RICH MATHEMATICAL TASK BOOKLET

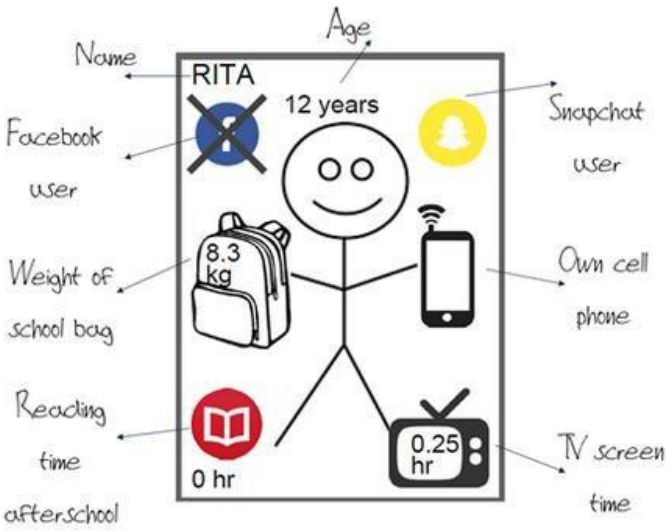
STATISTICS

YEAR 7-8 EVEN YEARS

Task Copy Masters

Task 1

Census at School collects data from students across New Zealand in relation to their leisure activities. This is some of the information they have collected.



Ayla thinks that most 12-year-olds have their own cell phone and use Snapchat and Facebook. Can you make predictions about the age of students with cell phones and using Snapchat and Facebook?

Use the data cards to investigate and sort these into sets.

Use a table of data to show your results.

Now use a graph to record your results to present to the class.

Can you represent this in different ways?

What statements can you make cell phone use and Snapchat and Facebook for students of different ages?

Task 1 (independent)

Census at School collects data from students across New Zealand in relation to their leisure activities. This is some of the information they have collected.

What questions could you ask about this data set?

Record your results in a table.

Can you represent this in different ways using a bar graph or column graph?

Make statements about what you have found out.

Task 2

Census at School collects data from students across New Zealand in relation to their leisure activities. This is some of the information they have collected. Use the data cards to investigate the data below.

How much time do children spend reading after-school?

Use a stem and leaf graph to show your results.

Make “I wonder” and “I notice” statements about the data.

What do you notice about the spread of data? What story is it telling?

Task 2 (independent)

Below are the heights of a group of 11-year-olds in centimetres.

Represent the dataset using a stem and leaf graph.

148 134 145 148 121 151 146 128 134 145 129

142 137 135 165 138 142 145 130 132 136 141

140 146 148

Use the stem and leaf graph to find the range, median, mode, and mean.

What statements can you make about the heights of 11-year-olds?

What other questions could you ask about this data-set?

Task 3

The Warehouse is looking at stocking a new brand of school bags for children. They would like to ensure that the bags will be suitable and durable for students across a range of ages.

Make "I wonder" statements related to this topic.

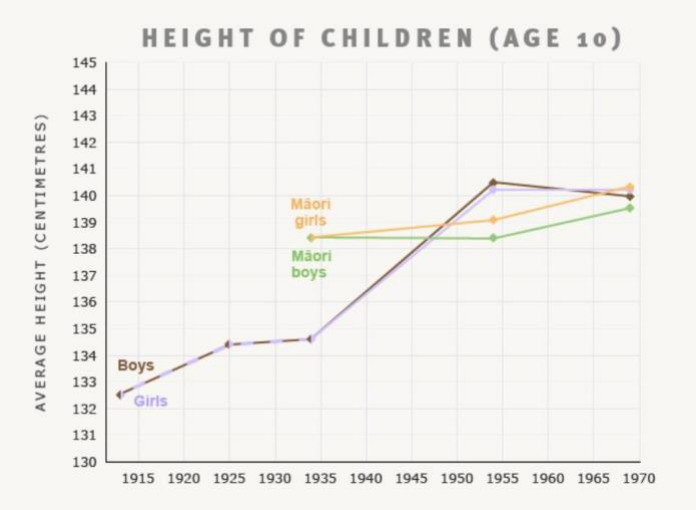
Use the data card sets to help you give advice to the Warehouse.

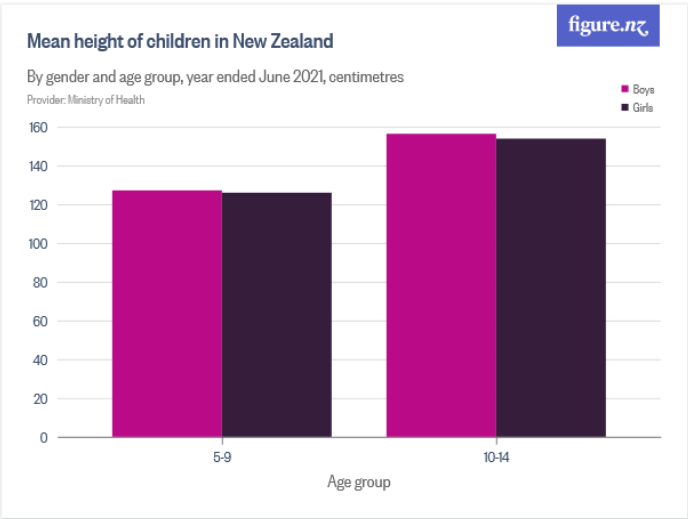
Represent your findings in a table of data and as graphs.

Make statements about your findings using the data and draw conclusions that will provide advice to the Warehouse and the characteristics of the bags that they should stock.

Task 3 (independent)

The graphs below provide information related to the heights of children in New Zealand during different time periods.





Look at the graphs and make "I wonder" statements about the data that is shown.

Then make "I notice" statements about the data.

Make sure that you justify your statements by using data shown on the graphs

Task 4

Census at School collects data from students across New Zealand in relation to their leisure activities. This is some of the information they have collected.

What do you wonder about the data? Make "I wonder…" statements.

What questions could you ask about this data set?

Choose some questions and sort the data cards to answer the question.

Now record your results as a representation.

Make "I notice" statements about the data in relation to your question.

What connections can you make between the different sets of data?

Task 4 (independent)

These data cards have different information about the activities of students of different ages.

What questions could you ask about this data set?

Sort the data cards to answer your question.

Record your results in a table.

Represent your results using at least two different graphs.

Make statements about the data.

Task 5

Making healthy choices is one way to look after your well-being.

Read the questions that you wrote for your survey and re-visit the predictions that you made.

Begin by sorting the data that you have collected and developing recording systems or tables of data to organise the data.

Reflect on the type of data that you have collected and which graphs will be appropriate to represent the data. Select a graph and write a justification of why it would be appropriate to display the data.

Use the following tools to make your graphs:
https://nces.ed.gov/nceskids/createagraph/Default.aspx OR

https://www.geogebra.org/m/BxqJ4Vag

Trial using different graphs to represent the data and reflect upon which tells the story of the data most clearly.

Develop other graphs and representations that will help you answer your overall question. Record your results to present to the class.

What statements can you make about the data?

Task 5 (independent)

Making healthy choices is one way to look after your well-being.

Continue sorting the data that you have collected and developing recording systems or tables of data to organise the data.

Reflect on the type of data that you have collected and which graphs will be appropriate to represent the data. Select a graph and write a justification of why it would be appropriate to display the data.

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Develop other graphs and representations that will help you answer your overall question. Record your results to present to the class.

What statements can you make about the data?

Task 6

Making healthy choices is one way to look after your well-being.

Develop a presentation for the class that includes your investigation question, sampling methods, survey questions and the graphs and data displays that answer your question.

Look at the shape of your data and consider statistical aspects such as the mean, range, mode, and median and what story this tells about the data. Write statements and a conclusion about what you have found out.

Task 6 (independent)

Look at the investigative question, data display, and conclusion that matches this.

Think critically about the conclusion and whether it aligns with the data display. Write an explanation of why you agree or disagree with the conclusion.

Write statements using “I wonder” and “I notice” from the data displays.

Task 7

Is New Zealand a fair country?

Think about different aspects of living in New Zealand that might help us answer whether New Zealand is a fair country?

Develop a series of "I wonder" statements about living in New Zealand. Use these statements to develop a question that you would like to investigate.

What predictions and statements can you make about your chosen question?

Use data sources and data displays that will help you answer your question. This could include resources from the following websites:

Figure NZ (https://figure.nz/)

Stats NZ (https://www.stats.govt.nz/)

Our World in Data (https://ourworldindata.org/)

Reflect on the data sources that you have found and the story that they are telling.

Develop your story and explanation of the data and what it shows. Write a series of statements that you can share with the class and a conclusion to answer your question.

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Our World in Data (https://ourworldindata.org/)

Reflect on the data sources that you have found and the story that they are telling.

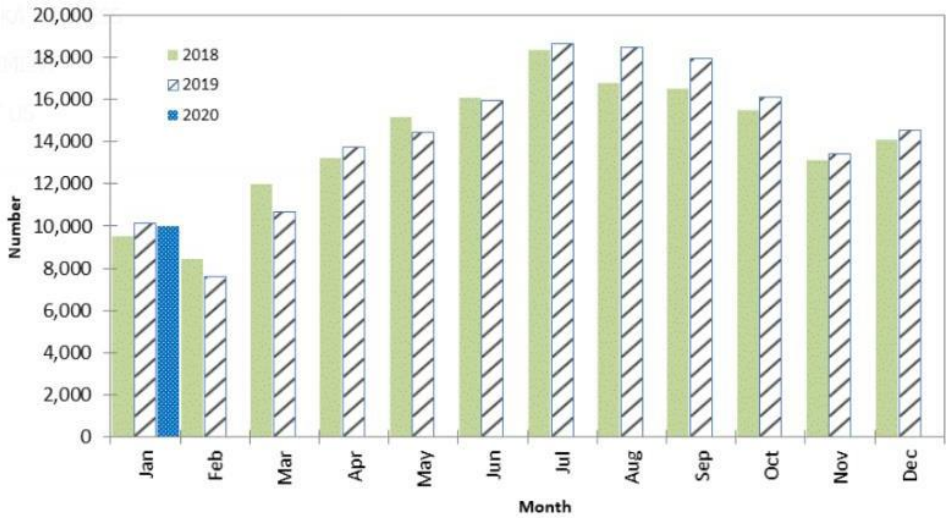
Develop your story and explanation of the data and what it shows. Write a series of statements that you can share with the class and a conclusion to answer your question.

Finish by developing your presentation into a PowerPoint or power presentation to share with the class.

Task 8 (independent)

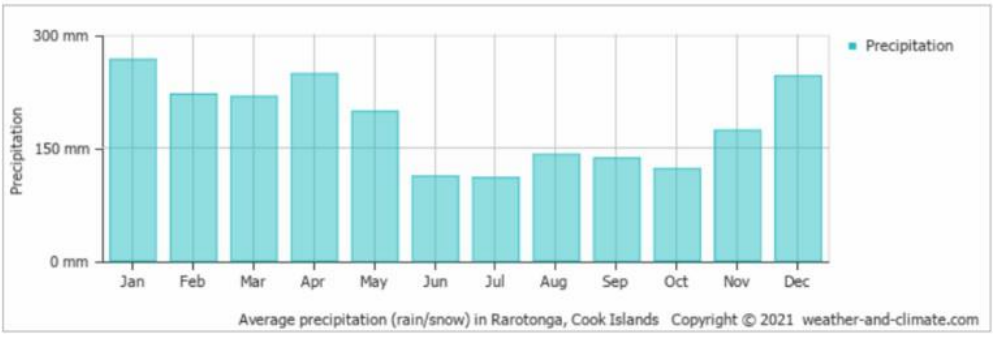
Viliami and his family are considering going to the Cook Islands for a visit. He has found these graphs showing yearly visitor numbers and precipitation.

Tourist visitor arrivals (2018 - 2020)



Monthly precipitation

The mean monthly precipitation over the year, including rain, snow, hail etc.



Can you use the graphs and datasets to give Viliami advice about his decision on the best time to go to the Cook Islands?

What factors do you think he should take into account?

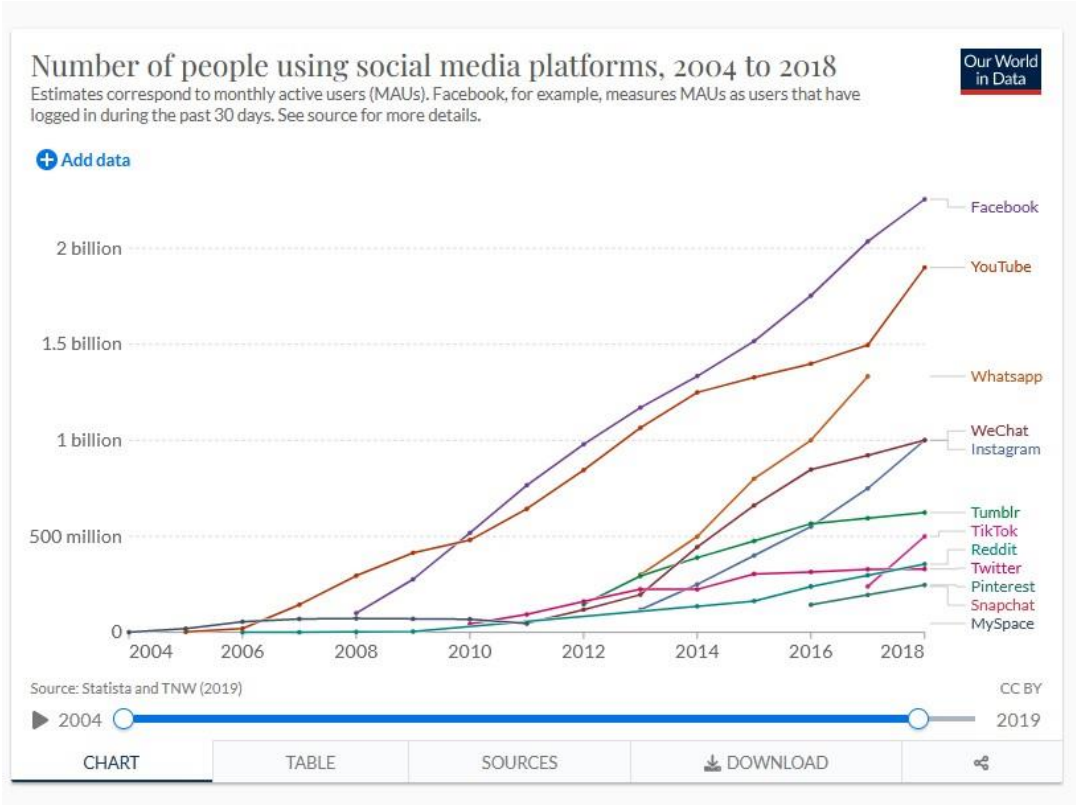
Task 9 (Optional Task)

The use of social media platforms has become popular in recent years. Have a look at the graphs below and think of the stories that they are telling us.

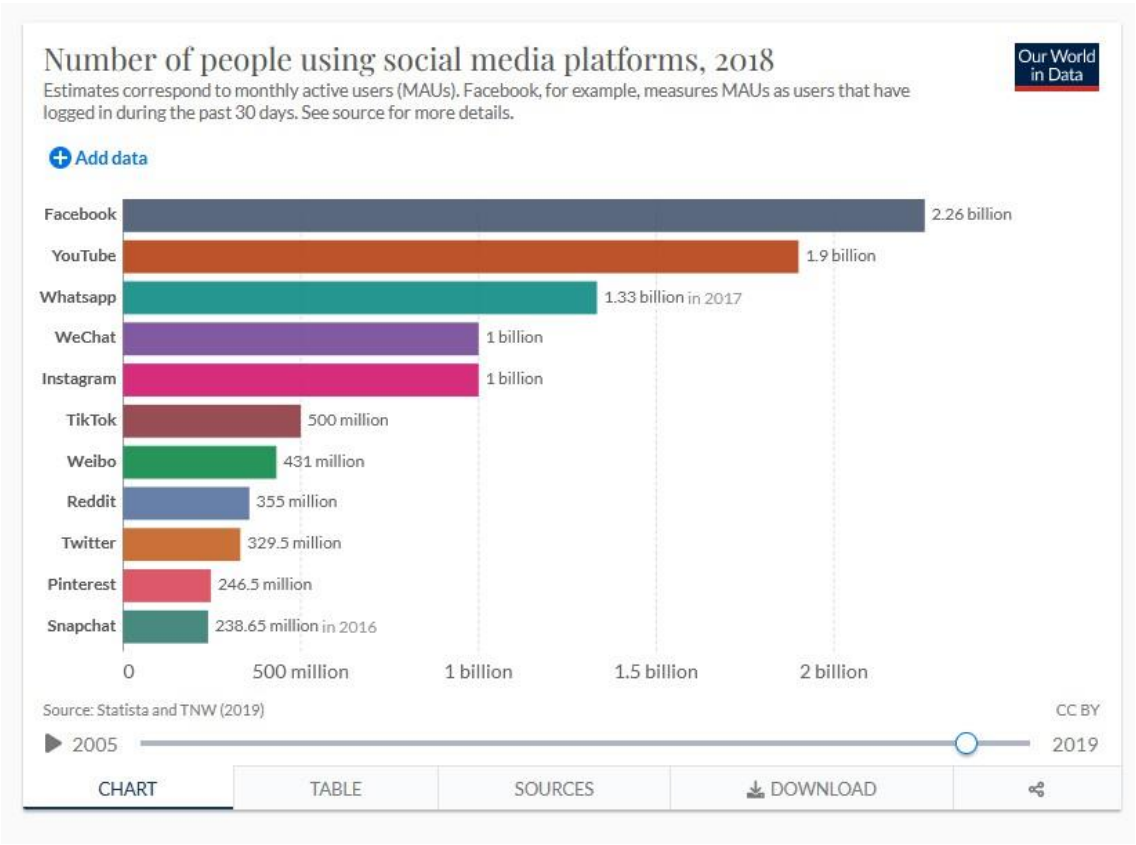
Begin by writing "I wonder" statements for each of the graphs.

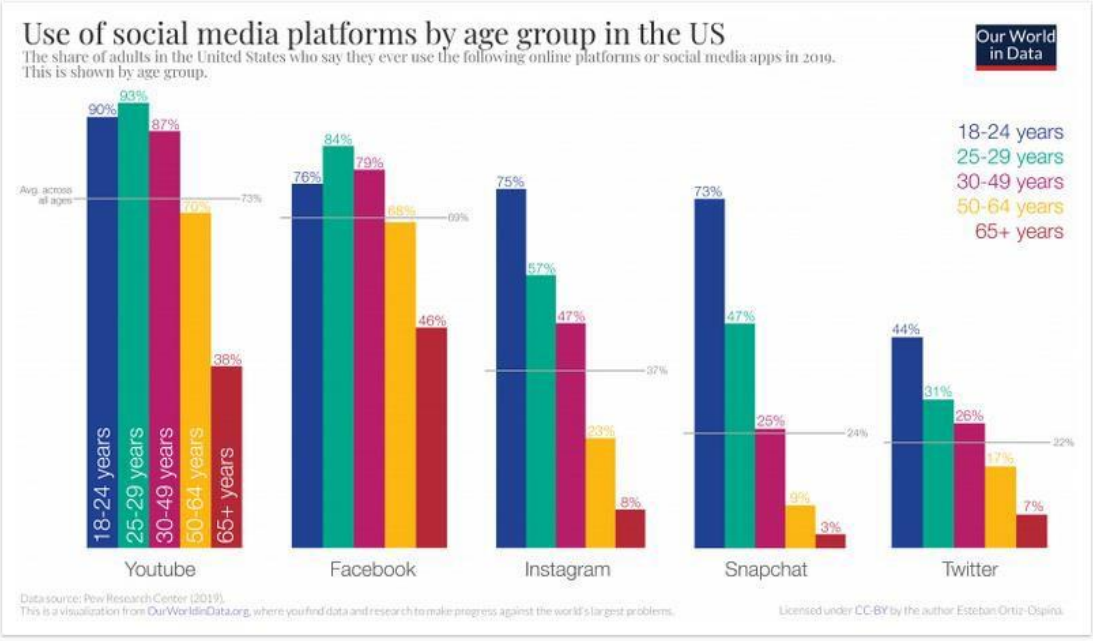
Discuss what you notice in each graph and write "I notice" statements.

What stories and conclusions can you write about the data shown in the graphs?



Level 4/Year 7-8: Statistics





Make predictions about the use of social media platforms in the future.

Task 9 (Optional Independent Task)

The mean is 20. The median is 15. The data-set has 16 numbers. What might the numbers be?

Develop a story about the data-set and the question that it might be answering.

Represent your data-set and write statements about it.

Task 10 (optional task)

Springboks	Stem	All Blacks
7 7	**16**	
9 8 7 6 5 4 4 3 3 2 2 0	**17**	1 2 6 7 7 7 9
9 9 9 9 9 7 6 6 6 5 5 4 4 4 4 4 3 3 2 1 0 0	**18**	2 3 3 3 4 5 6 6 7 7 8 9 9
8 8 8 6 4 3 1 1 0	**19**	0 0 0 0 1 2 2 2 3 4 5 5 6 7 7 7 7 8 8 9 9 9
6 5 3 0 0	**20**	2 4

This stem and leaf graph shows the heights of the players in the Springboks and All Blacks squads. The Springboks heights range from 167cm to 206 cm and the All Blacks heights range from 171 cm to 204 cm.

What statements can you make to compare players' heights shown on this stem and leaf graph? Use mode, median, mean, range and distribution to describe some statements.

Use "I notice" and "I wonder" statements and include evidence and justification from the graph.