COASTMETRO
ELEMENTARY MATH PROJECT

GRADE 6 PRACTICE QUESTIONS

DATA

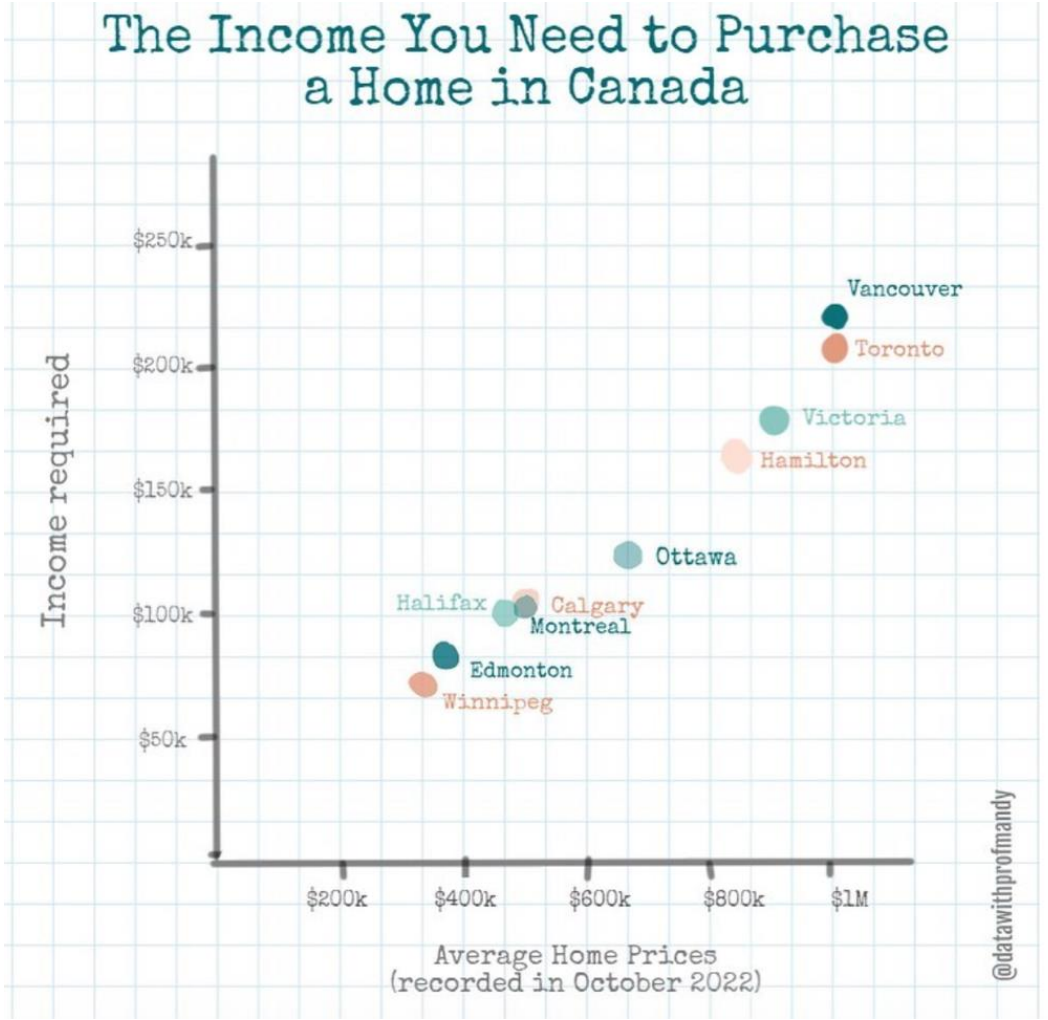
GRADE 6 DATA
CLOSED QUESTIONS

1. Which of these options would be graphed as a line graph?

a. The growth of a pet.
b. How many people like strawberry, chocolate or vanilla ice cream.
c. Average summer temperatures in your town.
d. The lifespan of different species of animals.
e. The speed of a car over the course of a trip.

GRADE 6 DATA
CLOSED QUESTIONS

2. According to the graph:
a. Which city has the most expensive houses?
b. What is the income required to buy a house in Halifax?
c. How much is each line of the graph worth on the Y axis? On the X axis?
d. What would this data look like in table form?



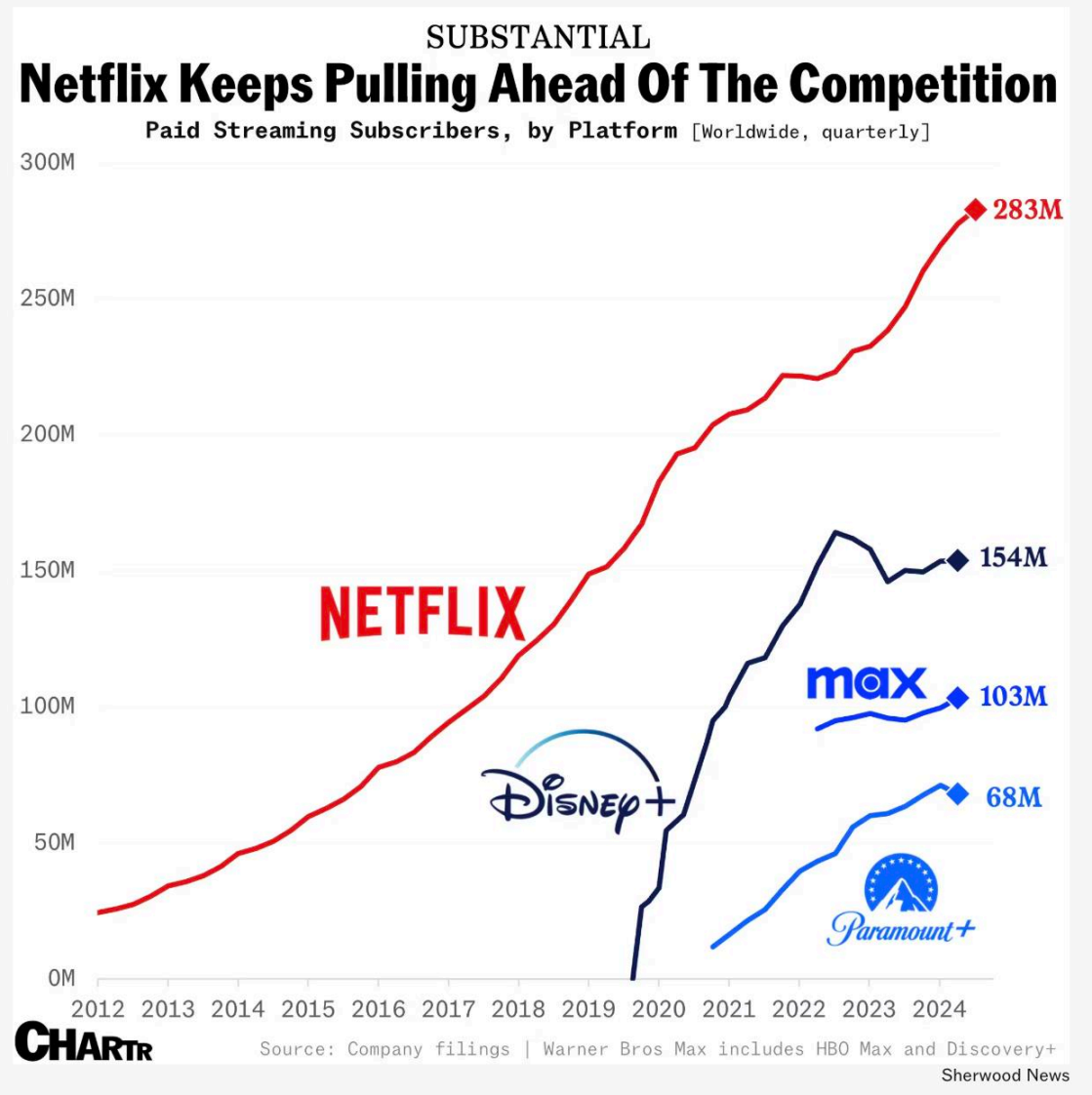
3. Create a line graph using the data in the table.

a. What relationship is this data showing?
b. What happens in week 4?
c. How much money did the person save by the end of the 5 weeks?

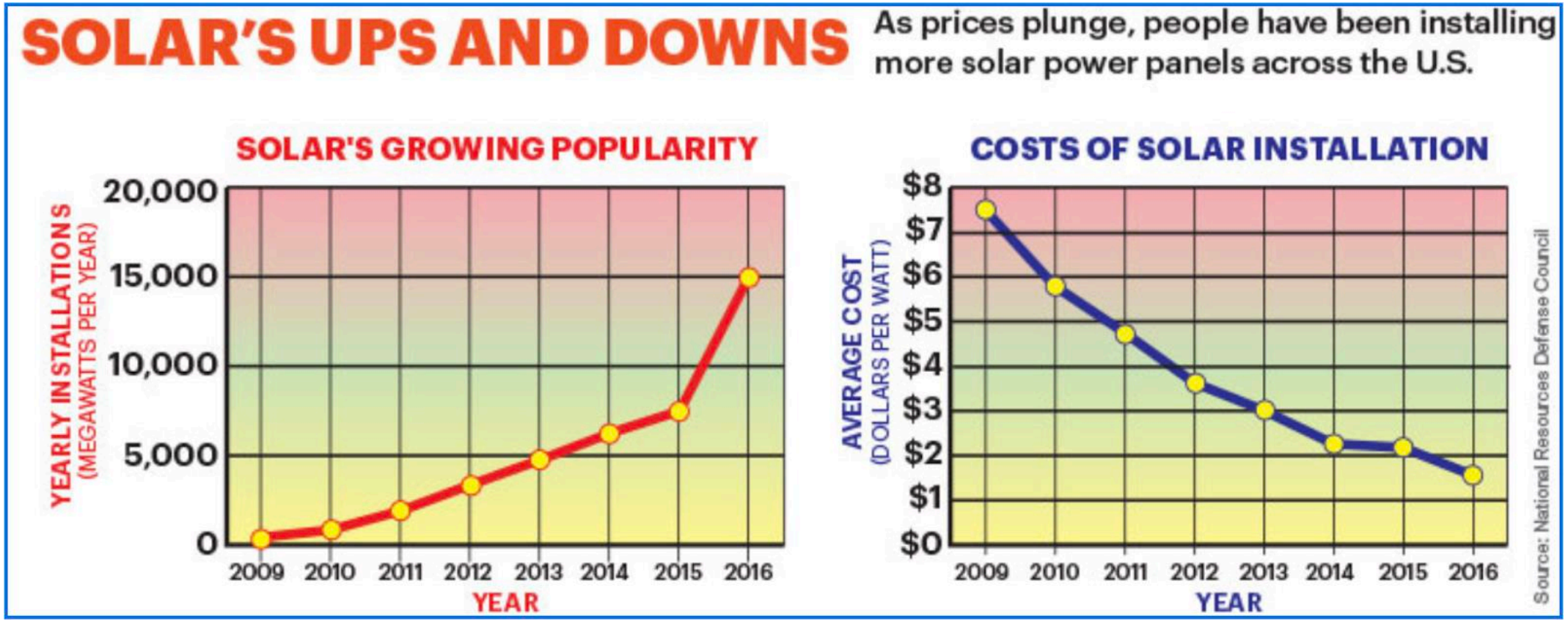
Week	Savings Account Balance
1	$100
2	$200
3	$350
4	$300
5	$400

4. Line graphs are used to measure change over time. Record the temperature outside every hour for 12 hours. You can use a thermometer outside or a cell phone or find the temperature online. Create a line graph with the time of day in one-hour increments on the x-axis and the temperature in degrees Celsius on the y-axis.

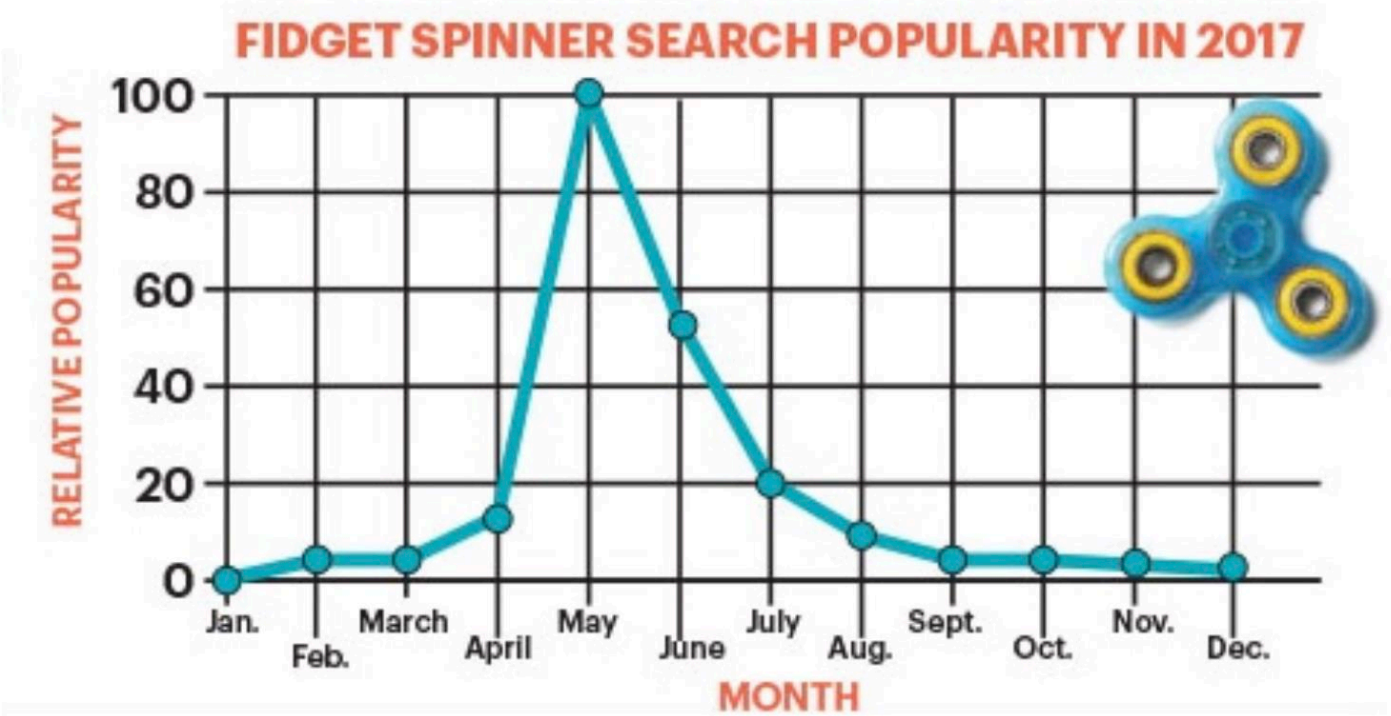
5. Examine the graph:
a. What is being compared in the graph?
b. What does the horizontal axis represent? What does the vertical axis represent?
c. What observations can you make about what is happening in the graph?



6. Look at the graphs below. How are they related? What story do they tell about the use of solar energy?



7. The graph below shows a sharp peak in searches for fidget spinners in the month of May. Redraw the graph using a scale that makes the peak look less extreme.



8. Think of a situation where data could be collected that can be represented as a line graph (change over time). Collect enough data to plot at least 6 points on a graph and create a line graph using the data.

a. Explain how you chose the scale on your graph.

b. What observations can you make from the line graph that were not obvious when you only had the data as numbers?

c. What observations and inferences can you make from your graph?

d. Predict what will happen if you continue to collect data.

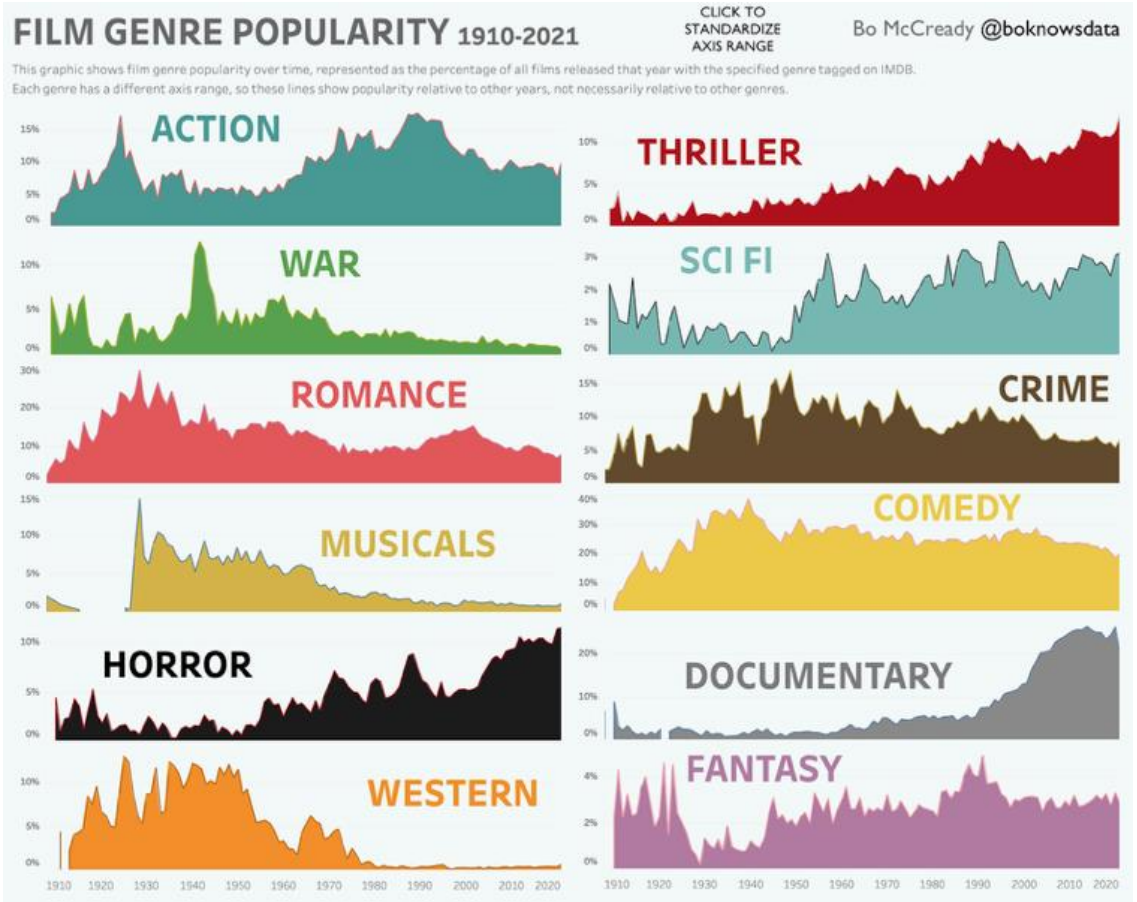
9. Explain the difference between graphing data as a scatter plot versus graphing data as a line graph? Why would you choose one type of graph or another for a particular data set?

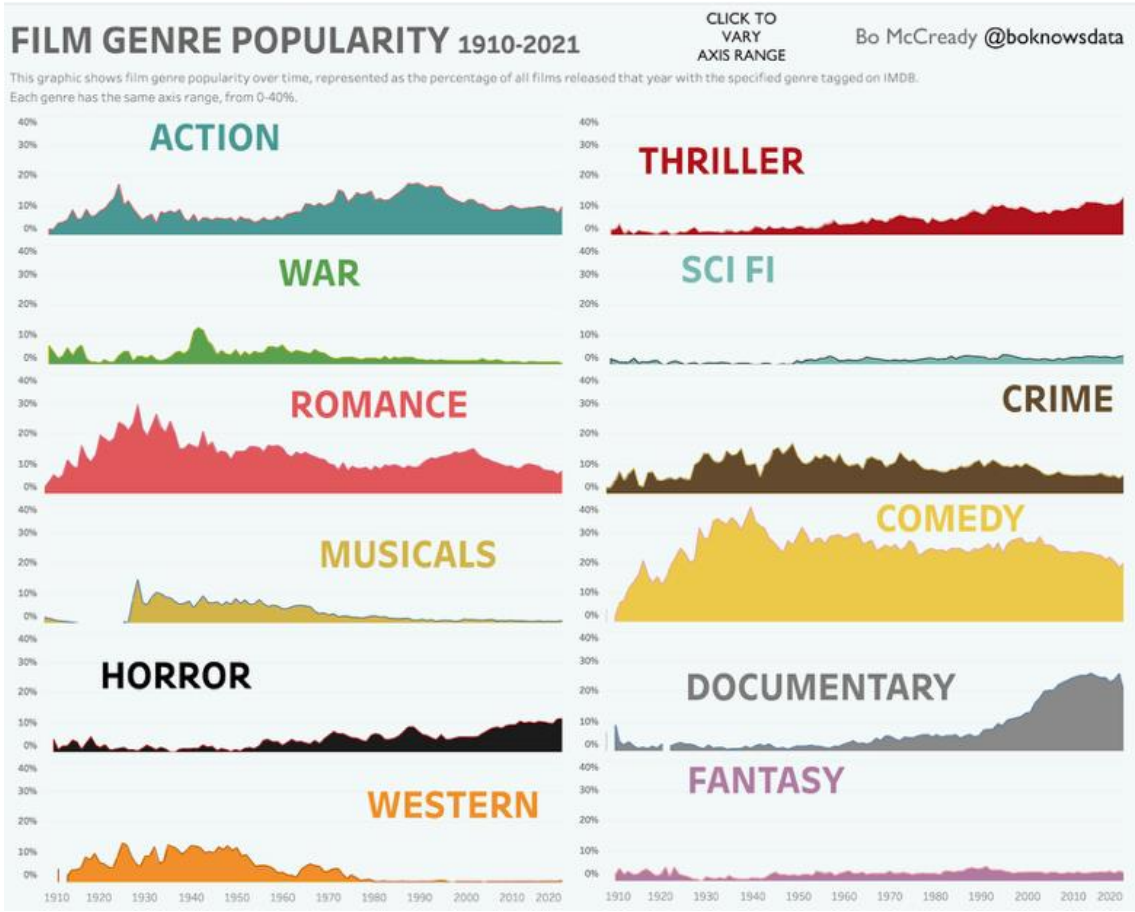
10. The graphs on the next slide show the same data, but the scales are different.

In the first graph, all of the scales are different for each genre.
In the second graph the scales are all the same.

How does changing the scale effect how we read the data in the graph?

10.


FILM GENRE POPULARITY 1910-2021
CLICK TO STANDARDIZE AXIS RANGE
Bo McCready @boknowsdata
This graphic shows film genre popularity over time, represented as the percentage of all films released that year with the specified genre tagged on IMDB.
Each genre has a different axis range, so these lines show popularity relative to other years, not necessarily relative to other genres.
ACTION
THRILLER
WAR
SCI FI
ROMANCE
CRIME
MUSICALS
COMEDY
HORROR
DOCUMENTARY
WESTERN
FANTASY
1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020


FILM GENRE POPULARITY 1910-2021
CLICK TO VARY AXIS RANGE
Bo McCready @boknowsdata
This graphic shows film genre popularity over time, represented as the percentage of all films released that year with the specified genre tagged on IMDB.
Each genre has the same axis range, from 0-40%.
ACTION
THRILLER
WAR
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1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

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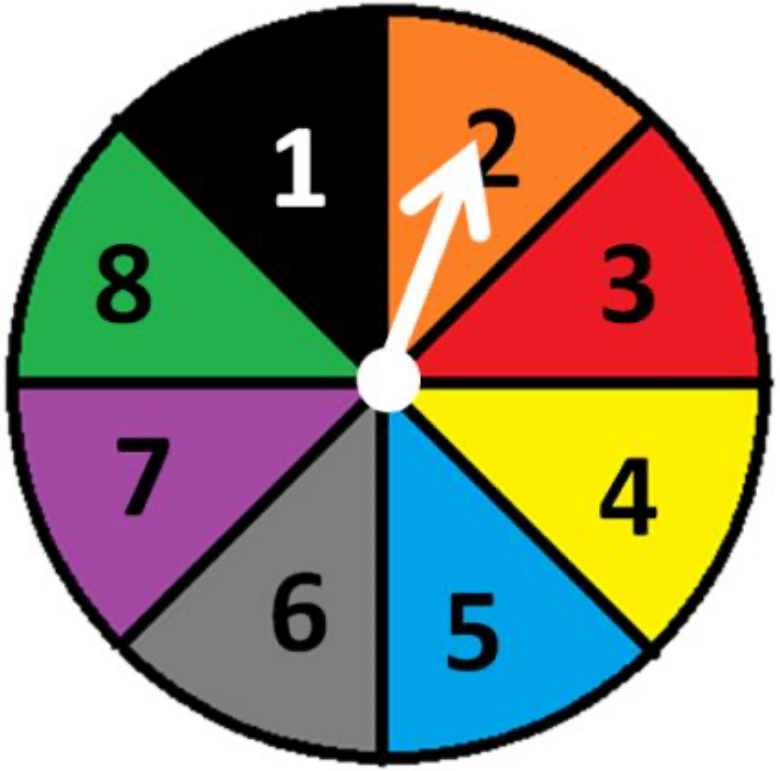
GRADE 6 PRACTICE QUESTIONS

PROBABILITY

GRADE 6 PROBABILITY
CLOSED QUESTIONS

1. Look at this spinner.



a. What is the probability of spinning a 3?
b. Represent the probability as a fraction.
c. What is the probability of spinning an odd number?
d. Represent the probability as a fraction, percentage and a decimal number.

GRADE 6 PROBABILITY
CLOSED QUESTIONS

2. The theoretical probability of an outcome is 2/4.

a. What does the 2 mean?

b. What does the 4 mean?

GRADE 6 PROBABILITY
CLOSED QUESTIONS

3. What is the theoretical probability of rolling a 6 on a standard six-sided die?
Roll a die 30 times and record the results.
What was your experimental probability for rolling a 6?

GRADE 6 PROBABILITY
CLOSED QUESTIONS

4. List the theoretical probabilities for each of the numbers below being drawn from the cards in this set.

a. 10

b. 6

c. 5

d. 10 or 6

GRADE 6 PROBABILITY
CLOSED QUESTIONS

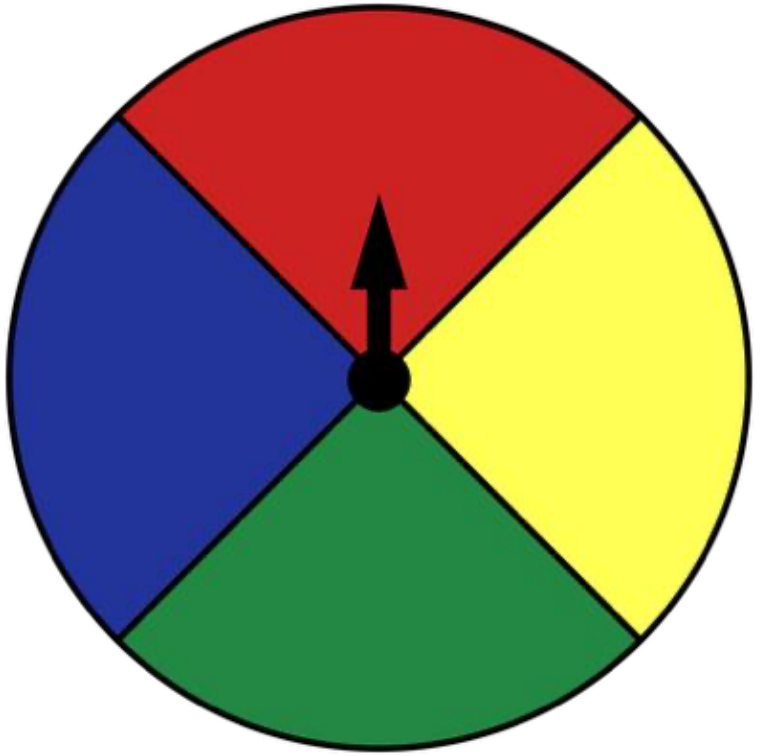
5. Anisha calculated that if she rolled a 6-sided cube 36 times she would get a one 12/36 times, a two 6/36 times, and a three 18/36 times. How many of each number are on the cube?

GRADE 6 PROBABILITY
CLOSED QUESTIONS

6. There are 20 buttons in a jar. 3 are red, 7 are blue, 5 are white, 2 are white and 3 are brown. What is the probability that you will draw a white button on your first try?

GRADE 6 PROBABILITY
OPEN QUESTIONS

7. What kinds of questions could you ask about probability using this spinner?



GRADE 6 PROBABILITY
OPEN QUESTIONS

8. Explain the difference between theoretical and experimental probability. Why are they not always the same?

GRADE 6 PROBABILITY

OPEN QUESTIONS

9. Is Rock, Paper, Scissors a fair game? How can calculating the theoretical probabilities help you determine if the game is fair? Play 10 rounds with a partner. What factors effected the experimental probabilities? How do the experimental and theoretical probabilities relate to each other?

10. Invent a game where you can win or lose. Calculate the theoretical probability that you will win. Play the game with a small group or partner. How does the experimental probability compare to the theoretical. What would happen to that relationship if you played the game one hundred times?