

# 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

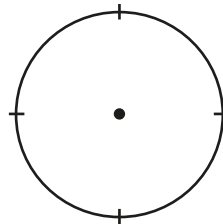
## Key learning

- 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		

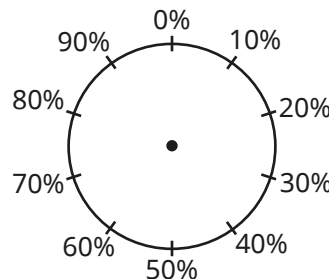


- 100 people were asked to name their favourite ice cream.

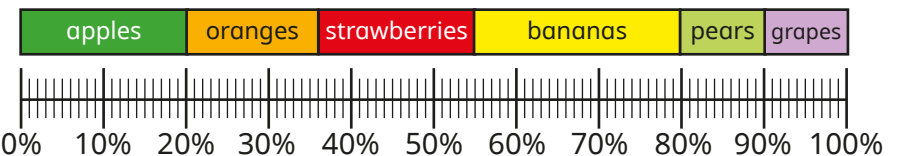
The table shows the results.

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	
<b>Total</b>	<b>36</b>	<b><math>360^\circ</math></b>

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.

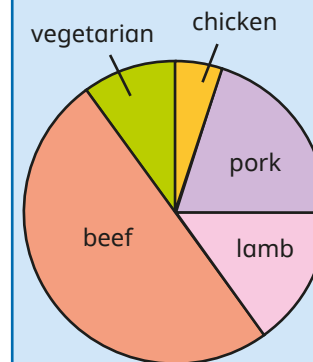
Sport	Total	Angle
Football	10	
Tennis	18	
Rugby		$\text{_____} \times 6 = 90^\circ$
Swimming	6	$6 \times 6 = 36^\circ$
Cricket		$\text{_____} \times 6 = 42^\circ$
Golf	4	$4 \times 6 = 24^\circ$
<b>Total</b>	<b>60</b>	<b><math>360^\circ</math></b>



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	$180^\circ$
Vegetarian	4	
<b>Total</b>		



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