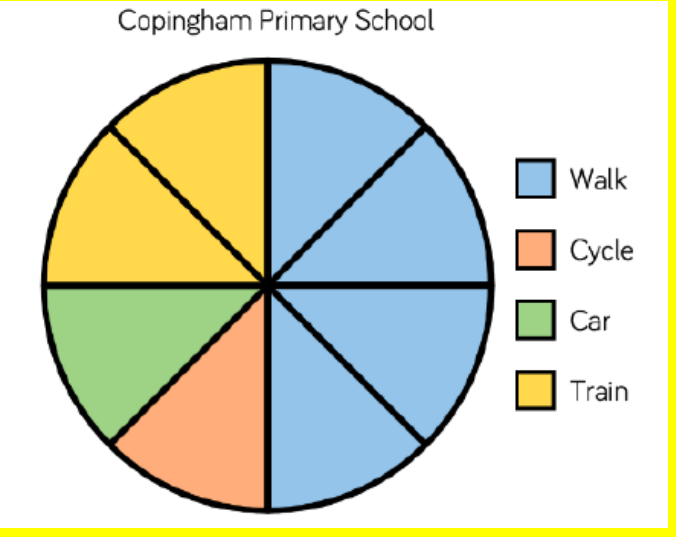


1. To find out what mode of transport the children use to travel to school.

2.



How can we use our knowledge of fractions/percentages to help us understand this pie chart?

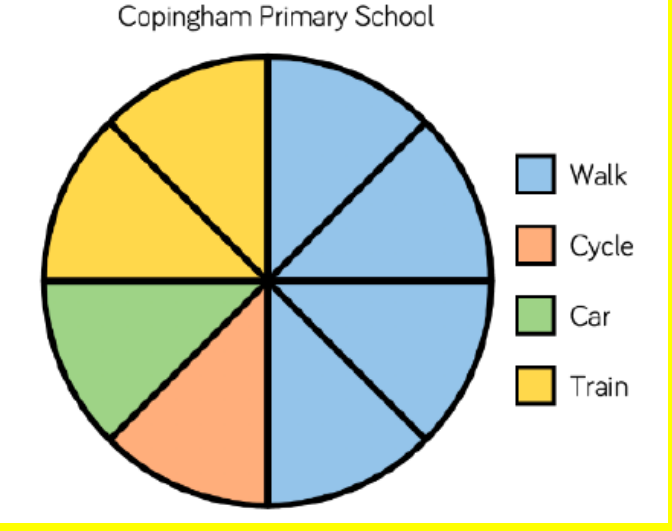


___% of children walk to school. This is equivalent to ___

___% of children use the train. This is equivalent to ___

___% of children use the car. This is equivalent to ___

In Copingham Primary School, there are 600 pupils.



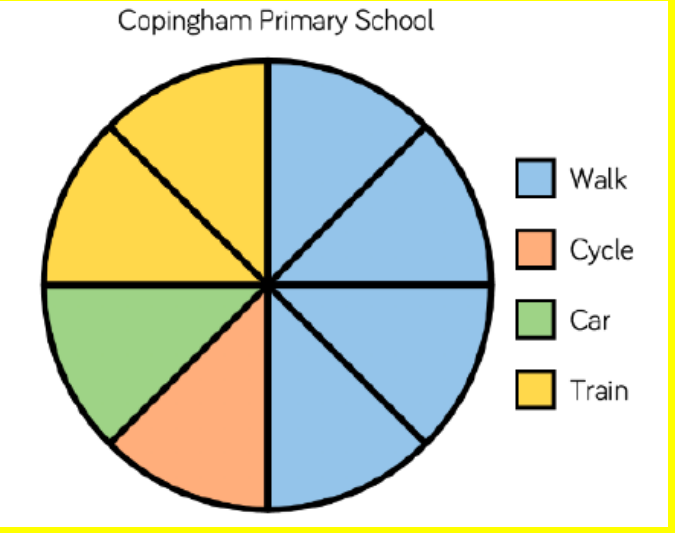
Calculate how many children:
- use the train?
- use the car?
- cycle to school?
- walk to school?

EXT:

create two different

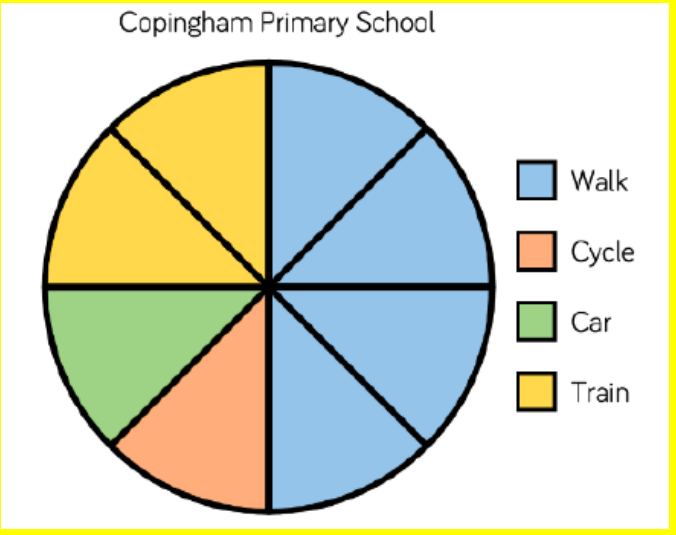
questions that you could ask

about this chart



What is the difference between the number of children who walked and those who cycled?

What is the total number of children who take a car OR train to work?

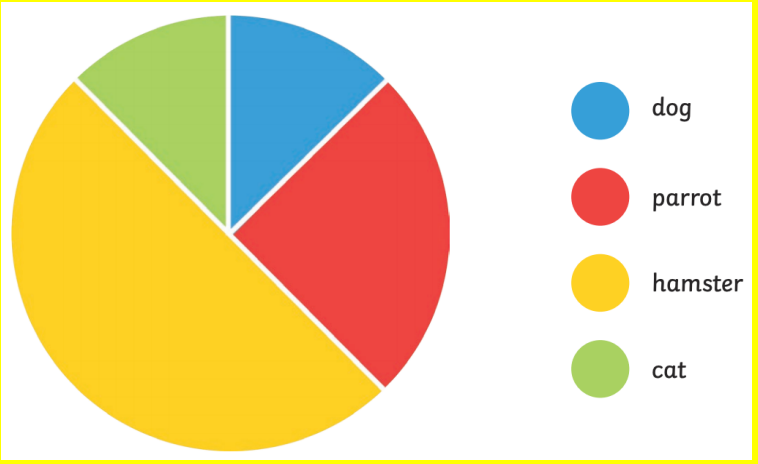


Do you think that this pie chart would look different if it were the MEMBERS OF STAFF at Copingham Primary School?

There are 200 members of staff - create your own pie chart to represent this.

#TalkForMaths

Total = 40 children

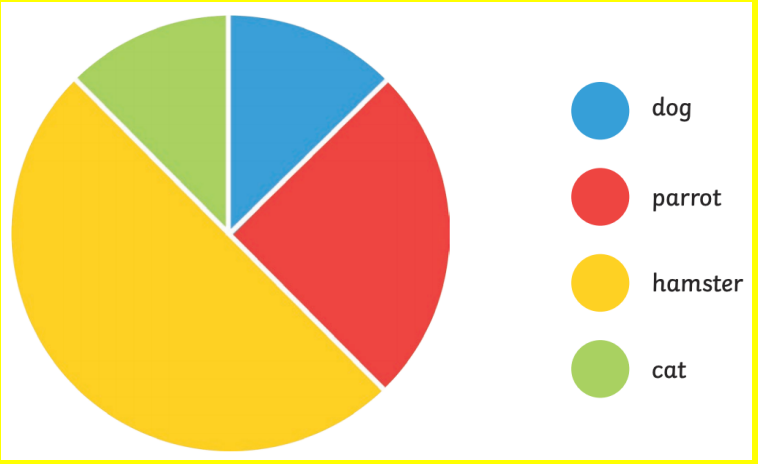


Questions:

1) Use the information to create a caption for this pie chart

#TalkForMaths

Total = 40 children



Questions:

1) Use the information to create a caption for this pie chart

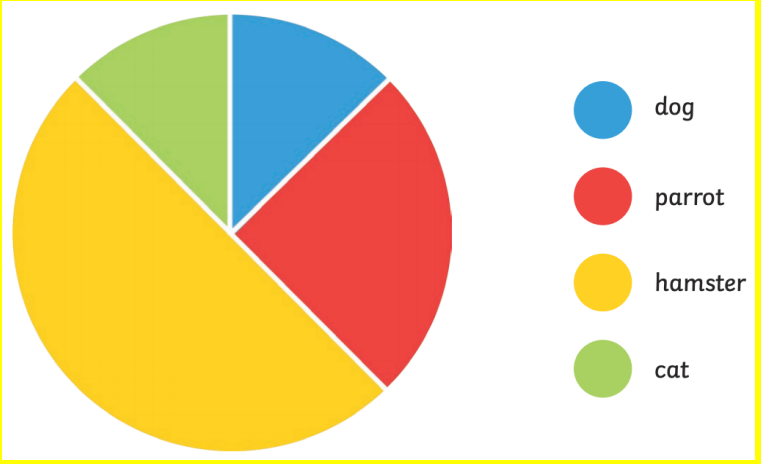
2) How many children chose parrot as their favourite pet? How do you know?

3) What was the difference between the number of children who chose hamster as opposed to a cat?

4) Which pet is the most popular? Which is the least? How do you know?

5) How many children chose dogs as their favourite pet?

#TalkForMaths



Questions:

1) Use the information to create a caption for this pie chart

2) How many children chose parrot as their favourite pet? How do you know? 10 children

3) What was the difference between the number of children who chose hamster as opposed to a cat? 20 - 5 = 15 children

4) Which pet is the most popular? Which is the least? How do you know?
Hamster = popular; cat and dog = least ... The proportion of the chart shows this

5) How many children chose dogs as their favourite pet? 5 children.

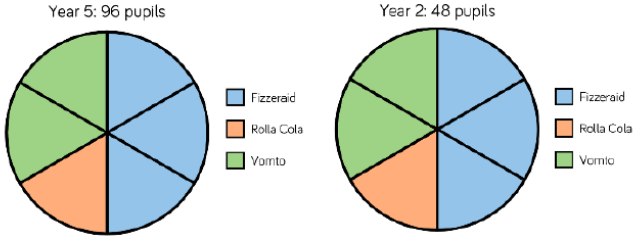
#IndependentLearning

Questions:

Stick the pie chart and accompanying questions into your book, then answer the questions (writing in full sentences or showing your working out).

How will you approach this problem?

Classes in Year 2 and Year 5 were asked what their favourite drink was. Here are the results:



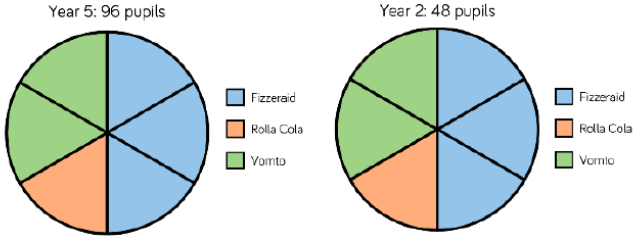
What fraction of pupils in Year 5 chose Fizzeraid?
How many children in Year 2 chose Rolla Cola?
How many more children chose Vomto than Rolla Cola in Year 2?
What other questions could you ask?

How can you show your working out?

How can you use your knowledge of fractions to help you?

How will you approach this problem?

Classes in Year 2 and Year 5 were asked what their favourite drink was. Here are the results:



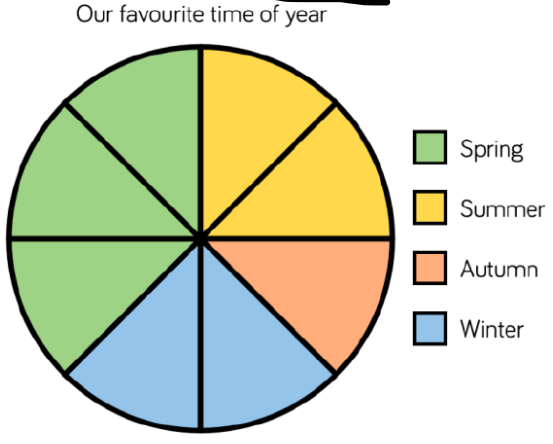
What fraction of pupils in Year 5 chose Fizzeraid?
How many children in Year 2 chose Rolla Cola?
How many more children chose Vomto than Rolla Cola in Year 2?
What other questions could you ask?

How can you show your working out?

How can you use your knowledge of fractions to help you?

How will you approach this problem?

In a survey people were asked what their favourite season of the year was. The results are shown in the pie chart below. If 48 people voted summer, how many people took part in the survey?



Explain your method.

How does the information for 'Summer' help us to calculate the rest?

How can you use your knowledge of fractions to help you?

07.07.20

LO: to use my knowledge of percentages to interpret data from pie charts

Starting Tasks (7-8 mins):

1. Green Pen Task: Respond to Marking

2. Master Mathematician

3. Mathemagician

Success Criteria

- to know what a polygon is
- to identify a specific polygon based on their properties
- to understand the relationship between the number of sides and the sum of interior angles

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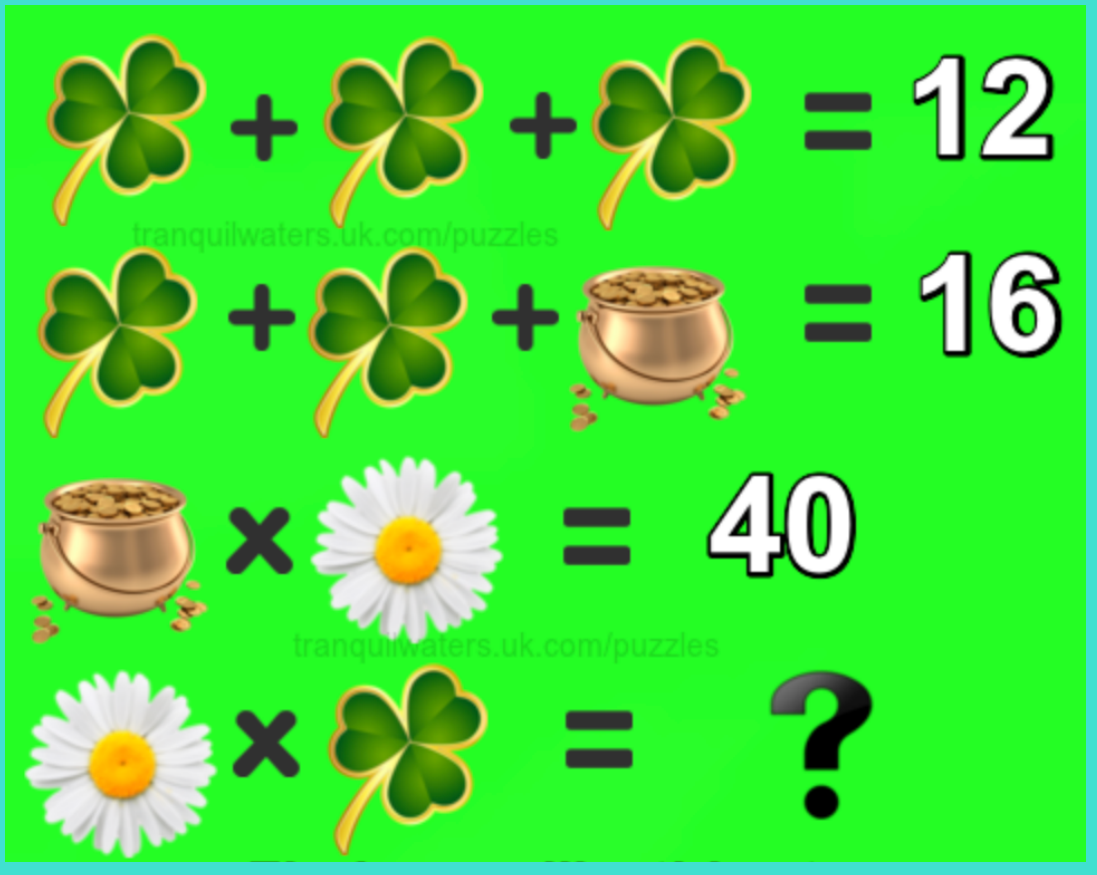
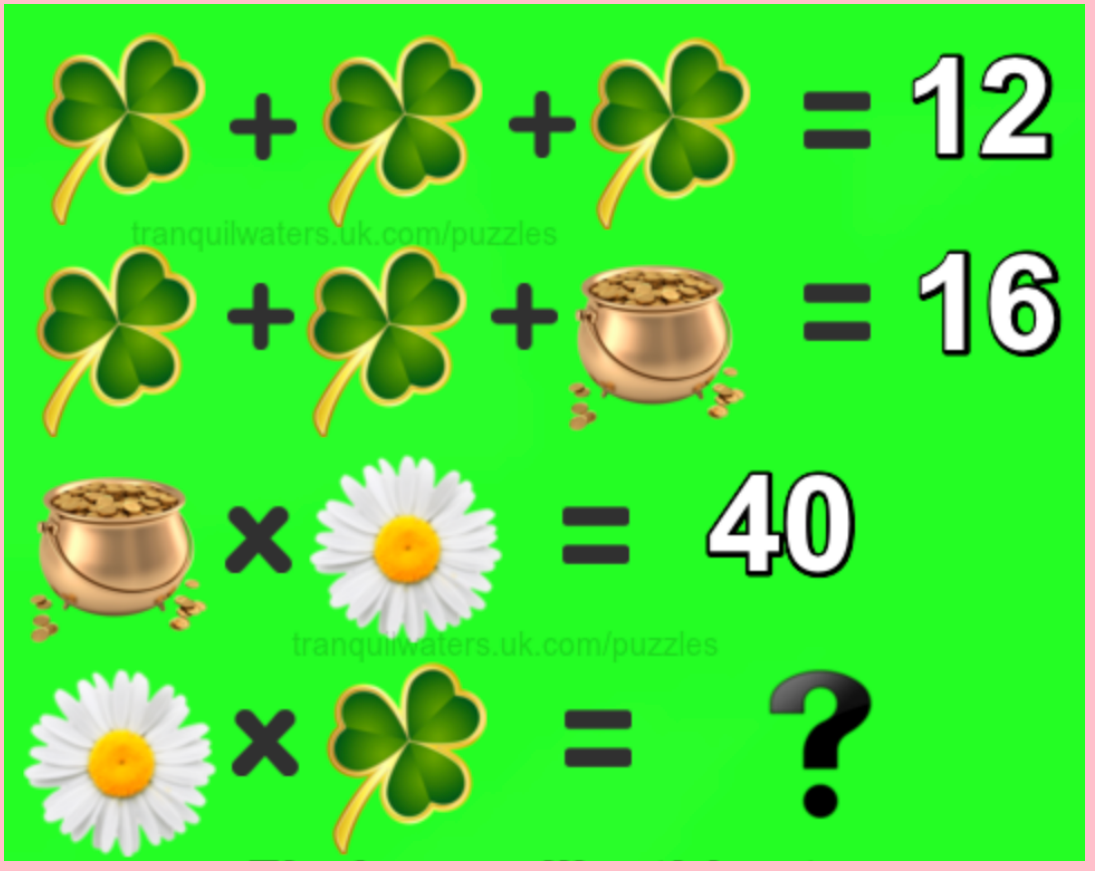
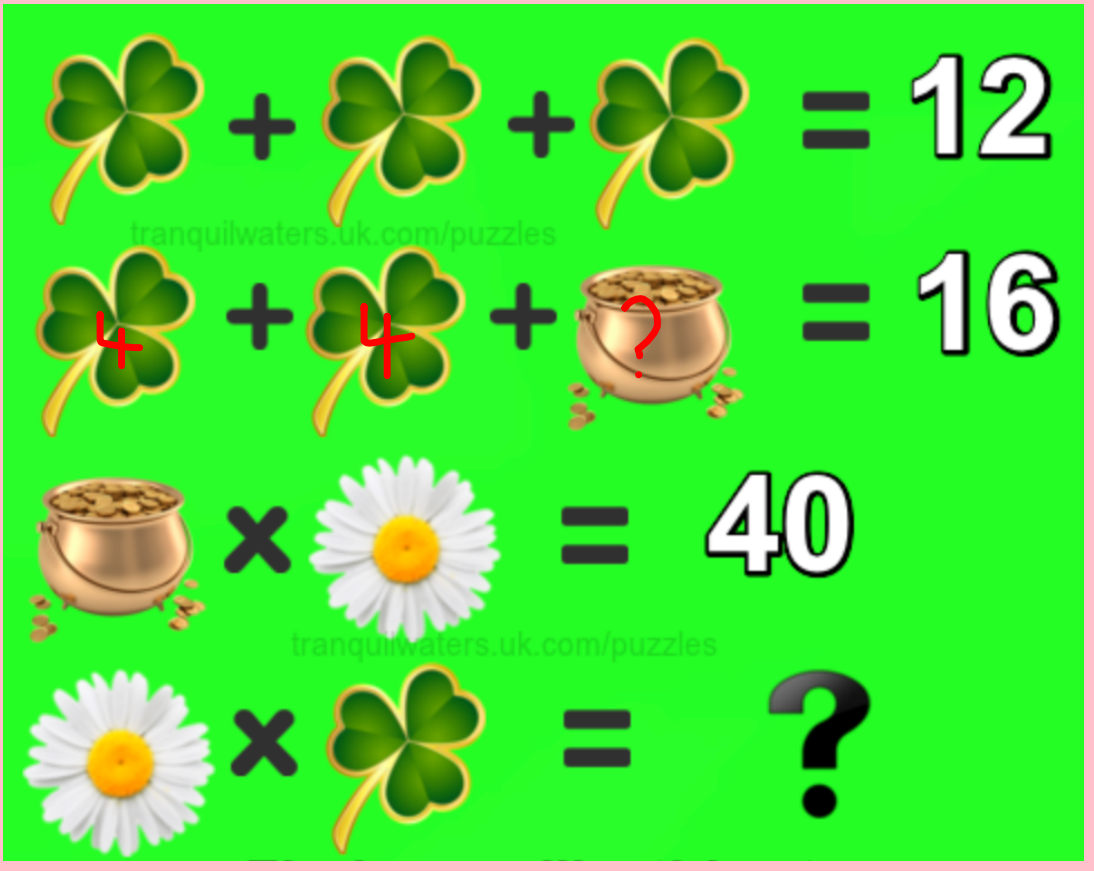
#Mathemagician



4 + 4 + 4 = 12


= 12
= 16
= 40
?
tranquilwaters.uk.com/puzzles
tranquilwaters.uk.com/puzzles

4 + 4 + 4 = 12



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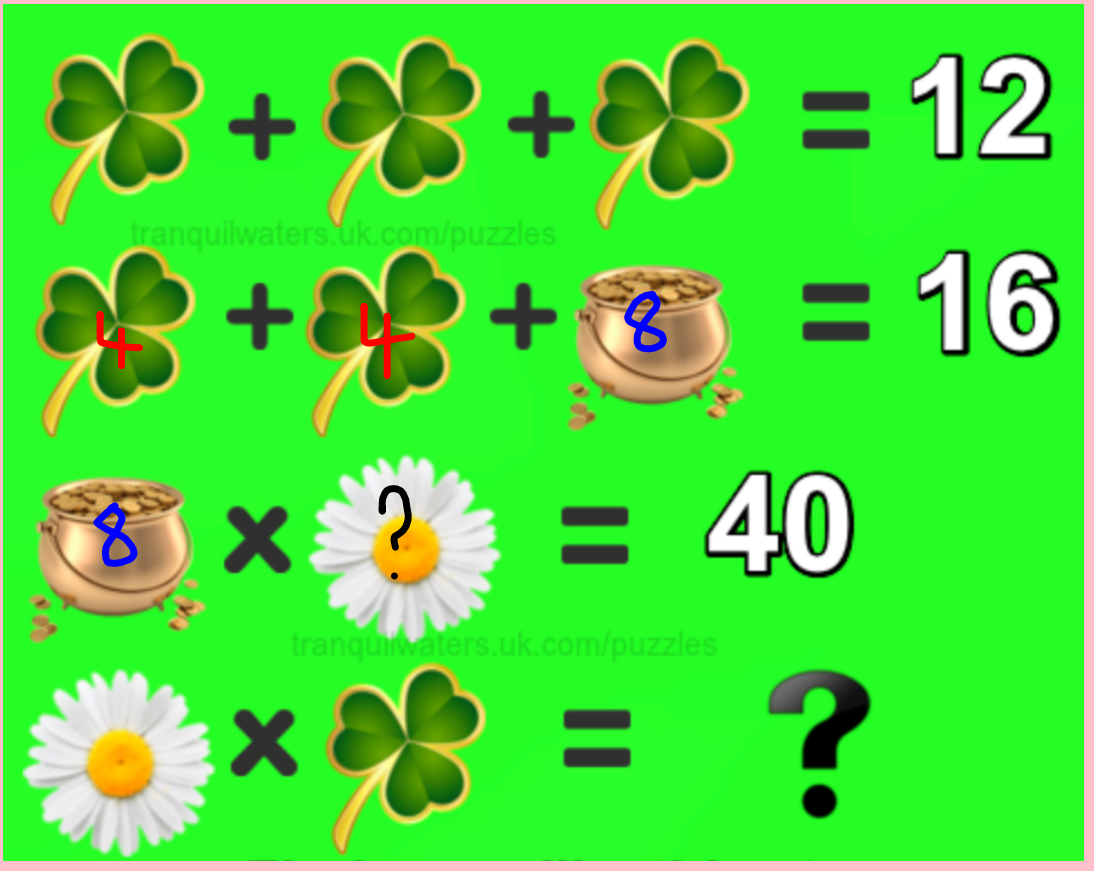
4 + 4 + 4 = 12



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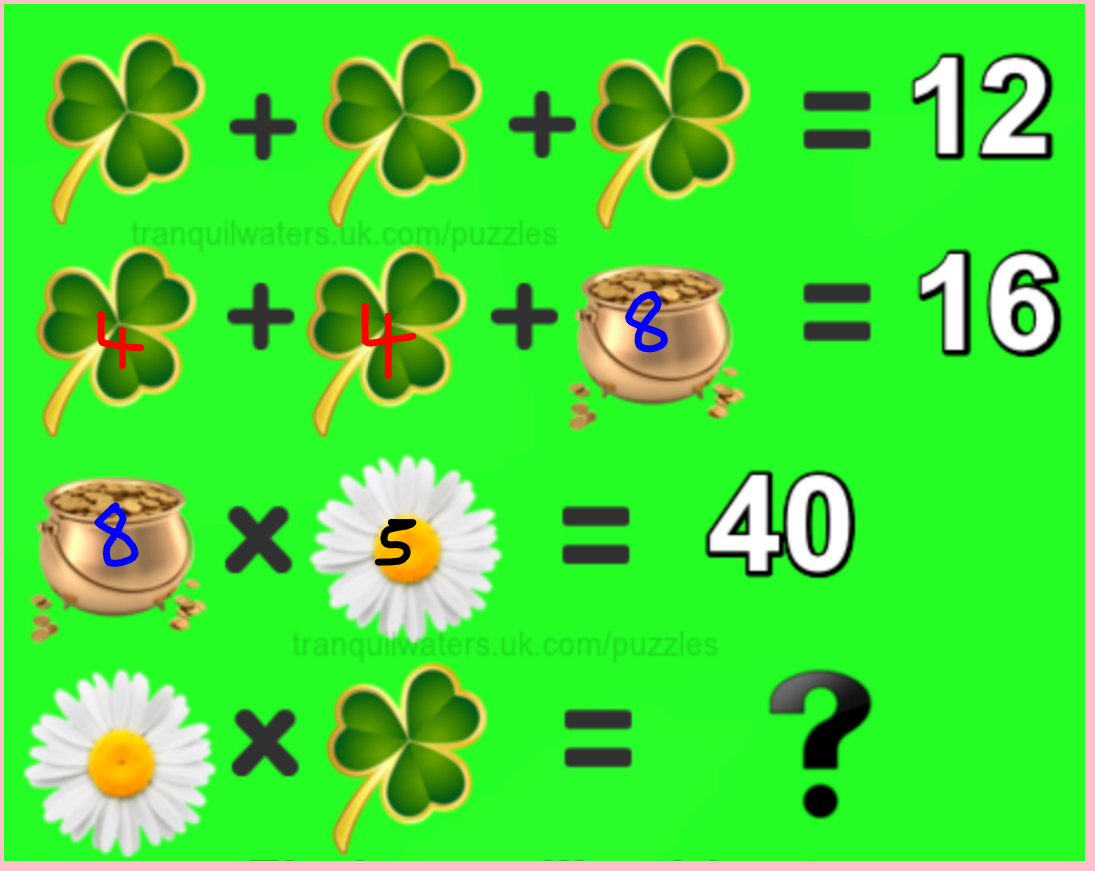
4 + 4 + 4 = 12



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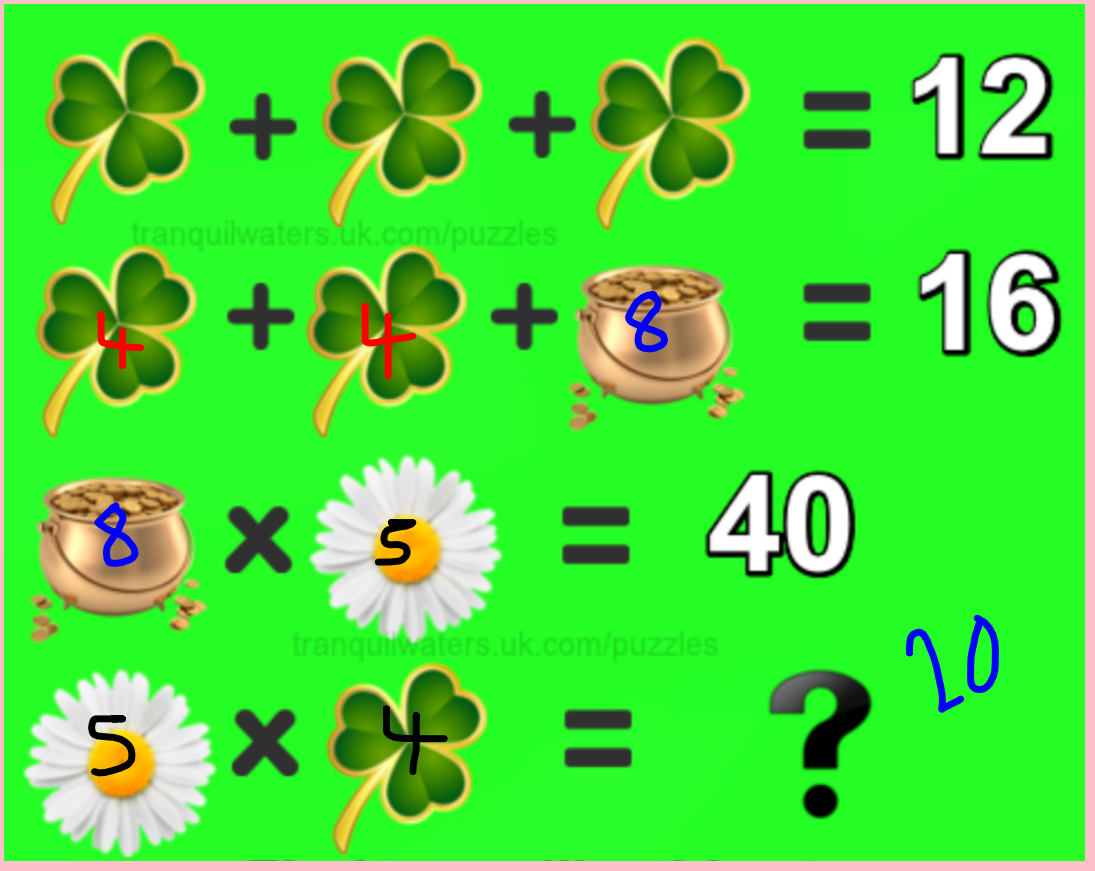
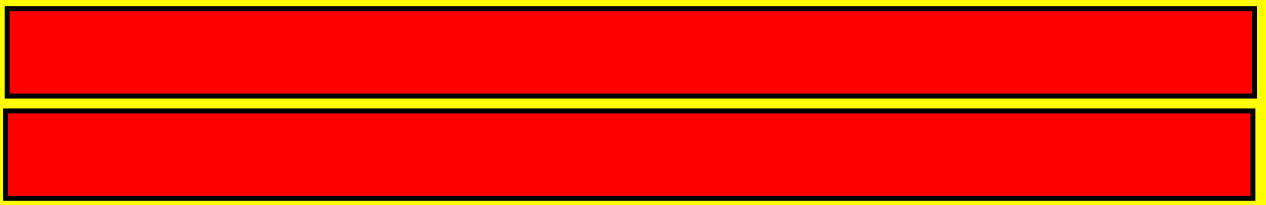
4 + 4 + 4 = 12



KS2 Recap - Calculating Percentages of Amounts

TASK:
- respond to these questions using YOUR understanding.

What does it mean to calculate the percentage of an amount?



KS2 Recap - Calculating Percentages of Amounts

TASK:
- respond to these questions using YOUR understanding.

What does it mean to calculate the percentage of an amount?

This is an example of a question: Find 20% of 300

Does this type of question jog your memory?
Write down what comes to mind.

KS2 Recap - Calculating Percentages of Amounts

Finding a percentage of an amount is all about finding how much a part of the whole thing is worth.

100% is worth the entire amount.

∴ 50% of an amount is the same as finding $\frac{?}{?}$ of the amount

∴ Why? Because 50 is  of 100.

...so to find 50% of a number, you have to divide the amount by 

TASK

Match the percentage amounts to the strategies that we can use to calculate them.

30% of an amount

25% of an amount

60% of an amount

5% of an amount

75% of an amount

10% of an amount

divide the whole amount by 10 and then multiply by 6

divide the whole amount by 4

divide the whole amount by 10 and then by 2

divide the whole amount by 10

divide the whole amount by 4 and then multiply the answer by 3

divide the whole amount by 10 and then multiply by 3

TASK

Match the percentage amounts to the strategies that we can use to calculate them.

25% of an amount divide the whole amount by 4

75% of an amount

divide the whole amount by 4 and then multiply the answer by 3

30% of an amount

divide the whole amount by 10 and then multiply by 3

60% of an amount

divide the whole amount by 10 and then multiply by 6

10% of an amount

divide the whole amount by 10

5% of an amount

divide the whole amount by 10 and then by 2

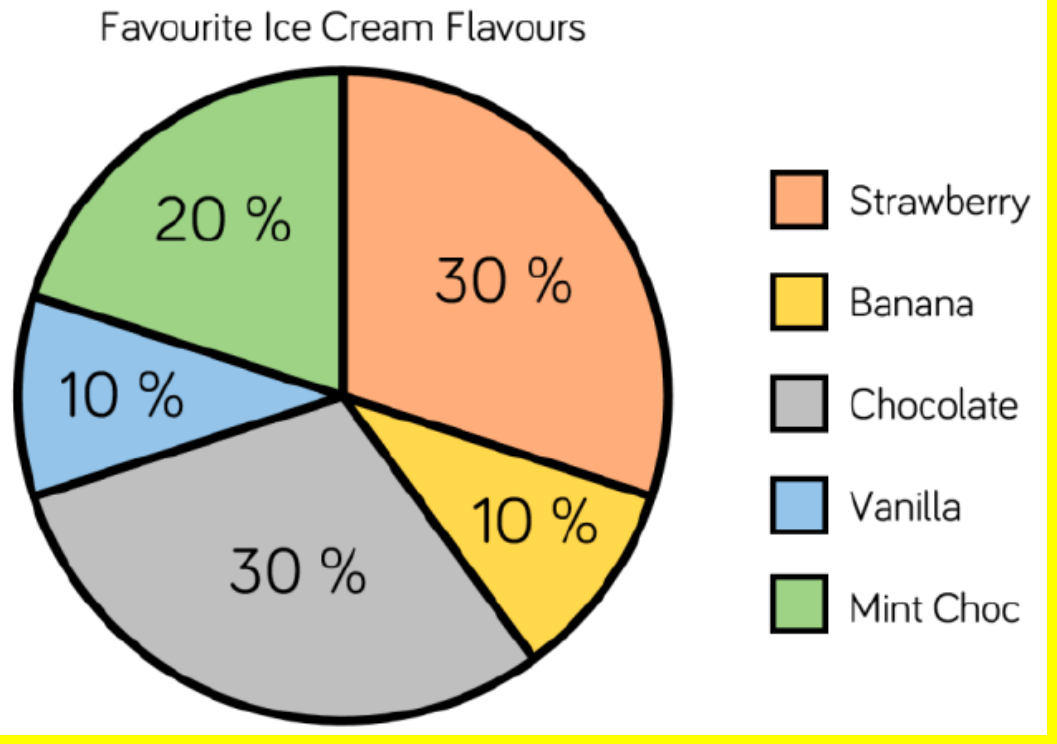
KS2 Recap - Calculating Percentages of Amounts

Calculate:
- 25% of £1644
- 10% of 560m
- 30% of 1290ml
- 75% of 360 children
- 1% of 1400 potatoes

EXT:

What are the steps to find 35% and 85% of any amount?
(hint: use your PARTITIONING knowledge)

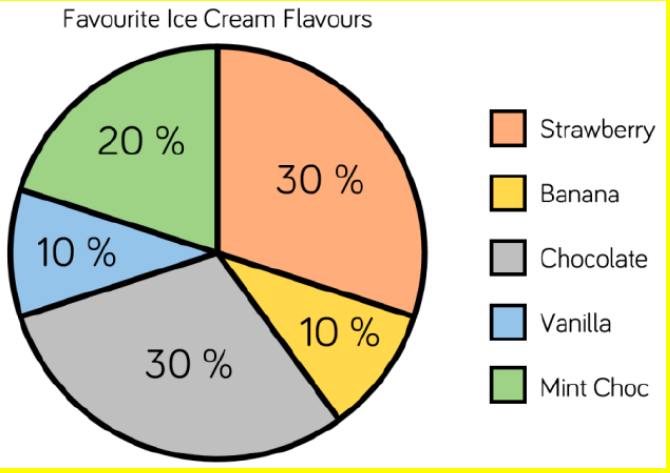
150 people voted for their favourite ice cream



Calculate the amount of people that voted for each flavour

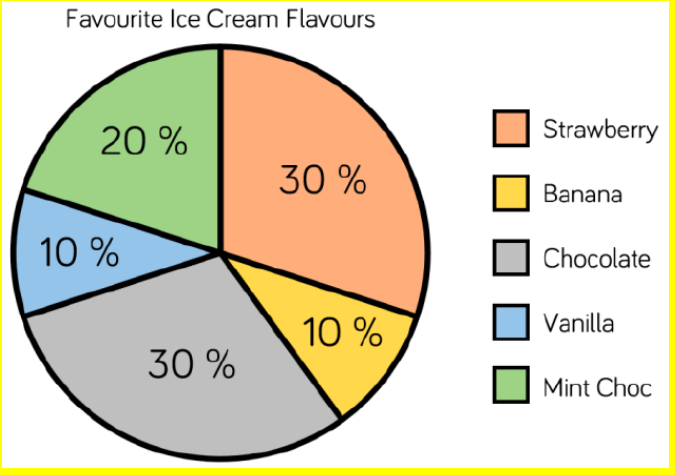
#TalkForMaths

150 people voted for their favourite ice cream



Strawberry: 30% of 150 - 10% of 150 = 15 x 3 = 45 children
Banana: 10% of 150 - 150 divided by 10 = 15
Chocolate: 30% of 150 - 10% of 150 = 15 x 3 = 45 children
Vanilla: 10% of 150 - 150 divided by 10 = 15
Mint Choc: 20% of 150 - 150 divided by 10 = 15 x 2 = 30.

150 people voted for their favourite ice cream



How many people voted for Vanilla?

How many more people voted for Chocolate than Mint Chocolate Chip?

How many people chose Chocolate, Banana and Vanilla altogether?

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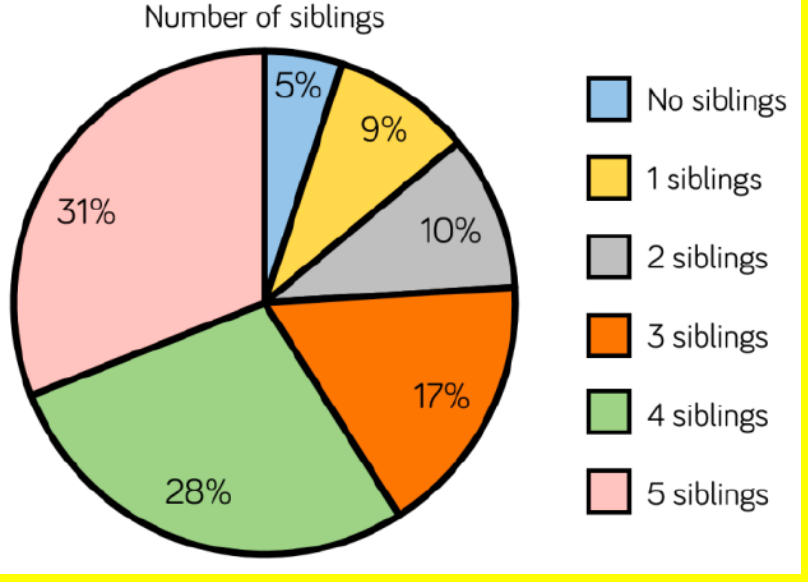
#IndependentLearning

Questions:

Stick the pie chart and accompanying questions into your book, then answer the questions (writing in full sentences or showing your working out).

15 people in this survey have no siblings. Use this information to work out how many people took part in the survey altogether.

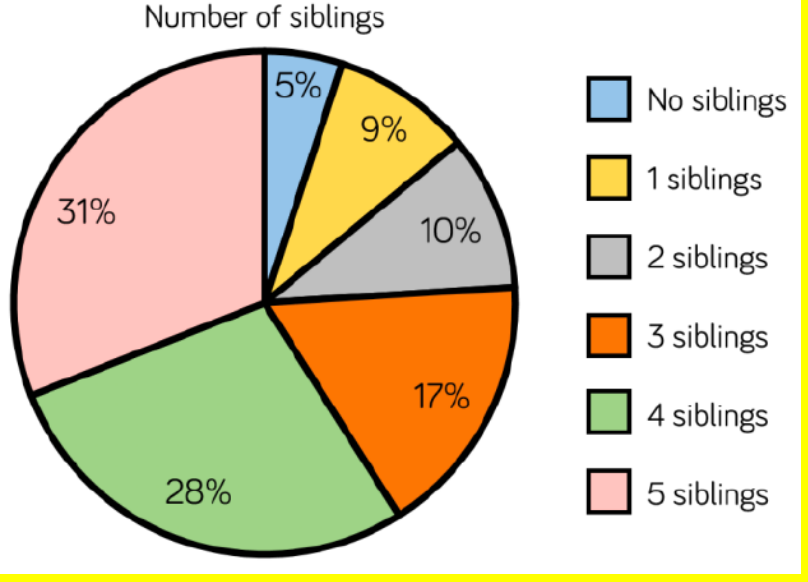


How will you approach this problem?

What can you work out using the knowledge that 15 people is worth 5%?

What knowledge do you need to work out the total?

Using the total number of participants in the survey, work out how many people each section of the pie chart is worth



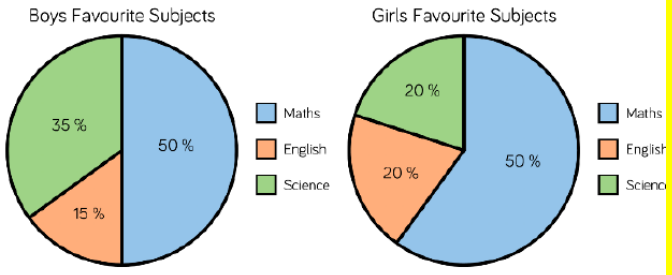
How will you approach this problem?

How can you use your knowledge of % of amounts to help you?

What knowledge do you need to work out the total?

How will you approach this problem?

120 boys and 100 girls were asked which was their favourite subject. Here are the results:



Jack says:

More girls prefer Maths than boys because 60 % is bigger than 50 %.

Do you agree? Explain why.

How will you prove that Jack is correct/incorrect?

July 9, 2020

09.07.20

LO: to construct pie charts using my knowledge of angles

Starting Tasks (7-8 mins):

1. Green Pen Task: Respond to Marking
2. Master Mathematician
3. Mathemagician

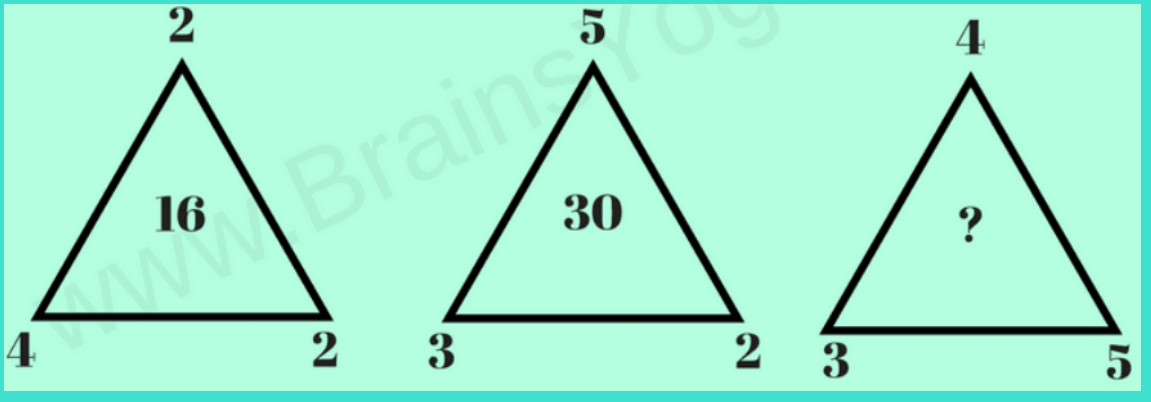
Success Criteria

-
-
-

July 9, 2020

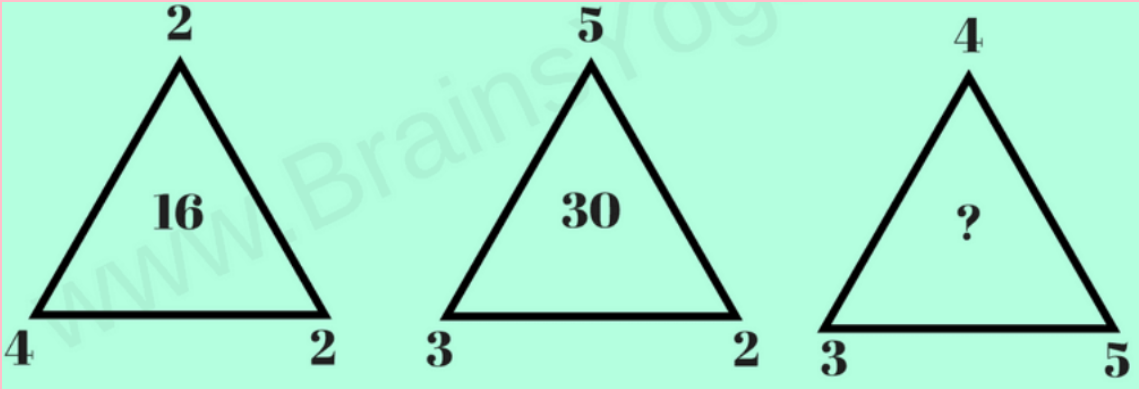
#Mathemagician

Riddle Me This...



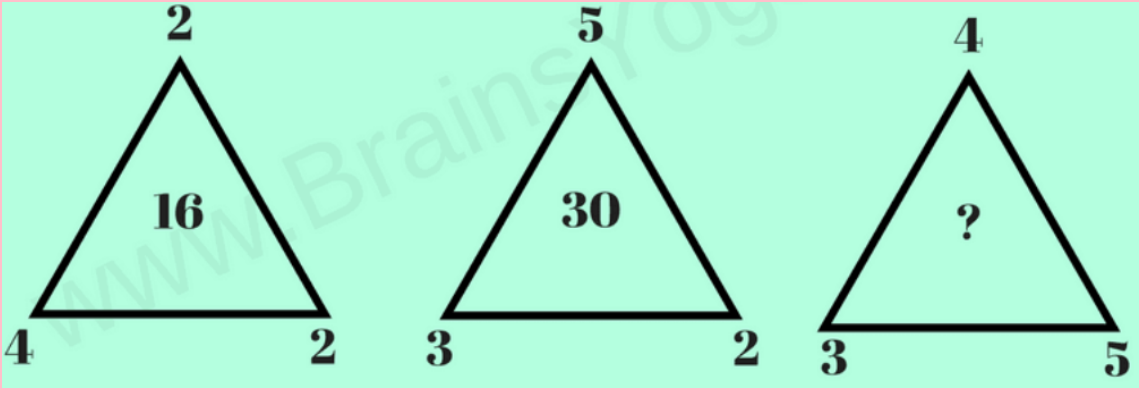
Remember to write down and explain your reasoning behind your response.

Answers to #Mathemagician



Obviously, it seems as though the numbers on the corners of each triangle create the number in the middle.

Answers to #Mathemagician



Does it work with addition? Definitely not.

Does it work with multiplication? Possible

4 x 2 x 2 = 16 ✓

5 x 3 x 2 = 30 ✓

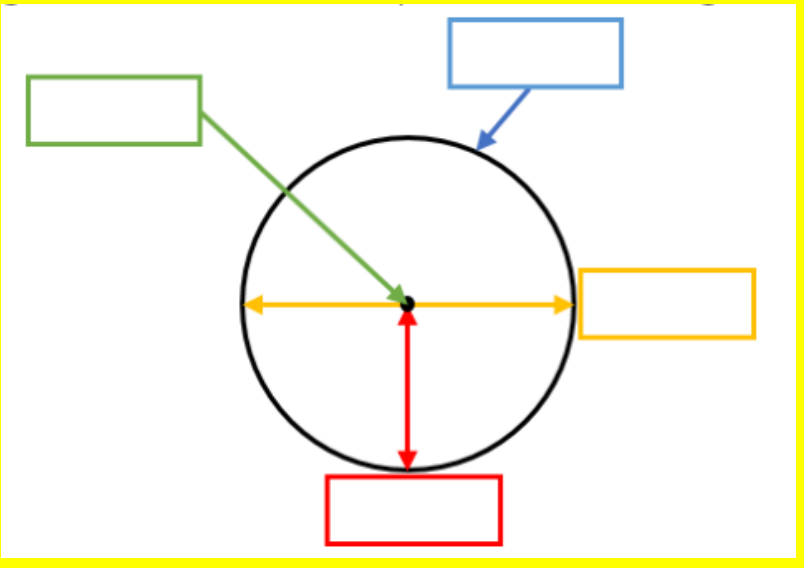
4 x 3 x 5 = ____

Features of a Circle

How will you prove that Jack is correct/incorrect?

Features of a Circle - KS2 Recap

Do you remember the features of a circle?



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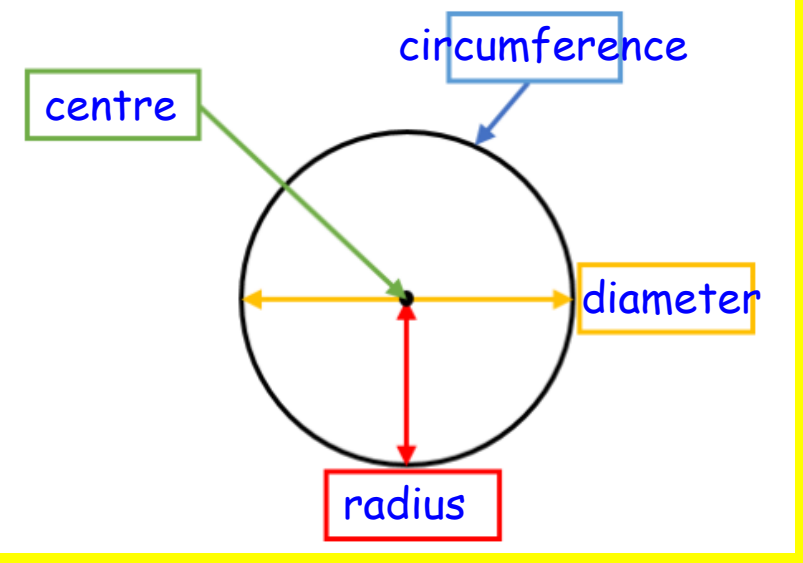
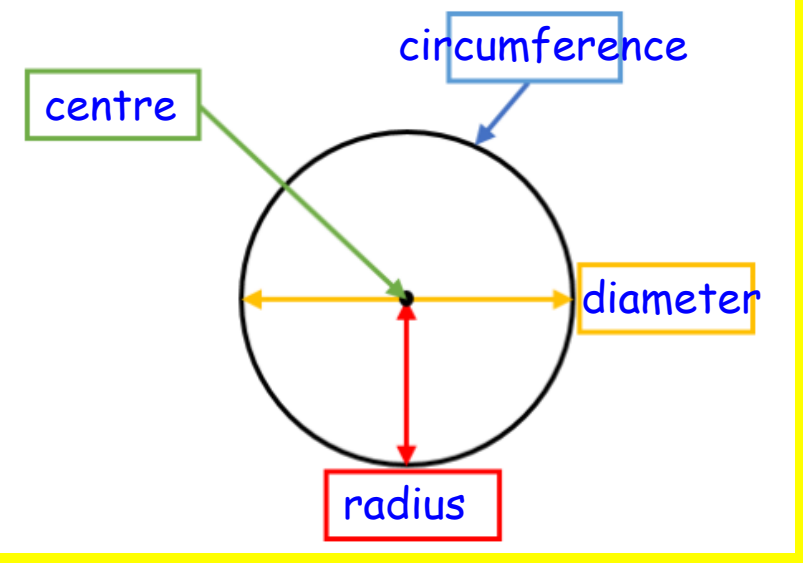


Features of a Circle - KS2 Recap

Do you remember the features of a circle?



Creating a Circle

What you have in your hands is a compass.

Place your pencil into the hole and tighten it by rotating the 'screw'.

Make sure the tip of the pencil matches up with the tip of the sharp edge.

Creating a Circle

Measure an accurate gap of 5cm between the edge of the pencil and the sharp point of the compass.

NB: make sure that is EXACTLY 5cm

Creating a Circle

Place the sharp point firmly on the book and carefully hold the compass by the top and move it around in a circle

EXT: measure the diameter of the circle - how long is it?

Creating a Circle

Place the sharp point firmly on the book and carefully hold the compass by the top and move it around in a circle

EXT: measure the diameter of the circle - how long is it?

Have another go at creating circles

July 9, 2020

Favourite Subjects in School

I conducted a survey with my family and friends.

I wanted to find out what they considered their favourite subject to be in school

Subject(s)	Numbers

Number of Participants: 12

Favourite Subjects in School

Here were the results:

Subject(s)	Numbers
Maths	3
English	5
PE	6
Art	2
History	8

Number of Participants: ?

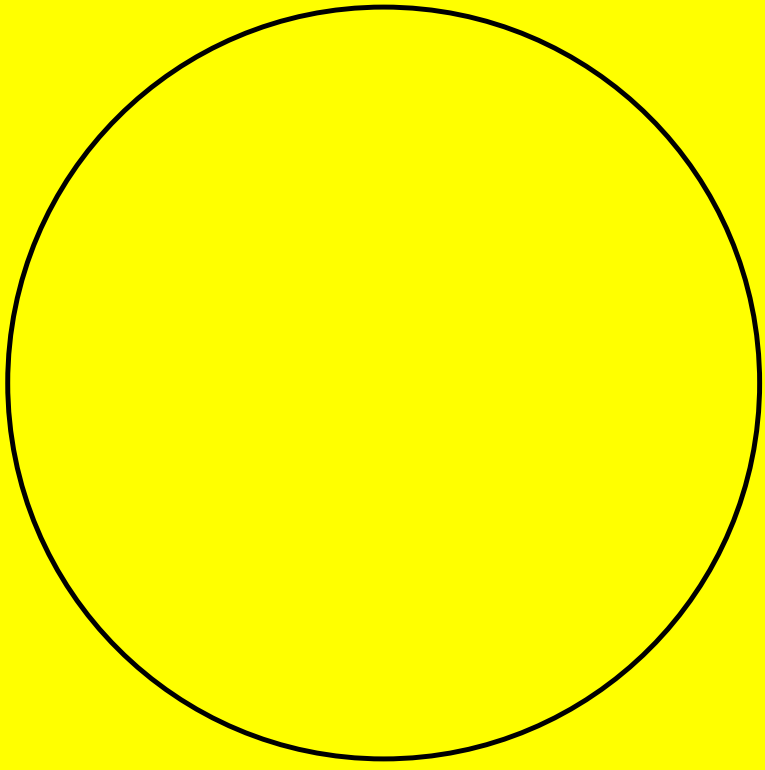
Favourite Subjects in School

Now that we have our results, I needed to represent the data in a pie chart.

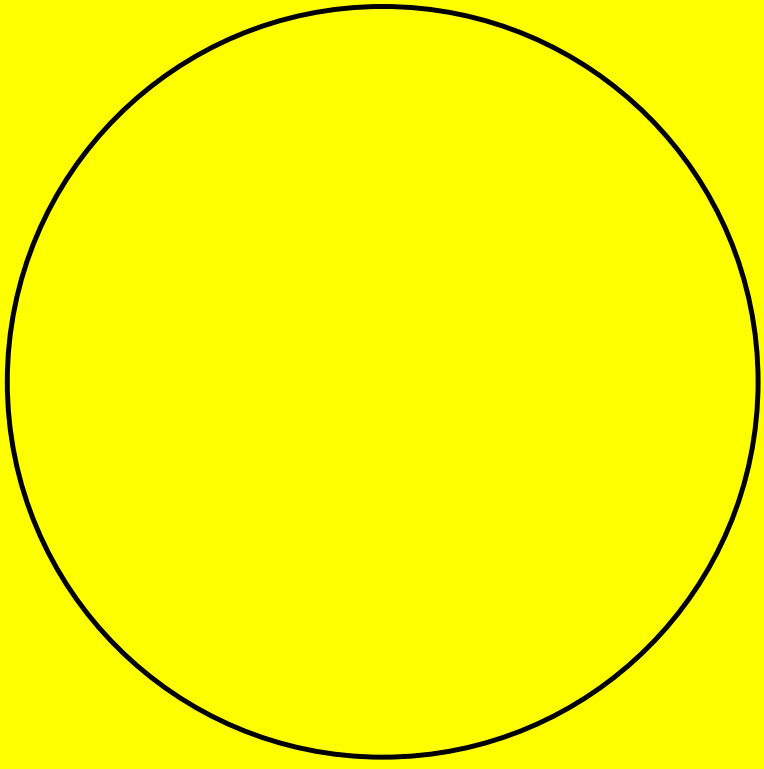
Subject(s)	Numbers
Maths	3
English	5
PE	6
Art	2
History	8

Number of Participants: ?

Step 1: Draw the circle



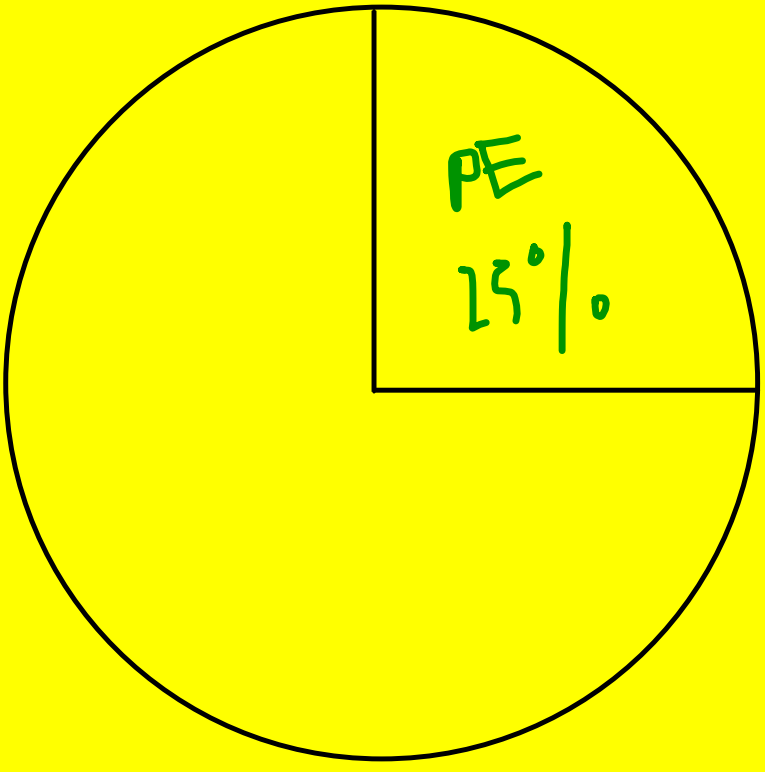
Step 2: Use the results to determine how much of the pie chart each subject receives.



The whole pie chart is equal to 24 individuals as that is the number I interviewed.

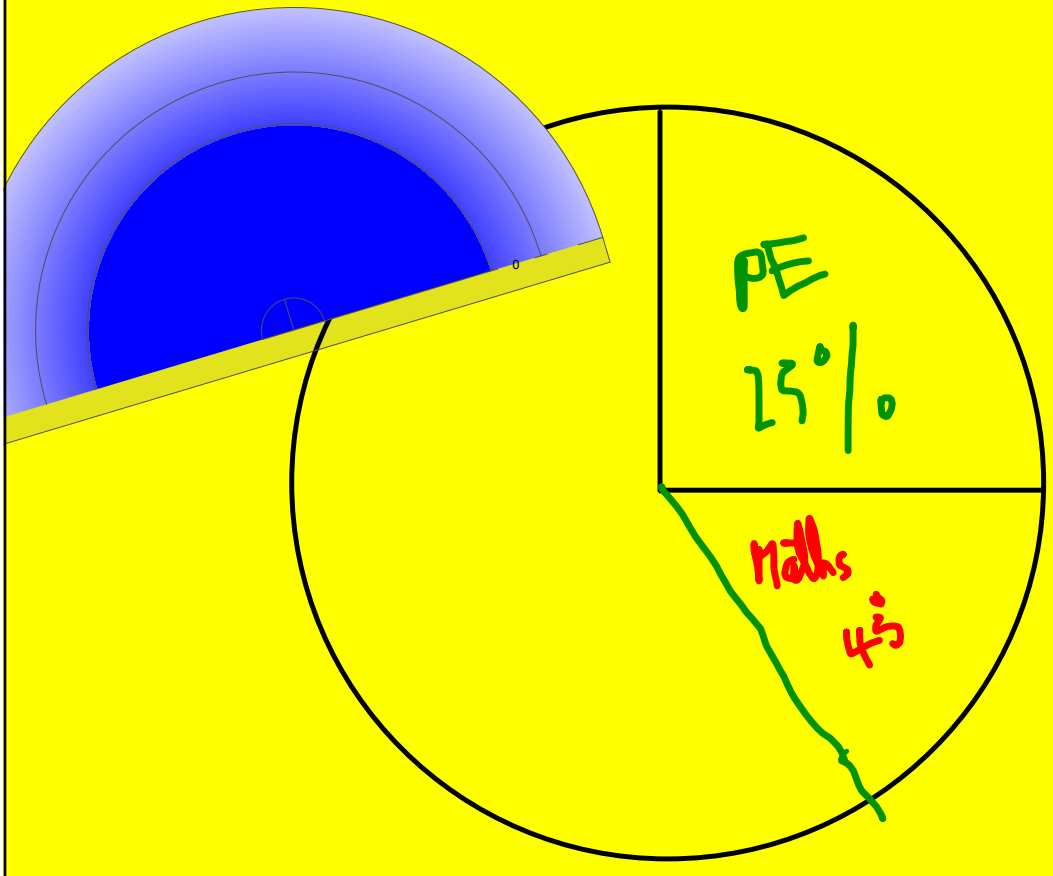
Can I use any fractional knowledge from the results?

Step 3: use my knowledge of fractions



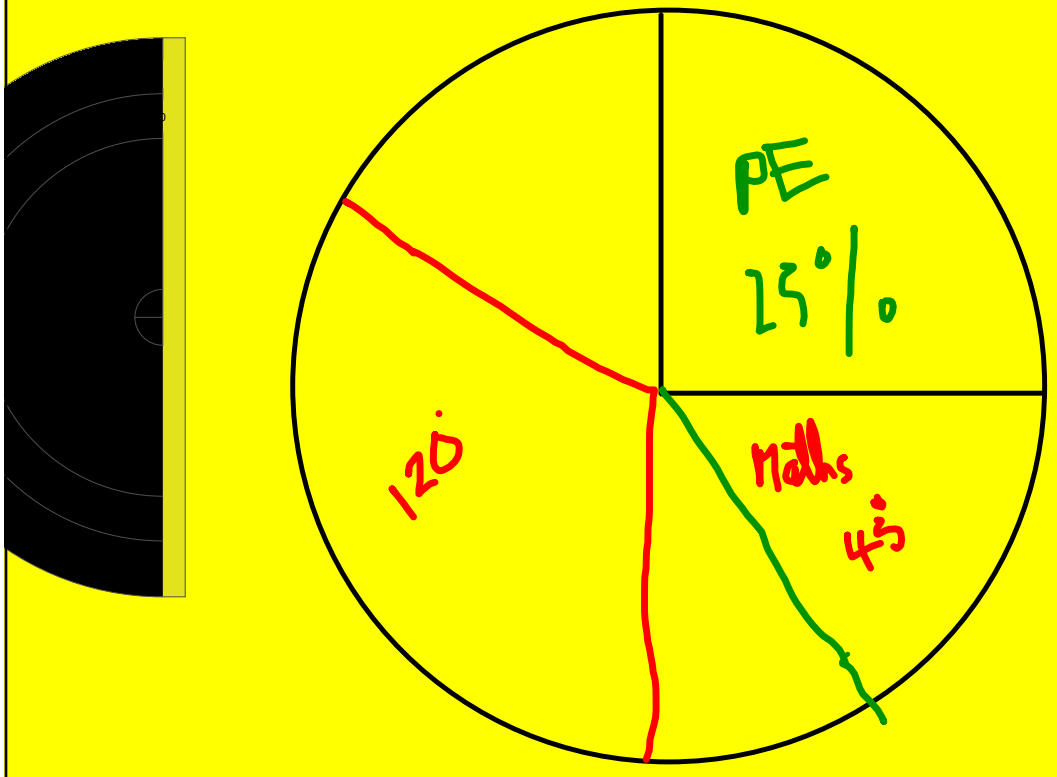
I know that 6 people voted for PE and 6 is one quarter of 24. (6 x 4 = 24). This means that a quarter of my chart is for PE

Step 4: use my knowledge of fractions (and then angles)



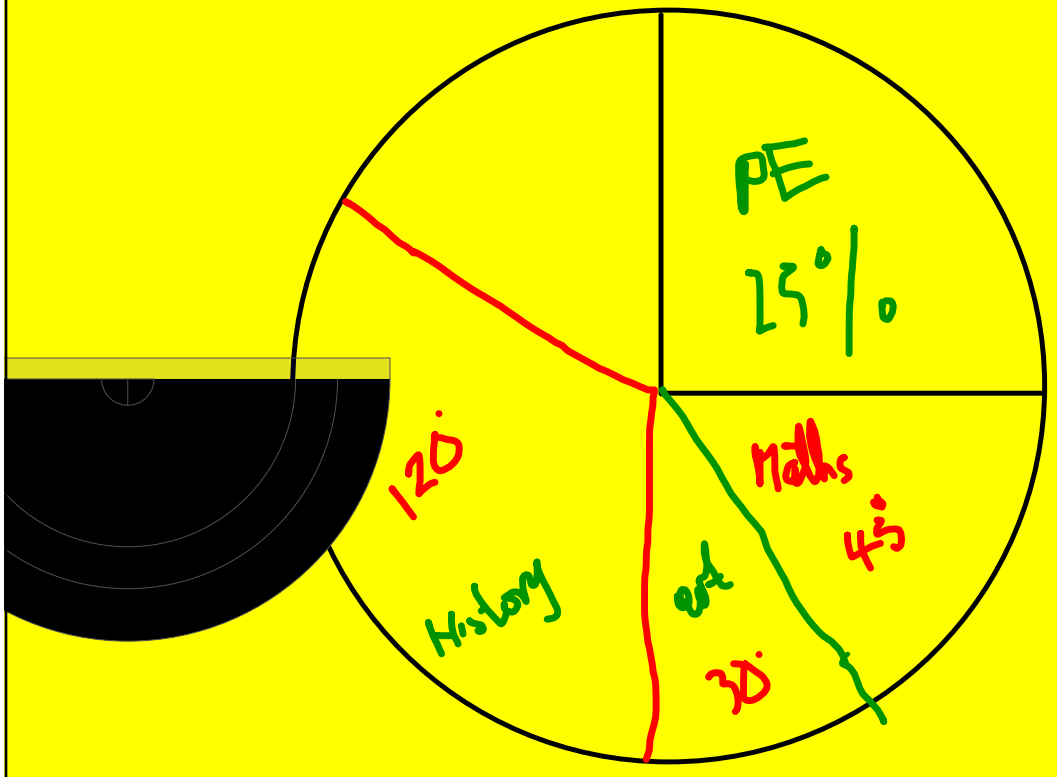
I know that 3 people voted for Maths and because 3 x 8 = 24, this is 1/8 of the chart. 360° divided by 8 = 45

Step 4: use my knowledge of fractions (and then angles)



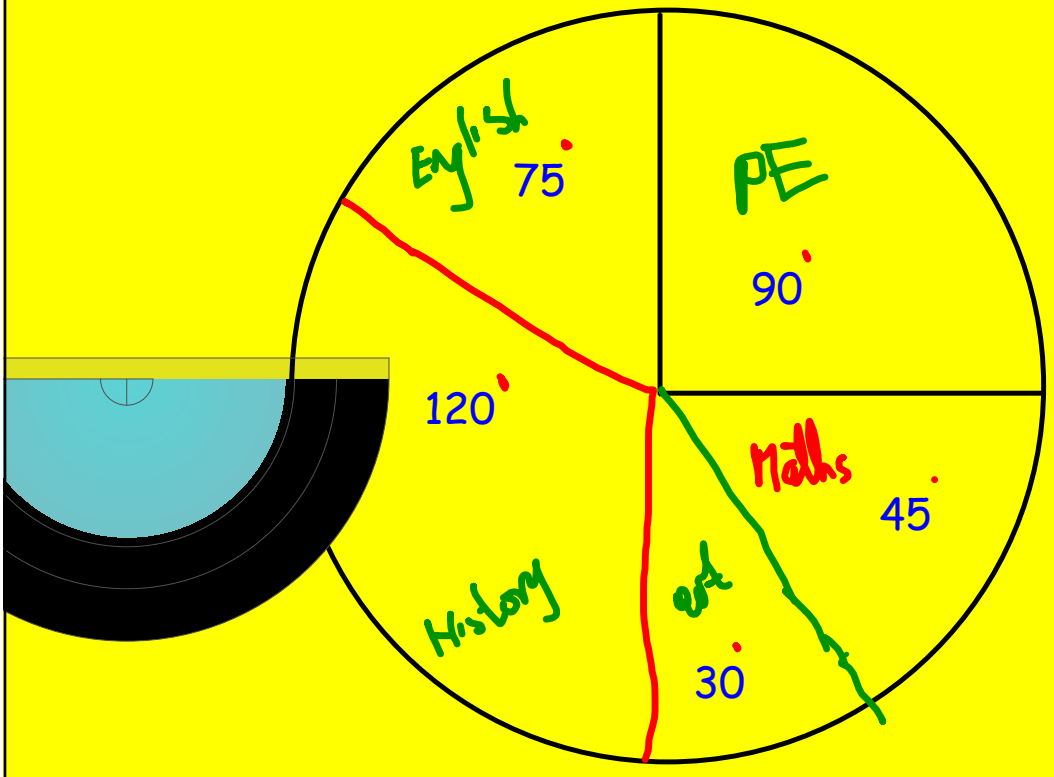
I know that 8 people out of 24 is equivalent to 1/3 so 360 divided by 3 = 120

Step 4: use my knowledge of fractions (and then angles)



I know that 2 out of 24 = 2/24 = 1/12 so 360 divided by 12 = 30

Step 4: use my knowledge of fractions (and then angles)



I know that 2 out of 24 = 2/24 = 1/12 so 360 divided by 12 = 30

Recap

1. Draw circle
2. Use the results to determine how much of the pie chart each subject receives.
3. Use knowledge of fractions with the results to construct the easier parts of the pie chart.
4. Use knowledge of angles to create the rest of the pie chart
5. Double check.

Favourite Subjects in School

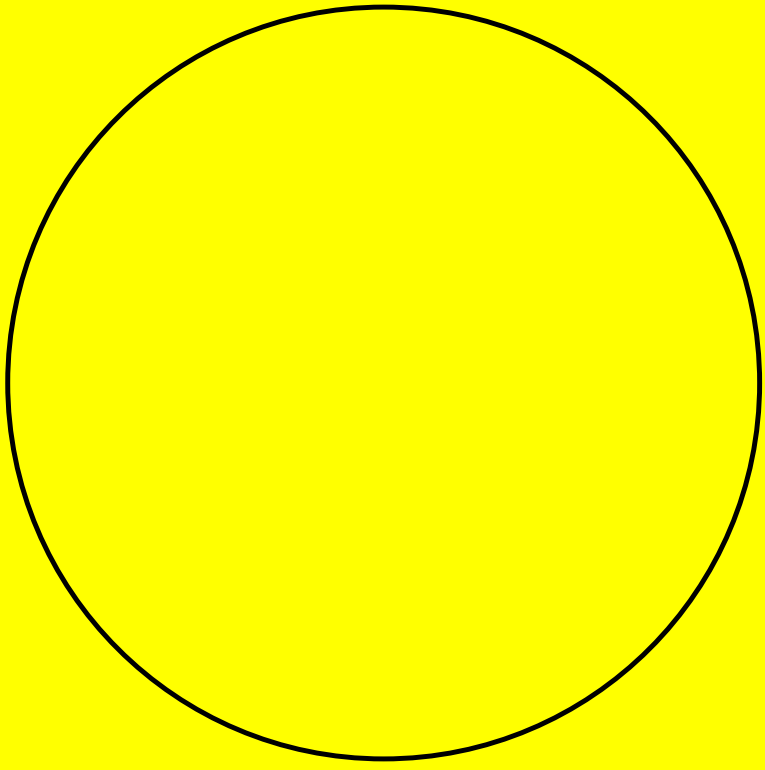
Now that we have our results, I needed to represent the data in a pie chart.

Let's try it using a different method

Subject(s)	Numbers
Maths	3
English	5
PE	6
Art	2
History	8

Number of Participants: ?

Step 1: Draw the circle



We know that a circle's angles add up to 360.
This means that 100% of the pie chart will equal 24 people
(this is the total number of people who participated).

∴ each person's vote is worth 360 divided by 24 =

Step 2: calculate what each person's vote is worth in degrees.

$360 \div 24 = 15$

Step 3: use the calculation to work out how big each section will be worth on the pie chart.

Step 2: calculate what each person's vote is worth in degrees.

$360^\circ \div 24 = 15^\circ$

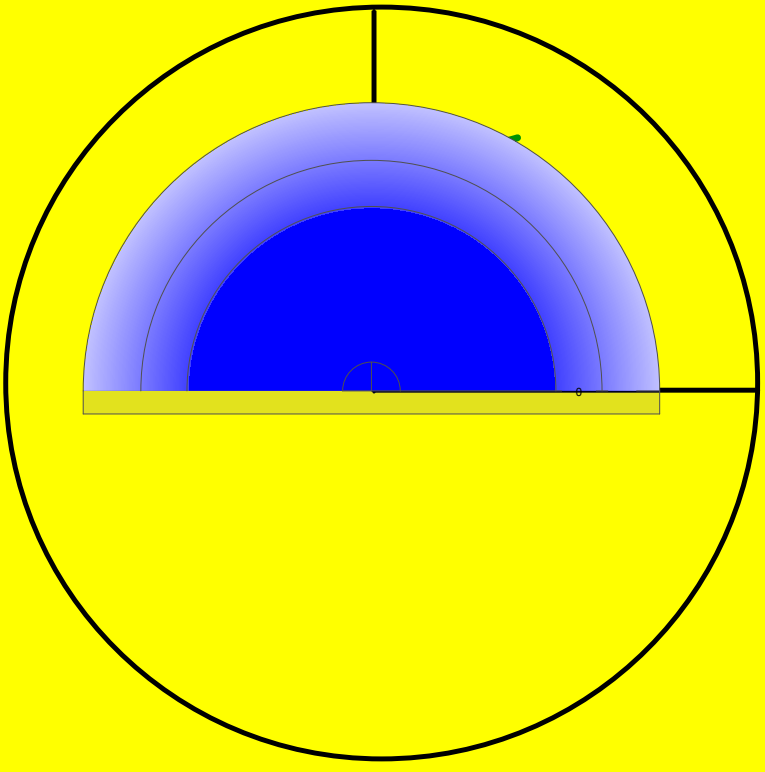
Subject(s)	Numbers	Proportion of the Pie Chart
Maths	3	15° (each vote) x 3 =
English	5	
PE	6	
Art	2	
History	8	

Step 2: use the calculation to work out how big each section will be worth on the piec chart.

What do you notice that the angle sum of each subject comes to?

Subject(s)	Numbers	Proportion of the Pie Chart
Maths	3	15° (each vote) x 3 =
English	5	15° (each vote) x 5 =
PE	6	15° (each vote) x 6 =
Art	2	15° (each vote) x 2 =
History	8	15° (each vote) x 8 =

Step 3: use the results to construct the pie chart
(don't forget your protractor!)



I know that 6 people voted for PE and 6 is one quarter of 24. (6 x 4 = 24). This means that a quarter of my chart is for PE

Favourite Subjects in School

Let's conduct a survey.

We want to find out what children consider to be their favourite subject.

Subject(s)	Numbers

Number of Participants: 12

Favourite Subjects in School

Now that we have our results, we need to represent the data in a pie chart.

Subject(s)	Numbers

Number of Participants: 12

Remember the steps...

Step 1: Draw the circle

Step 2: calculate what each person's vote is worth in degrees.

$360^{0} \div$ number of votes = ?

Step 3: use the calculation to work out how big each section will be worth on the pie chart.

Subject(s)	Numbers	Proportion of the Pie Chart

Number of Participants:

#IndependentLearning

Questions:

Use the table of collated results to create a pie chart to represent the data.

Remember to check your working out and see whether it is accurate

July 9, 2020