

Draw pie charts

Notes and guidance

In this small step, children complete their exploration of pie charts by drawing them.

Children recap what a pie chart represents, with the whole being worth 100%. They start by drawing simple pie charts, with each part being worth 50% or 25%, where they can easily see one half and one quarter of the chart. They then move on to constructing pie charts where guidelines are provided, firstly in 10% intervals and then at 1% intervals. Children need to use their conversion skills to work out what percentages are needed.

Finally, children construct pie charts using a protractor. They use division to work out how many degrees represent each item of data, and then multiplication to find the angle for each sector.

Things to look out for

- Children may confuse the angle with the percentage or the number that a sector represents.
- Children may need reminding how to use a protractor.
- When drawing a pie chart using a protractor, children may use the frequency as the size of the angle rather than working out what the angle should be.

Key questions

- What percentage does the whole pie chart represent?
- How can I show _____% of a pie chart?
- How many degrees are there in a full turn?
- If there are _____ in total and a part is _____, what fraction is the part of the whole?
- How can you work out the percentage/angle that represents each sector?
- How do you use a protractor? How do you know which scale to use?

Possible sentence stems

- The fraction/percentage of _____ is _____
- The whole pie chart is _____°
This represents _____ items of data.
Each item of data is represented by _____ ÷ _____ = _____°

National Curriculum links

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

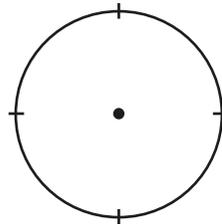
Draw pie charts

Key learning

- 20 cars drove past a school one morning. The table shows the colours of the cars.

Complete the table and show the information on the pie chart.

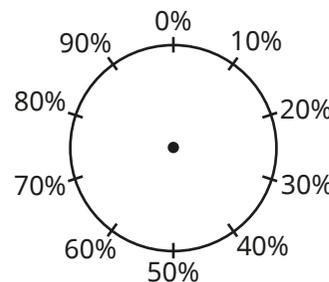
Colour	Number	Fraction of total	% of total
Red	5		
Blue	5		
Black	10		



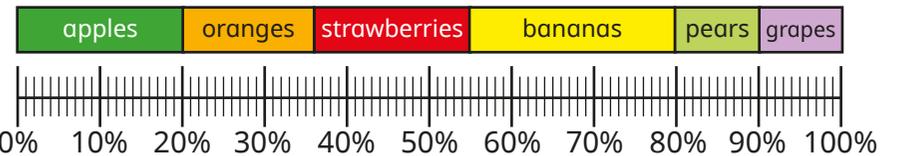
- 100 people were asked to name their favourite ice cream. The table shows the results.

Use the information to draw a pie chart.

Flavour	Number	Fraction of total	% of total
Chocolate	10	$\frac{1}{10}$	10%
Vanilla	30		
Strawberry	20		
Mint	40		



- Draw a pie chart using the data shown in the percentage bar model.



What is the same and what is different about the two diagrams?

- The table shows how 36 children travel to school.

Type of transport	Number of children	Angle
Car	12	$12 \times 10 = 120^\circ$
Bike	7	
Walk	8	
Bus	5	
Scooter	4	
Total	36	360°

Complete the table.

Use a protractor to help you draw a pie chart to show the data.

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Reasoning and problem solving

Rosie asked the children in Year 6 to name their favourite sport.



The table shows the results.

Complete the table and draw a pie chart to show the information.

Sport	Total	Angle
Football	10	
Tennis	18	
Rugby		_____ × 6 = 90°
Swimming	6	6 × 6 = 36°
Cricket		_____ × 6 = 42°
Golf	4	4 × 6 = 24°
Total	60	360°

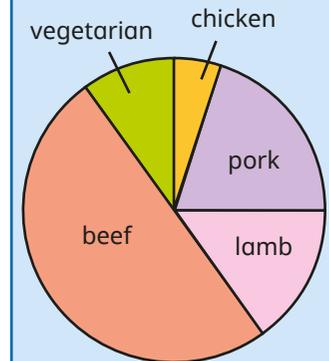


The owner of a restaurant is working out which Sunday dinner is most popular.



Complete the table and draw a pie chart to show the information.

Dinner	Total	Angle
Chicken	2	
Pork	8	
Lamb	6	
Beef	20	180°
Vegetarian	4	
Total		



Write some questions about your pie chart for a partner to answer.

