Year 6 maths – Summer 2 Week beginning: 15.6.20

Theme	Graphs and averages (Lesson 6 of 12) Reading Pie Charts	Graphs and averages (Lesson 7 of 12) Reading Pie Charts	Graphs and averages (Lesson 8 of 12) Reading Pie Charts	Graphs and averages (Lesson 9 of 12) Reading Line Graphs	Graphs and averages (Lesson 10 of 12) Reading Line Graphs
Factual fluency (to aid fluency)	Practice reading tables **Activity**	Practice reading pie charts **Activity**	Practice reading pie charts **Activity**	Practice reading line graphs **Activity**	Practice creating line graphs **Activity**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge LINK**	(Lesson 1 resources below) **MAKING LINKS:** Last week, we showed information on graphs. Today we are going to read pie charts. **THINK: (support below)** Can you help me with this problem? We need to complete a table on how many people like a certain pizza topping. All we know is that $\frac{1}{4}$ of the people like tomato as a pizza topping, $\frac{1}{3}$ like ham OR pepperoni and 35 people like mushroom. Our problem is on textbook page 233. Look at it now. **SEE: (model below)** Look for how to solve the problem on pages 233 and 234 of your textbook. **DO:** Use what you have learnt today to solve: Part 1: **questions 1 and 2** from textbook page 235. Check your answers before moving onto: Part 2: Workbook, Chapter 14, Worksheet 6, pages 163-164.	(Lesson 2 resources below) **MAKING LINKS:** Yesterday we read pie charts. Today we are going to continue that. **THINK: (support below)** Can you help me with this problem? My friend tried to show me the amounts of fruit that went into her 250ml smoothie with bar models. If the bar for pineapple is 5cm, how long would the bars be for the other fruits? Our problem is on textbook page 236. Look at it now. **SEE: (model below)** Look for how to solve the problem shown on pages 236-237 of your textbook. There is no need to look at part 3 on page 238-239. **DO:** Use what you have learnt today to solve: Part 1: **questions 1 and 2** from textbook page 240-241 Check your answers before moving onto: Part 2: Workbook, Chapter 14, Worksheet 7, **question 2**, page 166.	(Lesson 3 resources below) **MAKING LINKS:** Yesterday we read pie charts. Today we are going to continue working with pie charts. **THINK: (support below)** Can you help me with this problem? Based on the information in the pie chart on page 242, I need to work out how much money was spent by visitors to Thailand. Can I use the size of some slices to work out the size of others? Our problem is on textbook page 242. Look at it now. **SEE: (model below)** Look at the different ways to solve the problem shown on pages 243 and 244 of your textbook. **DO:** Use what you have learnt today to solve: Part 1: **questions 1** from textbook page 245. Check your answers before moving onto: Part 2: Workbook, Chapter 14, Worksheet 8, **question 2**, page 168 and **question 2**, review 14, page 178.	(Lesson 4 resources below) **MAKING LINKS:** Yesterday we read pie charts. Today we are going to read line graphs. **THINK: (support below)** Can you help me with this problem? My friend has a watch that tracks his fitness. He checked the readings every 10 minutes during his walk and made a table from the results. Can you draw a graph to show his results? Our problem is on textbook page 246. Look at it now. **SEE: (model below)** Look at the different ways to solve the problem shown on pages 246-247 of your textbook. **DO:** Use what you have learnt today to solve: Part 1: **questions 1, 2 and 3** from textbook page 248. Check your answers before moving onto: Part 2: Workbook, Chapter 14, Worksheet 9, pages 169-170.	(Lesson 5 resources below) **MAKING LINKS:** Yesterday we read line graphs. Today we are going to continue with that. **THINK: (support below)** Can you help me with this problem? My friend did an experiment and wrote up her results in a table. She thinks she may have made a mistake in her experiment. Can you show her results in a graph and see if there is an error? Our problem is on textbook page 249. Look at it now. **SEE: (model below)** Look at a ways to solve the problem are shown on page 250 of your textbook. **DO:** Use what you have learnt today to solve: Part 1: **questions 1-4** from textbook page 251. Check your answers before moving onto: Part 2: Workbook, Chapter 14, Worksheet 10, pages 171-172.
Methods, tips, clues & checks	Day 1 resources and answers (below)	Day 2 resources and answers (below)	Day 3 resources and answers (below)	Day 4 resources and answers (below)	Day 5 resources and answers (below)

See below for resources to support you to THINK-SEE-DO

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THINK: Our problem is on <u>textbook</u> page 233.

We need to complete a table on how many people like a certain pizza topping. All we know is that $\frac{1}{4}$ of the people like tomato, $\frac{1}{3}$ like ham OR pepperoni and 35 people like mushroom.

So **35** $+ \frac{1}{4} + \frac{1}{3}$ = the total number of people who chose a topping.

Mushroom	Tomato	Pepperoni & Ham
35 people	? people	? people

Remember:
We don't know how many people there are altogether but we do know that we can divide our pie chart into 12 slices (or sectors) because 12 is the 'common denominator' when we look at quarters and thirds.
If we take off our 3/12 and 4/12 we are left with 5/12.
We know that 5/12 is 35 from the information in our table so we can find 1/12 by dividing 35 by 5.

DO:

Part 1: **questions 1 and 2** from textbook page 235.

Check your answers before moving onto:
Part 2: Workbook, Chapter 14, Worksheet 6, pages 163-164.

SEE:
Look at how we can solve the problem on pages 233 and 234 of your textbook.

What do we know?
- 35 people like mushroom as a pizza topping.
- $\frac{1}{4}$ of the people like tomato. We know this because the 'right-angle' symbol on the tomato section shows us it's a quarter of the pizza.
- $\frac{1}{3}$ like ham OR pepperoni.

So **35** $+ \frac{1}{4} + \frac{1}{3}$ = the total number of people who chose a topping.

We know what fraction of people chose tomato, ham and pepperoni so we could use this to work out what fraction of the people chose mushroom topping.
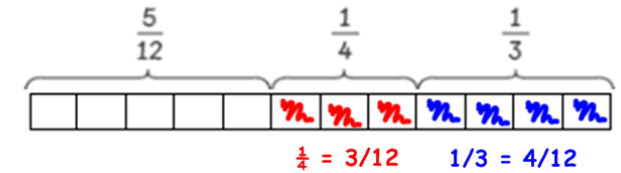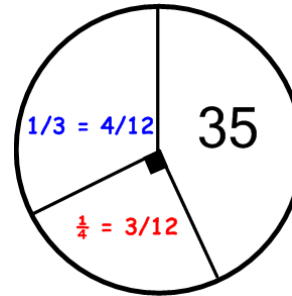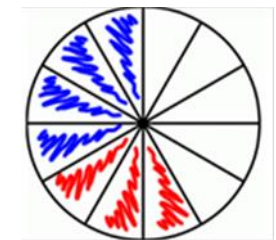

$$\frac{1}{4} = \frac{3}{12} \text{ and } \frac{1}{3} = \frac{4}{12}$$
$$\frac{1}{3} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$
$$1 - \frac{7}{12} = \frac{12}{12} - \frac{7}{12} = \frac{5}{12}$$

35 people who liked mushroom toppings = $\frac{5}{12}$

$\frac{5}{12} = 35$ so $\frac{1}{12}$ = 35 divided by 5 = 7

We can use this to work out tomato $(\frac{3}{12})$ and ham & pepperoni $(\frac{4}{12})$

THINK: Our problem is on underlined textbook page 236.

My friend tried to show me the amounts of fruit that went into her 250ml smoothie with bar models. If the bar for pineapple is 5cm, how long would the bars be for the other fruits? Can you help me to work out the amounts?

Banana	Pineapple	Orange	Lime
20% of 250ml	40% of 250ml	32% of 250ml	?

40% of the smoothie is pineapple = 5cm

DO:

Part 1: **questions 1 and 2** from textbook page 240-241
When completing question 1, remember the geometry rule that opposite angles are equal.

Check your answers before moving onto:

Part 2: **Do not do question 1a or b.** Workbook, Chapter 14, Worksheet 7, **question 2**, pages 166.

SEE: Look at how to solve the problem shown on pages 236-237 of your textbook.

What % of the 250ml smoothie is lime?
250ml = 100%
20% + 40% + 32% = 92%
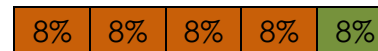100% - 92% = 8%
Lime is 8% of the 250ml smoothie.

We can use what we know to help us work out the length of the bars for each fruit. We know 40% of our smoothie is shown with a 5cm bar. This can help us work out the length of bars for banana, lime and orange.

40% =5cm

20% = ?

8% | 8% | 8% | 8% | 8%

32% = ?   8% = ?

Tips:
Use strips of paper to make each of the bars to represent the value of each ingredient in the smoothie.
The piece of paper for the pineapple will be 5cm long.
The piece of paper for the banana is half that.
The bar for the orange and lime add up to the same value as the pineapple so will be the same size. However this bar needs to be folded into five parts.
Four parts represent the orange and one part represents the lime.

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THINK: Our problem is on <u>textbook</u> page 242.
Based on the information in the pie chart on page 242, I need to work out how much money was spent by visitors to Thailand.

If I knew some of the information in the pie chart would it help me to work out the rest? What slices of the pie chart would help me to work out others?

DO:

Part 1: **question 1** from textbook page 245.
In question 1, the winner is the green slice made up of 5 slices of the pie chart = 3000 votes.
Use this information to find the value of one slice.

Check your answers before moving onto:
Part 2: Workbook, Chapter 14, Worksheet 8, **question 2**, page 168 and **question 2,** Review 14, page 178.

SEE: Look at the different ways to solve the problem shown on pages 243 and 244 of your textbook.
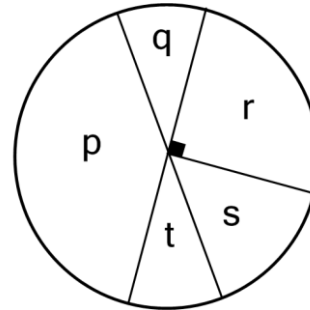
If we know the value of the slice of the pie chart labelled 'q' (food), can we use this information to find the value of 't' (entertainment)?
<u>Remember</u> opposite angles are equal so q and t are the same value.
If we know the value of the slice of the pie chart labelled 'r' (shopping), can we use this information to find the value of 'p' + 't'?
<u>Remember</u> the right-angle symbol shows a quarter of the circle (or pie) 90° so when you know that value you can multiply the amount by 4 (for 4/4) to find the amount in the whole pie!

If we know the value of the slices 'p' + 't' and the value of the slices 'q' + 'r', can we use this information to find the value of 's'?

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THINK: Our problem is on <u>textbook</u> page 246.
My friend has a watch that tracks his fitness. He checked the readings every 10 minutes during his walk and made a table from the results. Draw a graph to show his results.
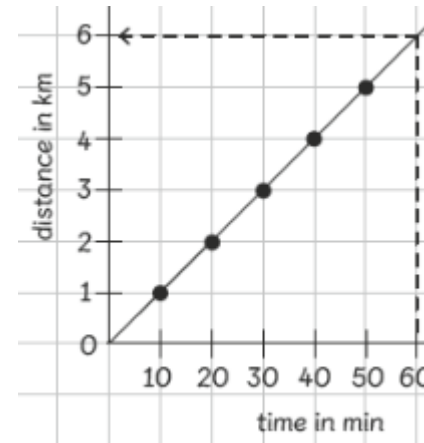
Does he change the speed of his walking during the time he checked his walk?

DO:
<u>Part 1</u>: **questions 1, 2 and 3** from textbook page 248.

Check your answers before moving onto:
<u>Part 2</u>: Workbook, Chapter 14, Worksheet 9, pages 169-170.

SEE:
Look at the different ways to solve the problem shown on pages 246-247 of your textbook.

Tip:
Use a ruler to help you to read the graph.
Put the ruler in the same positions as the dashed lines show on the graph to make for easier reading and easier plotting of results.

How can you tell how long he walked in an hour?
Remember: 60 minutes make one hour.

If my friend had slowed down he would not have been able to walk for the same distance. How would that change the line on the graph? **The line would not go up at the same angle; it might make a flatter line on our graph.**

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THINK: Our problem is on <u>textbook</u> page 249.

My friend did an experiment and wrote up her results in a table. She thinks she may have made a mistake in her experiment. Can you show her results in a graph and see if there is an error?

How does the graph suggest there may be a mistake in the experiment?

DO:
Part 1: **questions 1-4** from textbook page 251.

You can draw on the page for this graph. Remember to use a ruler to help you read from the axis.

Check your answers before moving onto:
Part 2: Workbook, Chapter 14, Worksheet 10, pages 171-172.

SEE:
Ways to solve the problem are shown on page 250 of your textbook.

Can you see a pattern to the changes in the ruler readings each time the weight increases by 20 grams? By how much does the length on the ruler reading change each time?

weights added in g	0	20	40	60	80	100
ruler reading in cm	20.1	20.6	21.1	21.8	22.1	22.6

+ 0.5cm   + 0.5cm   +0.7cm   + 0.3cm   + ?.?cm

weights added, w, in g	0	20	40	60	80	100
ruler reading in cm	20.1	20.6	21.1	21.8	22.1	22.6
extension of the spring, x, in cm	0	0.5	1.0	1.7	2.0	2.5

What should the ruler read at 60g? Remember each change has been 0.5cm.
How long will the extension of the spring be at 60g?

Extend the line on your graph. What will the extension of the spring be at 120g?
Do you need to extend the line or can you tell from how much the spring extends with each 20g weight?

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ANSWERS – part 1:

Day 1	Day 2	Day 3	Day 4	Day 5
Part 1: Q.1: x = 8, y = 4, z = 2. Q.2: 55 people had no siblings and 30 people had 1 sibling.	Part 1: Q.1: a) 13%, b) 37%, c) 30% Q.2: Yes, both graphs show the same information.	Part 1: Q.1: number of votes in each section of the pie chart: Red = 600, green = 3000, blue = 1800, orange = 600 and yellow = 1200 Total number of votes = 7200	Part 1: Q.1: a) 187.5km, b)62.5km Q.2: a) the train stopped twice. b) Stop 1: 30 minutes; Stop 2: 15 minutes Q.3: entire journey is 4 hours and 30 minutes	Part 1: Q.1: £24 Q.2: £27 Q.3: £42 Q.4: 3 hours and 30 minutes.

ANSWERS – part 2 and deepening:

Day 1	Day 2	Day 3	Day 4	Day 5
Part 2: Workbook, Q.1: None = 5 One = 10 Two = 20 Three = 10 More than three = 5 Q.2: Cars = 162, motorcycles = 72, vans = 36, trucks = 18 and others = 8	Part 2: Workbook, Q.2: a) 0 b) 25% c) 60% = 12 schools so 10% = 2 schools and 5% is 1 school	Part 2: Workbook, Q.2: Boys = 1600 Girls =1200 Women =1000 Men = 400 Senior citizens = 600 Review 14, question 2: a)15, b) 6, c) 3, d) 6.	Part 2: Workbook, Q.1: a)12km, b) 36km, c) 72km, d) remained unchanged Q.2: a) 8km, b) 16km, c) 12km, 30mins, d) slower.	Part 2: Workbook, Q.1: a)3, b)15, c)7 mins, d)12 mins Q.2: a) £40, b) £180, c)£200, d) £80

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