

Mastering 3rd Grade Math Curriculum Map

These no prep math worksheets, cover the five math curriculum. Each topic contains individual skills and concepts that match the learning expectations of the curriculum. Mastering Math is an excellent framework for reviewing the math curriculum at home for students who need extra practise.

Organized according to these five general curriculum threads:

1. Number Sense and Numeration (about numbers, counting and basic arithmetic operations)
2. Measurement (of distances, time, temperature, area and volume, using standard SI units)
3. Geometry and Spatial Sense (understanding and using shapes, figures, symmetry and translations)
4. Patterning and Algebra (patterns, problem solving and translating between words and equations)
5. Data Management and Probability (collecting, organizing and displaying information and drawing conclusions from it)

There are two versions of worksheets for each topic. We have included a Canadian version for each topic. There are also some google slides to go along with the Canadian worksheets.

Teacher Notes Include:

- At A Glance – List of Skills
- Table of Contents
- Teacher Assessment Rubric
- Meeting Common Core Standards List – US Version

NUMERATION WORKSHEETS

Numeration Worksheet Topics:

1. Represent Numbers
2. Place Values
3. Base Ten
4. Compose Numbers
5. Decompose Numbers
6. Compare Numbers
7. Number Words
8. Problems of Magnitude
9. Coins and Bills
10. Money Values
11. Addition
12. Addition With 3 Digits
13. Addition With Money
14. Subtraction
15. Subtraction With 3 Digits
16. Subtraction With Money
17. Round to the Nearest Ten
18. Reasonable Answers
19. Count by 1's to 1000
20. Skip-Count Forward
21. Skip-Count Backwards
22. Meaning of Multiplication
23. Multiplication Facts
24. Multiplication to Seven Times Seven
25. Meaning of Division
26. Division Facts
27. Divide Whole Objects
28. Divide Sets of Objects

Numeration Common Core Standards Met:

- 3.OA.A.1 Interpret products of whole numbers as the total number of objects in a group.
- 3.OA.A.2 Interpret whole-number quotients of whole numbers as the number of objects in each shape.
- 3. NBT.A.1 Use place value to round whole numbers to nearest 10 or 100.
- 3. NBT. A.2 Fluently add and subtract within 1000.
- 3. NF.A.1 Understand a fraction as one out of a number of equal parts ($\frac{1}{b}$).
- 3. MD. A.1 Tell and write time to the nearest minute. Measure time intervals in minutes. Add and subtract time intervals.

MEASUREMENT WORKSHEETS

- **Metric Measurement Google Slides**
- **Metric Measurement Version Included**

Measurement Worksheet Topics:

1. Estimate, Measure and Record Lengths
2. Draw Items from Measurements
3. Compare and Select Standard Units of Length
4. Compare Objects by Length
5. Estimate and Measure Perimeters
6. Estimate and Measure Areas
7. Compare and Order Shapes by Area
8. Size and Number of Units of Area
9. Personal Benchmarks for Mass and Capacity
10. Estimate and Measure Mass
11. Estimate and Measure Capacity
12. Compare and Order Objects by Mass or Capacity
13. Tell Time
14. Write Time
15. Clock Time Problems
16. Calendar Time Problems
17. Temperature Benchmarks
18. Temperatures in Fahrenheit (Celsius)
19. Compare Concrete Angles
20. Right Angles

Measurement Common Core Standards Met:

- 3. MD. A.1 Tell and write time to the nearest minute. Measure time intervals in minutes. Add and subtract time intervals.
- 3. MD. A.2 Measure and estimate liquid volumes, masses of objects and temperatures using standard units.
- 3. MD. B.4 Generate measurement data by measuring lengths using ruler marked with $\frac{1}{2}$ and $\frac{1}{4}$ of an inch.
- 3. MD. C.6 Measure areas by counting unit squares.
- 3. MD. D.8 Find the perimeter of polygons; apply to real life models.
- 3. G.A.1 Understand that shapes may share attributes.

GEOMETRY WORKSHEETS

Geometry Worksheet Topics:

1. Identify Polygons
2. Sort Polygons by Geometric Properties
3. Compare Prisms and Pyramids
4. Name Prisms and Pyramids by Their Bases
5. Identify Shapes in a Figure
6. Construct Rectangular Prisms
7. Types of Quadrilaterals
8. Identify Congruent Shapes
9. Identify Flips, Slides, and Turns
10. Composition Problems
11. Describe Movement on a Grid
12. Describe Designs with Symmetry
13. Complete a Symmetrical Drawing

Geometry Common Core Standards Met

- 2. G.A. 1 Recognize and draw shapes with specific attributes,. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- 3. G.A.1 Understand that shapes may share attributes.
- 3. G.A.2 Divide shapes into parts with equal areas. Express the area of each part as a fraction.

PATTERNING WORKSHEETS

- **Patterning Google Slides**

Patterning Worksheet Topics:

1. Repeating Patterns
2. Number Patterns
3. Extend Number Patterns
4. Patterns from a Rule
5. Represent Geometric Patterns
6. What Makes a Pattern?
7. Inverse Relationship of Addition and Subtraction
8. Missing Numbers in Equations
9. Associative Property of Addition
10. Multiplication With Zero
11. Multiplication With One

Patterning Common Core Standards Met:

- 3. OA.A.4 Determine the unknown whole number in a multiplication or division equation,
- 3. NBT.A.2 Count within 1000; skip-count by 5's, 10's, 100's.
- 3. NBT.B.5 Fluently add and subtract within 100.
- 3. MD. B.3 Generate data. Create graphs (eg. Picture, bar, line) to represent data.

DATA MANAGEMENT WORKSHEETS

- **Data Management Google Slides**

Data Management Worksheet Topics:

1. Sort Objects
2. Collect Data with a Survey
3. Display Data – Pictograph
4. Display Data – Vertical Bar Graph
5. Display Data – Horizontal Bar Graph
6. Read Primary Data
7. Describe and Interpret Data Mode
8. Predict the Frequency of an Outcome
9. Perform Experiments
10. Compare Results
11. Mathematical Fairness

Data Management Common Core Standards Met

- 2. MD.D.9 Generate measurement data and show data: e.g. on a line plot
- 3. MD. B.3 Generate data. Create graphs (eg. Picture, bar, line) to represent data.

HOW TO USE THIS RESOURCE

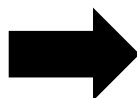
This product is a Google Slides presentation with interactive text boxes that students can fill out digitally! If you don't already have a free Google account, you will need to do that before downloading this digital resource. Each student will also need their own account to work on the slides digitally.

You will...

- **Save a copy** of the file on your own Google Drive so you can edit the copy. When you download the file, the original file is set to "View Only." **You must make a copy to edit & share with your students.** (When you open the file, it will send you to a link where you can select '**make a copy**' and then add the file to your google drive.)
- When you're ready for your students to complete the assignment, you will share your downloaded copy with your students. Make sure that when you share the file, **you only allow viewing capability (not editing or commenting).**
- If you want to only share one slide at a time, open your saved copy of the file, select the slide you want to share, right-click on the slide in the view panel on the left side, select copy. Then open a new empty Google Slides presentation and paste the copied slide into the new file. If your students need more than one slide for their writing assignment, direct them to duplicate the slide.

Students will...

- When your students begin working on the assignment, instruct your students to **make a copy of the file.** This is the copy that they will edit. I would recommend having a common filename that each student should use with their name or student ID.
- When they complete the assignment, they will need to then share their new copy with you so that you will have access to their writing. If you're familiar with Google Classroom, they can simply submit the file there.
- **Product Link:**
- Click on the icon to view your purchased product. When you open the file, please **don't "request access"** to this file. You DO need to save a copy of the file to your own google drive so you can edit it and share with your students.



**Editable
Version**

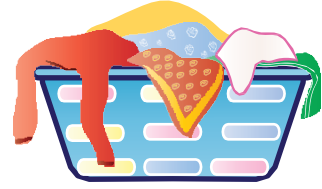
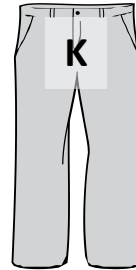
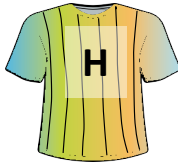
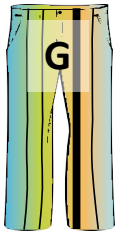
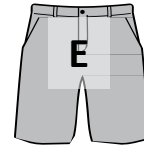
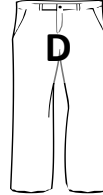
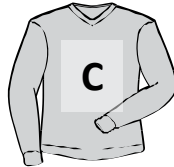
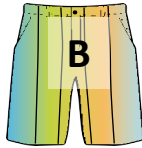
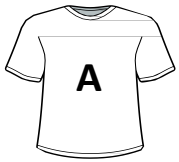


**Digital
Ready**

Sort Objects

Data Management

Alex needs help sorting out summer clothes to put away. Put the shorts in the pile on the left, the white shirts in the middle pile, and the long pants that are not white in the pile on the right.



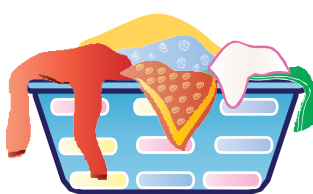
Which items did Alex not put into a basket?
Drag a circle around the things that didn't get put away.

Practise: Sort buttons by size, colour, and number of holes, or a collection of toys by size, colour, and type.

Sort Objects

Data Management

Alex needs help sorting out summer clothes to put away. Put the shorts in the pile on the left, the white shirts in the middle pile, and the long pants that are not white in the pile on the right.



Which items did Alex not put into a basket?

Drag a circle around the things that didn't get put away.

Practise: Sort buttons by size, colour, and number of holes, or a collection of toys by size, colour, and type.

Collect Data With a Survey

Let's collect information about a topic that interests you. It should be something with about five or six answers, like a favourite kind of fruit given several choices, or something that will have a number for the answer, like how many pets people have. Think about your question carefully, then write it here:

Question:

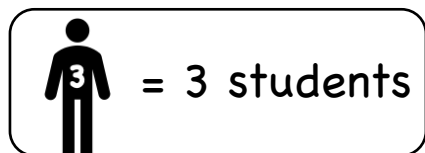
Try to get at least 10 answers to your question. Complete the tally chart for your answers in the table below. Use the lowercase 'l' to represent one tally mark.

Choices	Tally 
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Practise: Now do another survey of the other sort. That is, if you had options for the answer, use something that gives a number in reply instead, and if you asked for a number, this time have people choose an option! Write the question here.

Display Data With Pictographs

In Ms. Sharp's class, 15 students have brown hair, 6 have blonde hair, 9 have black hair, and 3 have red hair. Use the space below to make a pictograph of the hair colours of Ms. Sharp's students. Use the symbols below to represent every 3 students:



Red



Brown



Black



Blonde

Hair Color	Boys
Brown	
Blonde	
Black	
Red	

What picture would you draw to represent favorite colors to wear?

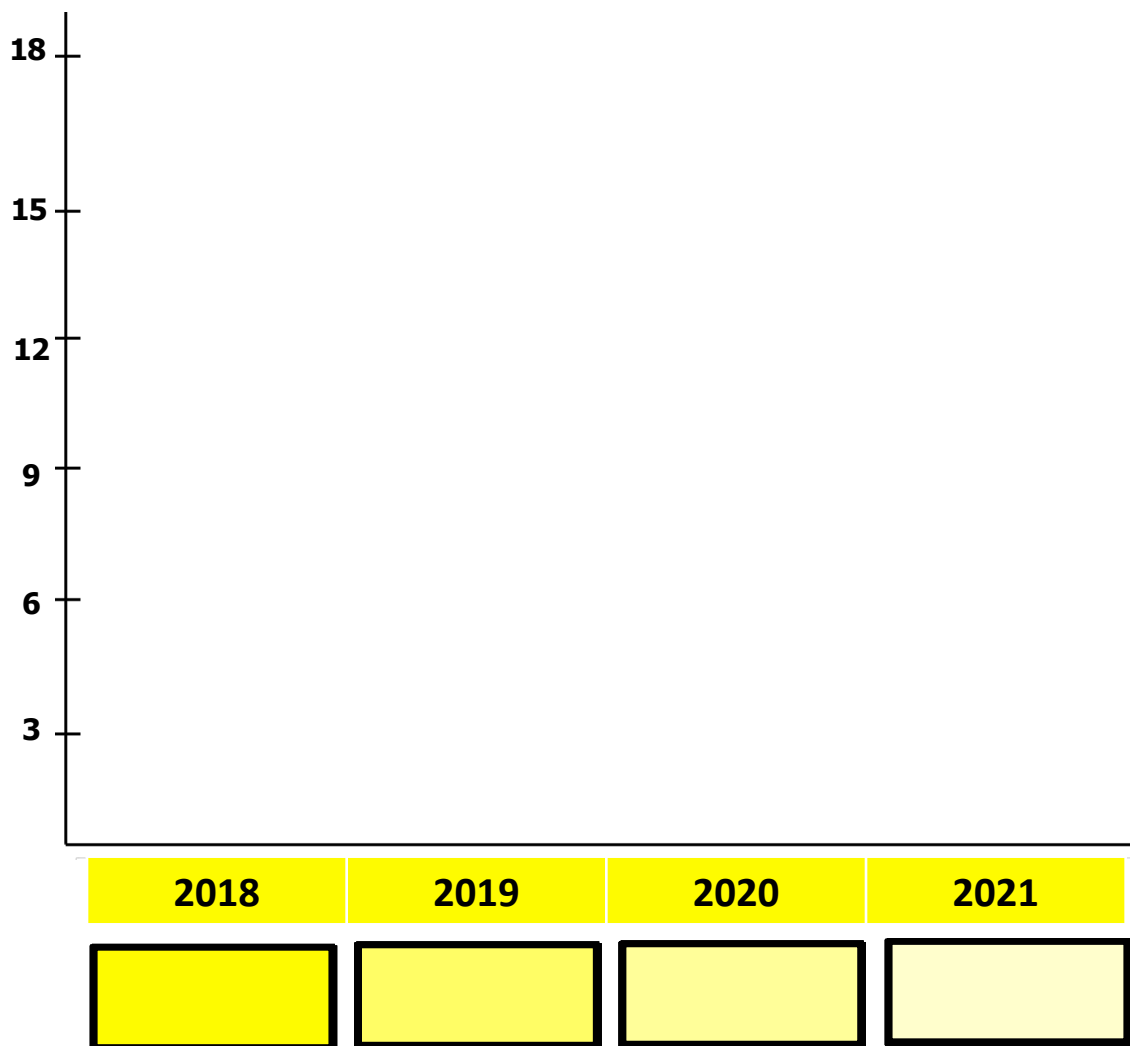
Display Data: Vertical Bar Graphs

A **vertical bar graph** is one where the bars stand up from the base line of the graph. The bars are vertical, which means they go up and down.

The Mighty Sharks soccer team had the following number of wins after each of the last four seasons:

- 17 (three years ago)
- 14, 6, 13 (this year)

Use the outline below to make a graph showing their season totals. Write in this year for the last column, and the three years before this for the previous years.



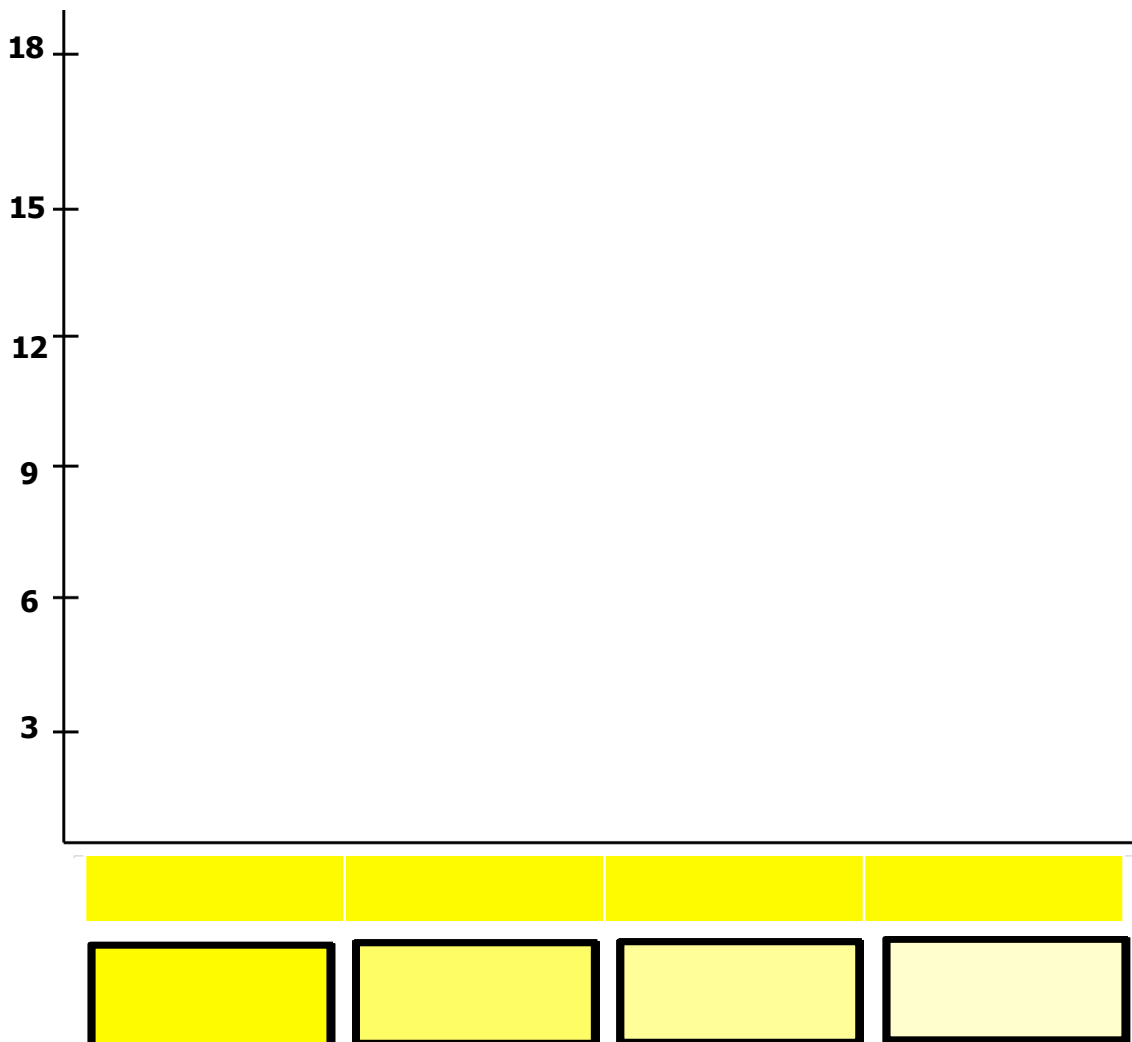
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Display Data: Horizontal Bar Graphs

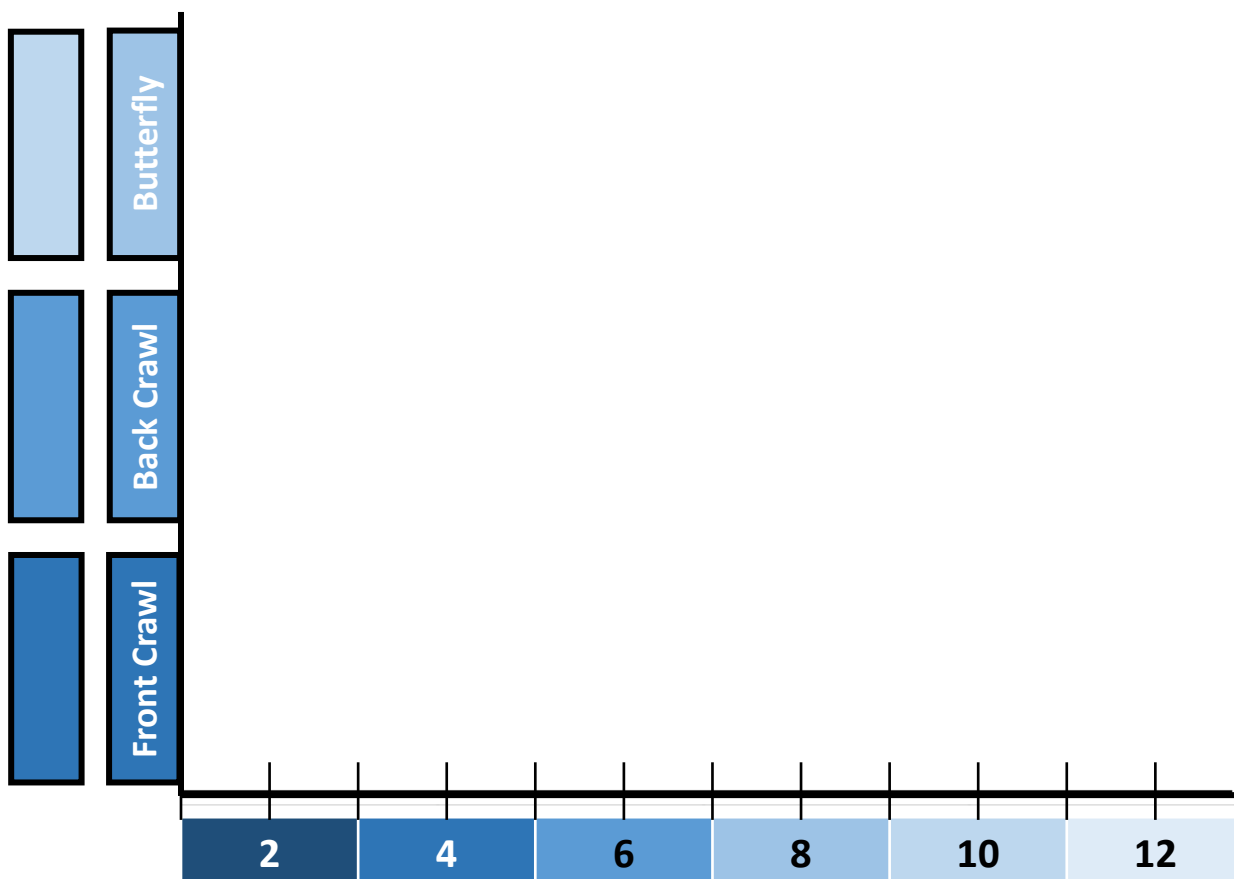
A **horizontal bar graph** is one where the bars are horizontal. The bars run from side to side (like the line of the horizon). The Greenstown Jellyfish have the following numbers of swimmers for each type of event:

1. Front Crawl: 12
2. Back Crawl: 9
3. Butterfly: 4

Use the data about the number of swimmers to make a horizontal bar graph below. Drag the correct number of shapes above each number.

How is this graph the same as a vertical bar graph?

How is it different?



Read Primary Data

Primary Data is data that you have collected yourself. For this exercise, we will use the data you collected in the survey you did. Let's start with making a table to display it:

Fill out the table below to display your results in this space:

option							
number							

Use this data to make a bar graph, a line plot or pictograph. Decide the best way to display the results (or pick your favourite) and draw the graph on a separate sheet of paper. Use your graph to help you answer these questions:

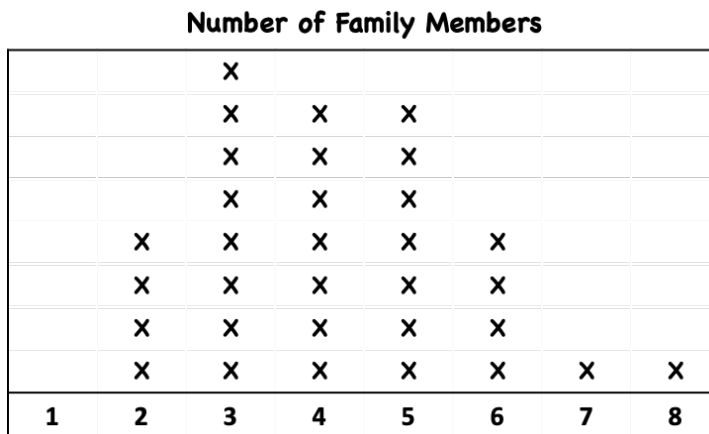
1. What information does the graph tell you about?
2. How many people answered the survey?
3. What is the most common result?
4. Why do you think so many people picked that?
5. Is there a single result that is clearly a favourite?
6. If the results are close in value, what might this mean?
7. What is the least common result?
8. Is your answer common or not?
9. Are the results close in value or is there a big difference in values?
10. What shape does the data in the graph make?
11. Is there a pattern to the values of the results?
12. What does the graph not tell us about?

Practise: Do the same thing for the results you got on another survey, and talk about your graphs, results, and these questions with your classmates!

Describe & Interpret Data

In order to use the data we collect, or that someone else has collected, we also need to look at the big picture of the data. Graphs help us see that picture by drawing it on the page instead of just showing numbers.

Ms. Wiseman's students counted the number of family members living in each student's house and made this graph of the results:



- a) What kind of graph is this?
- b) Are there a lot of low values?
- c) High values?
- d) Where are most of the results located?
- e) What is the most common result?
- f) What is the general shape of the data?
- g) Do you think it's likely that there could be higher result values if more people were included in the survey? (Have you heard of any examples?)
- h) There are some 0's on the graph; is this right? Why
- i) What else can you conclude from this data?
- j) What does the graph **not** tell you?

Mode

Mode is the name we give to the most common value of a set of data, or the value that occurs most often.

1. The Mighty Beavers had the following series of scores in a soccer tournament:

6, 4, 2, 4, 3, 4, 5, 3, 2, 4, 1

- Use this space to write the numbers in order from smallest to biggest.
- Count how many times each number shows up and record below.
- The mode for the Beavers' scores is:

2. Here are the scores for the Thunder Hawks during the same tournament

2, 1, 2, 6, 3, 5, 3, 6, 4, 4, 2

- What is the mode of the Hawks' scores?
- Which mode is higher? The Beavers' or the Hawks'?

3. Here is a list of the number of questions Pat did for homework over 10 days:

7, 13, 6, 6, 16, 6, 6, 8, 26, 4

- What is the mode of these values? Use the space to figure it out.

Mode

Mode can be applied to values that aren't numbers, too!

1. Here is a list of weather conditions for ten days in the spring. What's the mode of this data?

sunny, rainy, sunny, sunny, rainy, cloudy, rainy, sunny, sunny, sunny

2. Here's a list of weather conditions on ten days in the fall. What's the mode of this data?

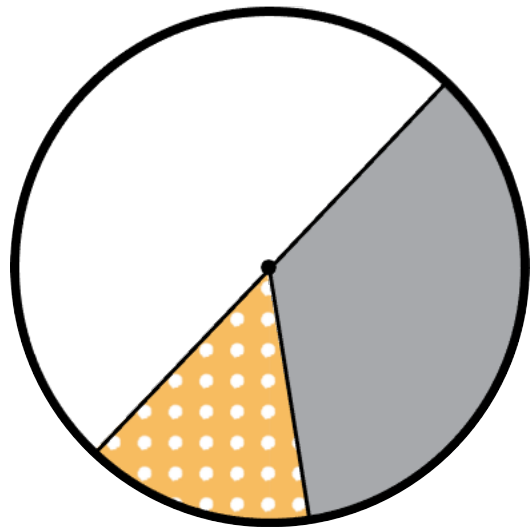
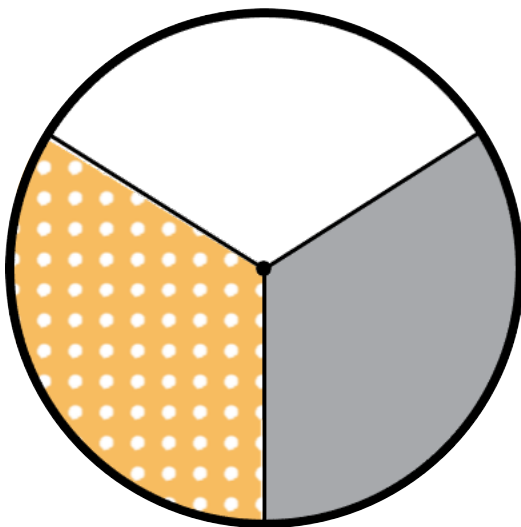
cloudy, sunny, cloudy, cloudy, rainy, rainy, cloudy, rainy, sunny, sunny

Predict the Frequency of an Outcome

Suppose you wanted to find out how often a coin will land on heads or tails if you flip it 30 times. The way to really find out is to do an experiment, record the data, and use that data to answer the question.

Before you start, look at the coin carefully. How many faces does it have? Does it seem likely that it would land on one side more than the other, or do both faces seem like equally likely outcomes? Think carefully, and then make a prediction for how often the coin will land showing heads out of 30 flips (that is, write down what you think will happen!)

1. Another similar experiment involves using a spinner. Here are two spinners, with three possible outcomes each:



2. Look carefully, then predict how many times the spinner will land on the white, grey, and spotted spaces over 30 spins each for the left and right spinners

Perform Experiments

We're going to test out the experiments you made predictions for on the previous page, starting with the coin-flips. For the coin-flip experiment, you'll need a plain, regular coin. Flip the coin a little ways into the air so that it spins a little and falls close to you. Use the tally chart below to record whether it lands with the head or the tails up. Flip the coin 30 times!

Heads	Tails

Now let's do the spinner experiments! Copy or trace the spinners from p. 85 on a separate page. Take a paperclip and straighten out the most outside bend, so it has an inside loop and a pointing finger. You can use a pin or the end of a sharp pencil to go through the loop onto the point in the middle of each spinner. Set the spinner on a flat surface and give the paperclip a spin. Use the tally charts below to record your results for 30 spins on each!

1. For the left-hand spinner:

White	Gray	Spots

1. For the right-handed spinner:

White	Gray	Spots

Compare Results

Once you've flipped your coin 30 times, count up your tally marks and display your results in the table. Use your results to answer the questions.

Heads	Tails

1. How many times did the coin land on heads?
2. How many times did you predict it would land on heads?
3. How close was your guess?
4. Once you've spun the spinners 30 times each, count up your tally marks and display your results in the table. Use your results to answer the questions.

	White	Gray	Spots
Left Spinner			
Right Spinner			

Describe the data and compare the results with your predictions. Did you get the results you thought you would? Are they close or far off?

Practise: Lots of things can be used for probability experiments – anything where you have a choice of two or more options: rolling dice, drawing cards, pulling socks out of your drawer in the morning, spinning a spinner, and so on! Set up an experiment, make a prediction, do the experiment, and look at your results!

When you did the experiment with the coin-flip, did you think the chances of heads and tails were even?

Would you say that making a choice between two options (like which team starts with the ball in a football game) based on a coin flip would be fair? Explain your reasons:

When you did the experiment with the spinners, you probably noticed that one of them had even divisions and one of them did not. For the left-hand spinner, which has even sections, your results should probably be close to each other. Unless you're doing something funny with the spinning, there isn't any reason the spinner should land in one colour more often than any other colour. For the right-hand spinner, which doesn't have even sections, the results might be a bit different! Which colour did you think it would be most likely for the spinner to land in? Why did you think that?

1. Which colour did you think the spinner was least likely to land in?
2. The lowest value?
3. What is the highest frequency?
4. The lowest frequency?
5. What other kind of information might give you both value and frequency numbers? Why?
6. Suppose you and two friends each choose one of the spinner colours and whoever's colour it lands on gets a treat that day. Which spinner do you think would be most fair to use?
7. If your colour is grey, would it matter which spinner was used? Why?
8. Fill in the blank with your own words: For an experiment to be fair, the possible outcomes have to be:

Answer Key

Sort Objects:

Drawings may vary. Items b, e, l go to left basket, items a, f go in the middle basket, items g, j go to the right basket and items c, d, h, i, k are circled.

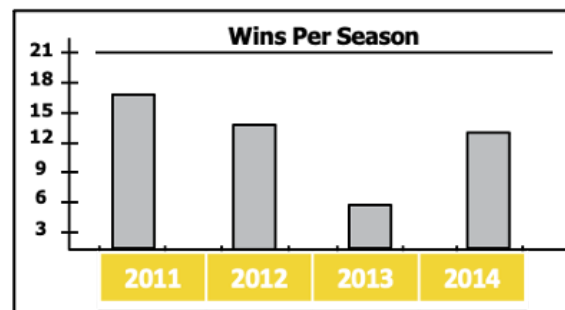
Collect Data with a Survey

Answers may vary; ensure data is accurately recorded and table matches results

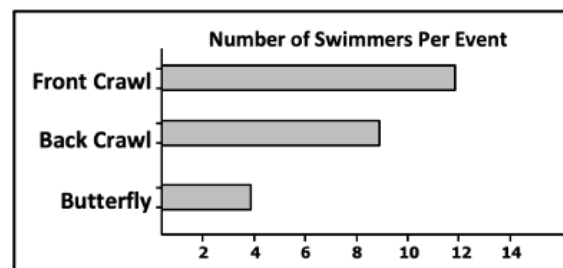
Display Data – Pictograph

Answers may vary; depending on pictograph chosen; there should be 1 and $\frac{2}{3}$ pictograms for "blonde," $\frac{1}{3}$ pictogram for "red", 5 for "brown", and 3 for "black"

Display Data – Vertical Bar Graph



Display Data – Horizontal Bar Graph



Read Primary Data

Answers may vary.

Describe and Interpret Data:

- line graph
- no, no
- in the middle
- 4
- a bell or hill shape
- Answers may vary.
- yes; Answers may vary.
- & i) Answers may vary.

Mode

- 1, 2, 2, 3, 3, 4, 4, 4, 4, 5, 6 – mode is 4
 - 1, 2, 2, 2, 3, 3, 4, 4, 5, 6, 6 – mode is 2
 - the Beavers' mode is higher
 - 4, 6, 6, 6, 6, 7, 8, 13, 16, 26 – mode is 6
3. a) sunny b) cloudy

Predict the Frequency of an Outcome:

Answers may vary. Coin flip is half and half. Probability equals fraction of spinner.

Perform Experiments:

Answers may vary.

Compare Results:

Answers may vary.

Mathematical Fairness:

Answers may vary; discuss with your students.