

Strip graphs

I am learning to create and interpret strip graphs.

Back in Book 1 (level 1 and 2) we looked at strip graphs. Strip graphs are a good introduction to pie graphs because like pie graphs a strip graph is broken into sections which make up a whole, which in this case is a strip rather than a pie. They are slightly easier to create than pie graphs because we do not need to convert percentages into degrees.

Explain to students that twenty people were asked what their favourite type of T.V show was (they were given a range to choose from as can be seen on the table below). The table below shows how they responded. Draw the table on the board for students to see.

Favourite type of T.V.	Number of people who chose it.
News	4
Action	2
Drama	2
Reality	6
Mystery	2
Cartoons	2
Other	2
Total	20

You can see from the table above that we have twenty responses. Our next step is to present this information as a strip graph. The easiest way to do this is to use grided maths paper. Get students to draw a rectangle which has a width of three squares and a length of 20 squares. Ask students what this represents at the moment. If necessary prompt students to think of it as the whole. The twenty boxes (length) represents the twenty responses. When students fully understand this it is then a small step to understand that "News" (4) should be represented on the strip graph by shading in 4 squares or writing the word "News" so that it covers four squares. After modelling the representation of two more categories on the strip graph encourage students to work with a partner to complete the remainder. They should look something like the graph below.

N	N	N	N	A	A	D	D	R	R	R	R	R	R	M	M	C	C	O	O
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Ask students what we could do if we only had ten squares over which we had to create our strip graph. Now we are moving away from our Book 1 (level 1 and 2) representations towards level 3/4 thinking. Draw the table below on the board for students to see or add a column to your existing table if it is still on the board.

Ask students what the relationship is between the twenty boxes our strip graph was spread over and the ten squares we now want it to be spread over. Students should identify that ten is half of twenty. Ensure students still see the ten boxes as representing the whole i.e. all twenty responses. Discuss how this change makes the strip graph shorter but it wont change the ratios. For example if the twenty box strip graph showed the category "News" as being twice as popular as the category "Action" then on our ten box strip graph it will still show the category "News" as being twice as popular as the category "Action".

Remind students that we have halved the number of boxes in our strip graph then ask students by what fraction we should reduce the category "News". Brainstorm with students why all categories will be reduced by the same fraction.

Favourite type of T.V.	Number of people who chose it.	Amount of squares on a 10 square strip graph.
News	4	2
Action	2	1
Drama	2	1
Reality	6	3
Mystery	2	1
Cartoons	2	1
Other	2	1
Total	20	10

Now get students to draw this strip graph below their original strip graph.

N	N	N	N	A	A	D	D	R	R	R	R	R	R	M	M	C	C	O	O
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N	N	A	D	R	R	R	M	C	O
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Discuss with students how whilst the strip graphs are of different sizes the ratios are still the same.



Draw the diagram on the left for students to see. Ask students to brainstorm why presenting a strip graph like this is very misleading. Especially draw students attention to the categories at the top of the pyramid where the top five all had the same number of responses.