

Diving into Mastery



Draw Line Graphs

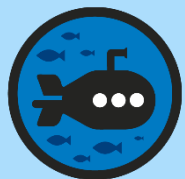
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Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



Diving



Deeper



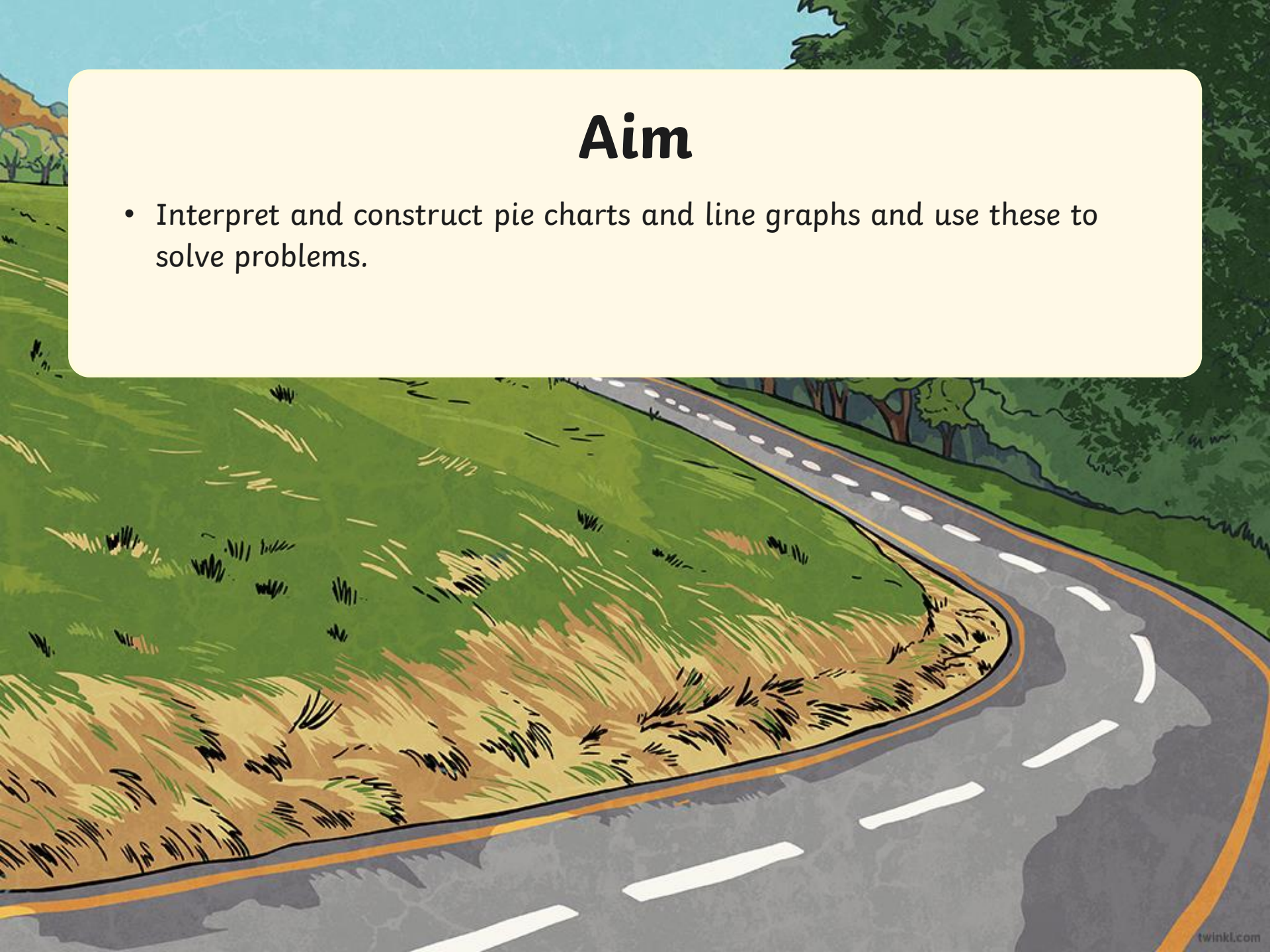
Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

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



Draw Line Graphs

Diving

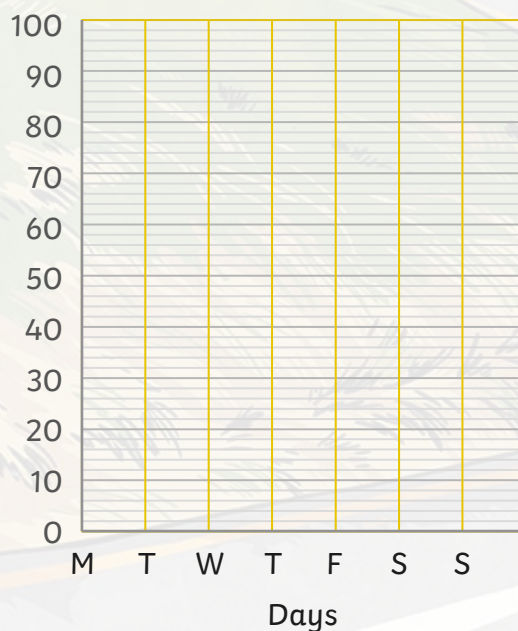


A cyclist is travelling from his home in England to Scotland. The data shows how far from home he was at the end of each day. Yasmin is drawing a line graph of the data.

She has started the graph and has labelled the x-axis

What intervals should Yasmin use on the y-axis – multiples of 10, multiples of 50 or multiples of 100?

Monday	50km
Tuesday	90km
Wednesday	210km
Thursday	295km
Friday	330km
Saturday	410km
Sunday	480km



Multiples of 10 would not be large enough.

Draw Line Graphs

Diving

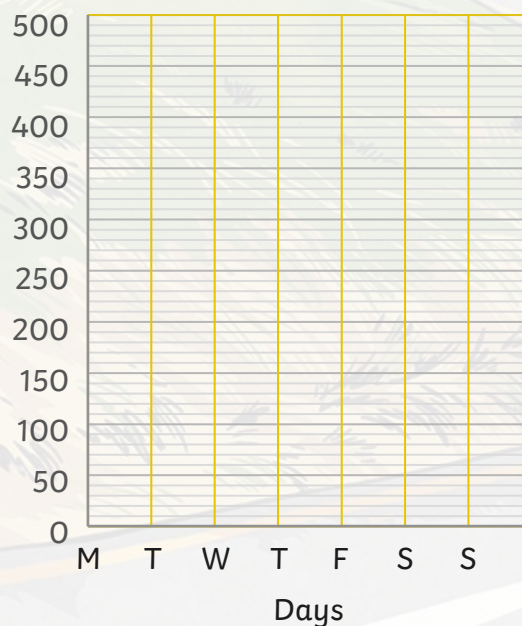


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What intervals should Yasmin use on the y-axis – multiples of 10, multiples of 50 or multiples of 100?

Monday	50km
Tuesday	90km
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Multiples of 50 would be large enough to fit the greatest distance on.

Draw Line Graphs

Diving

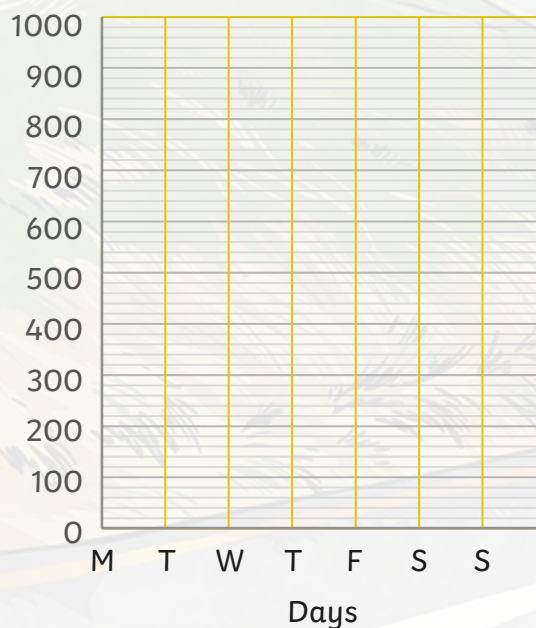


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She has started the graph and has labelled the x-axis

What intervals should Yasmin use on the y-axis – multiples of 10, multiples of 50 or multiples of 100?

Monday	50km
Tuesday	90km
Wednesday	210km
Thursday	295km
Friday	330km
Saturday	410km
Sunday	480km



Multiples of 100 would be large enough to fit the greatest distance but there would be a lot of the graph paper not used.

Draw Line Graphs

Diving

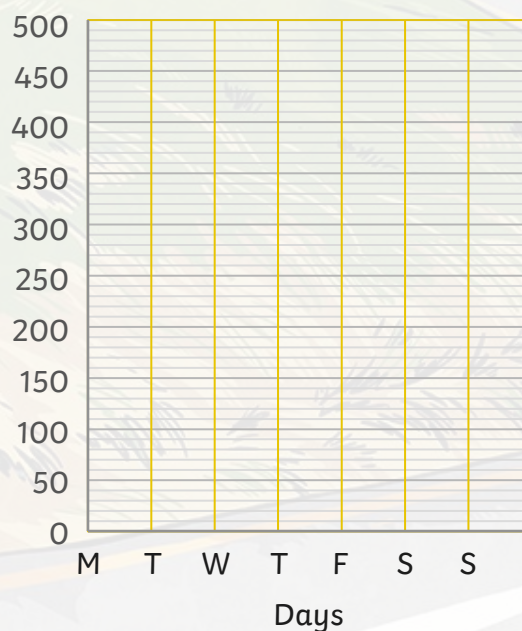


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Multiples of 50 would be best.

Draw Line Graphs

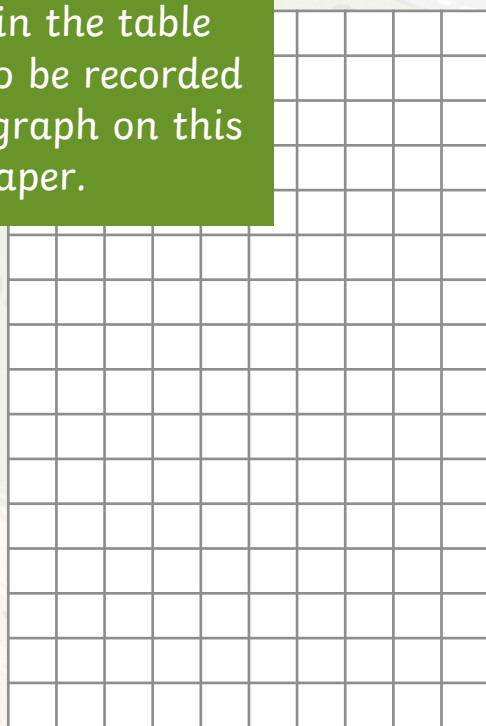
Deeper



Two children are growing plants. This is how they grew over the first 3 weeks:

	Start	Week 1	Week 2	Week 3
Suzie	10cm	18cm	29cm	35cm
Sam	15cm	24cm	32cm	46cm

The data in the table is going to be recorded as a line graph on this piece of paper.



Draw Line Graphs

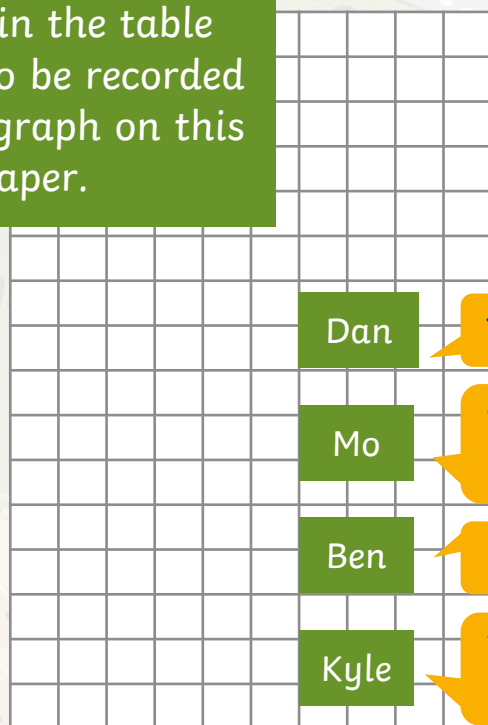
Deeper



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Suzie	10cm	18cm	29cm	35cm
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The data in the table is going to be recorded as a line graph on this piece of paper.



Here are some things different children said about how to draw the graph using cm^2 paper. Which ones do you agree with? If you do not agree, explain why.

Dan

The x-axis should show the height.

Mo

The y-axis should have increments which are multiples of 5.

Ben

The x-axis should show the time.

Kyle

The y-axis should have increments which are multiples of 2.

On a line graph, the x-axis normally shows the passage of time.

Draw Line Graphs

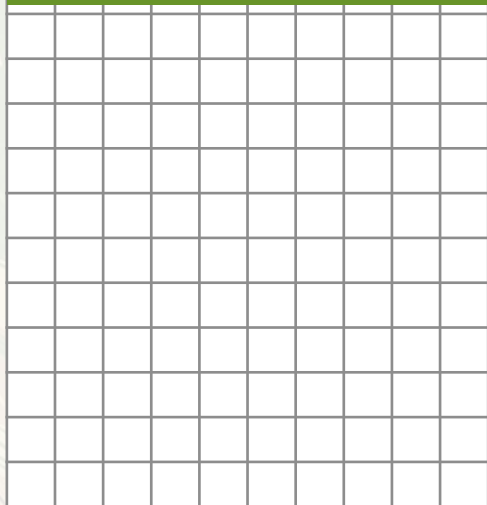
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Draw Line Graphs

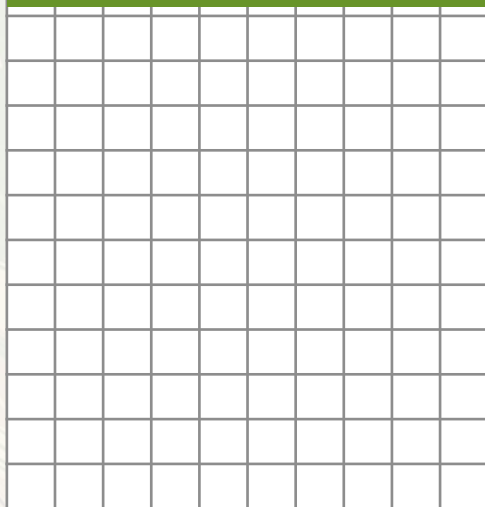
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Draw Line Graphs

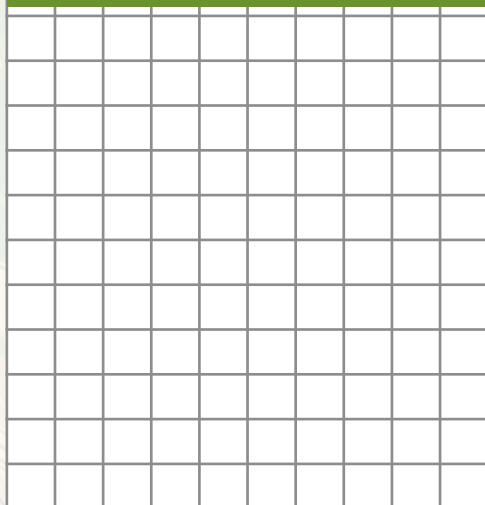
Deeper



Two children are growing plants. This is how they grew over the first 3 weeks:

	Start	Week 1	Week 2	Week 3
Suzie	10cm	18cm	29cm	35cm
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The data in the table is going to be recorded as a line graph on this piece of paper.



Here are some things different children said about how to draw the graph using cm² paper. Which ones do you agree with? If you do not agree, explain why.

Dan

The x-axis should show the height.

Mo

The y-axis should have increments which are multiples of 5.

Ben

The x-axis should show the time.

Kyle

The y-axis should have increments which are multiples of 2.

If the y-axis was divided into multiples of 2, the paper would not be big enough for the greatest height (46cm).

Draw Line Graphs

Deepest



A driver set off on his daily journey at 06:00. This table shows how far he travelled throughout the day:

Time	Distance
07:00	17 miles
08:00	35 miles
09:00	67 miles
10:00	67 miles
11:00	82 miles
12:00	99 miles
13:00	130 miles
14:00	142 miles

Patricia draws a line graph. The increments along the x-axis are divided into multiples of 2 hours. (06:00, 08:00, 10:00, etc.)

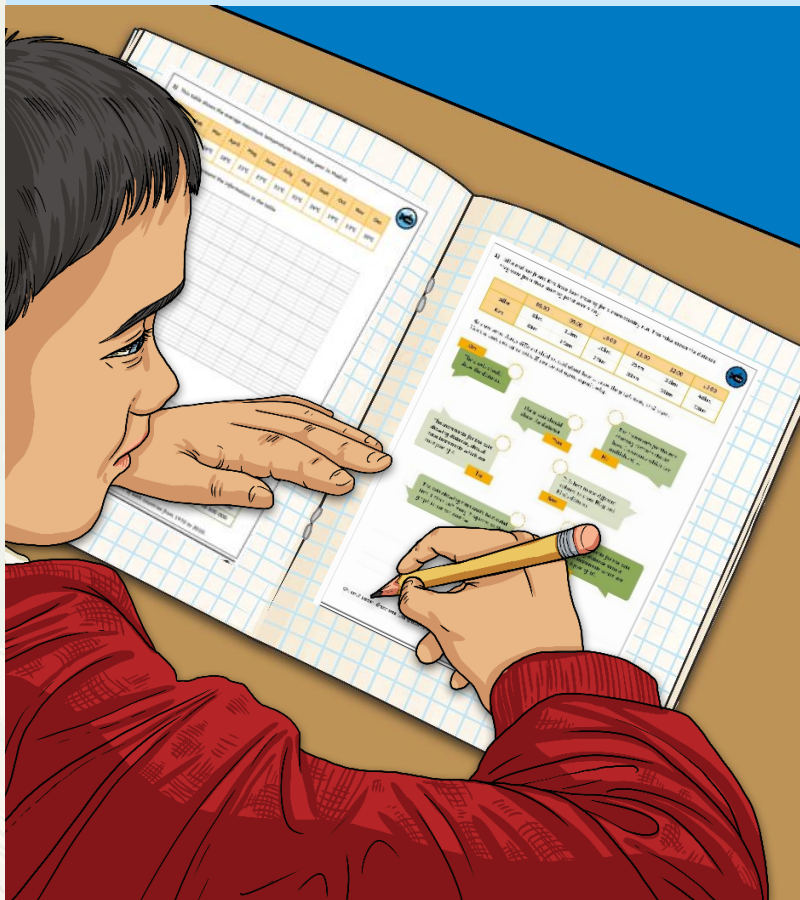
Lottie also draws a line graph but the increments along the x-axis are divided into multiples of 1 hours. (06:00, 07:00, 08:00, etc.)

Whose graph do you think is most accurate and why?

Lottie's graph will be the most accurate as the table shows the distance every hour. Her graph will closely match the data. Patricia's graph will only show every other hour. Between 09:00 and 10:00, no distance was covered and this would not be shown on Patricia's graph.

Draw Line Graphs

Dive in by completing your own activity!



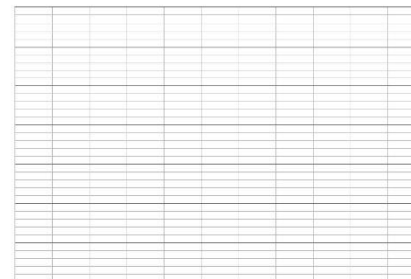
1) A driver

1) Billie and they were

1) This table shows the average maximum temperatures across the year in Madrid.

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
10°C	12°C	16°C	18°C	21°C	27°C	31°C	31°C	26°C	19°C	13°C	10°C

Draw a line graph to represent the information in the table.



Write three questions (with answers) about your graph.

2) This table shows the population of the UK and Spain from 1970 to 2010.

	1970	1980	1990	2000	2010
UK	55 600 000	56 300 000	57 200 000	58 800 000	62 500 000
Spain	33 600 000	37 400 000	38 900 000	40 500 000	46 500 000

On graph paper, draw one line graph to show the population of both countries from 1970 to 2010.

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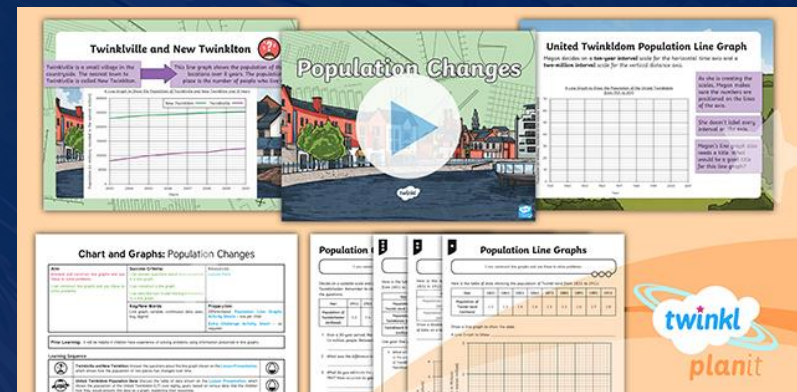
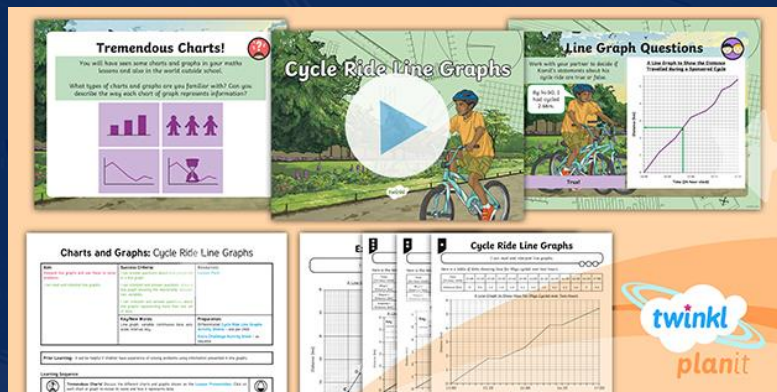


Need Planning to Complement this Resource?

National Curriculum Aim

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

For more planning resources to support this aim, [click here](#).



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