

GRAPHS & DATA

3rd
GRADE

7

HOW DO YOU SPEND YOUR TIME?

Record the amount of hours (to the nearest whole hour) you spend doing each activity in the table and then create a pictograph to display your data. You may do many other activities during your day, so your hours may not have a sum of 24.

My Typical Day

ACTIVITY	HOURS PER DAY
Learning	7
Sleeping	8
Eating	1
Playing Outside	2
On Electronics	2

PICOGRAPH
HOW I SPEND MY TIME

Learning: 3 full circles, 1 half circle
Sleeping: 4 full circles
Eating: 1 full circle
Playing Outside: 2 full circles
On Electronics: 2 full circles

Each means 2 hours.

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A BOOK ABOUT OUR CLASS

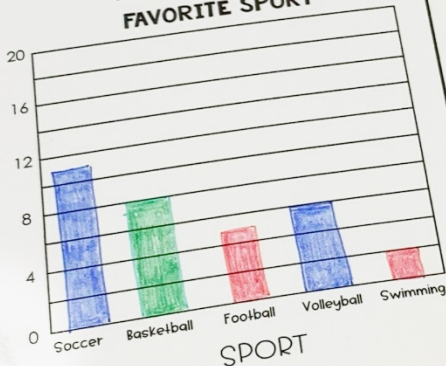
WHAT IS YOUR FAVORITE SPORT?

Categories: Soccer, Basketball, Football, Volleyball, Swimming
 Make data collection easy, record tally marks in the frequency table. When your survey is complete, record the total number of students with each response.

Frequency TABLE

SPORTS	TALLY	TOTAL
Soccer		11
Basketball		8
Football		5
Volleyball		6
Swimming		2

Vertical BAR GRAPH FAVORITE SPORT



Horizontal BAR GRAPH



HOW MANY JUMPING JACKS CAN YOU DO IN 10 SECONDS?

Use the dot plot you created to display the data.



HOW MANY SNAPS CAN YOU DO IN 5 SECONDS?

A dot plot is another way to display data. A dot plot helps us see how data is distributed.

Ready, set, snap! Your teacher will time you for 5 seconds while you see how many times you can snap. Record the number of snaps each student was able to do in the raw data box below.



Raw Data:

Order the numbers recorded from least to greatest. If a number occurs twice, list it twice. Then, record the values in the dot plot.

DOT PLOT SNAPS IN 5 SECONDS



WHAT COLOR IS YOUR PENCIL?
 Option: Have your students cut and past pictures for their pictograph instead of drawing pencils.

WHAT COLOR IS YOUR PENCIL?

A pictograph is similar to a bar graph, but it uses pictures or icons to represent the data instead of bars. It is important to look at the key below a pictograph to know the value of each picture.

Survey the students in your class about the color pencil they are holding right now. Record the data in the frequency table below. Display the data as a pictograph.

Frequency TABLE

PENCIL COLOR	TALLY	TOTAL
Red or Pink		
Yellow		
Green		
Blue		
Black		
Other		



PICTOGRAPH
PENCIL COLORS

Red or Pink
 Yellow
 Green
 Blue
 Black
 Other

represents 2 pencils.

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WHAT COLOR IS YOUR PENCIL?

Use the pictograph you created to answer the following questions.

- What does one pencil in your pictograph represent?
- If each represents 2 pencils, how would you show blue pencils?
- According to the pictograph, how many yellow and blue are students currently using?
- Complete these statements to make them true about the created:
 - A total of _____ pencils are green, blue or black.
 - Exactly _____ fewer pencils are blue than yellow.
 - A total of _____ pencils are being used in our class.
 - Exactly _____ fewer pencils are pink than yellow or blue combined.

Based on your pictograph, what is the difference between the number of yellow and green pencils?



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My Typical Day



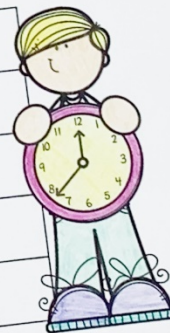
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PICTOGRAPH HOW I SPEND MY TIME



Each  means 2 hours.



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Step 1: Survey Your students or complete Fun Activities (i.e. see how many times you can snap in 5 seconds)

WHAT IS YOUR **FAVORITE DESSERT?**

Categories: Cookies, Cake, Ice Cream, Brownies, Other



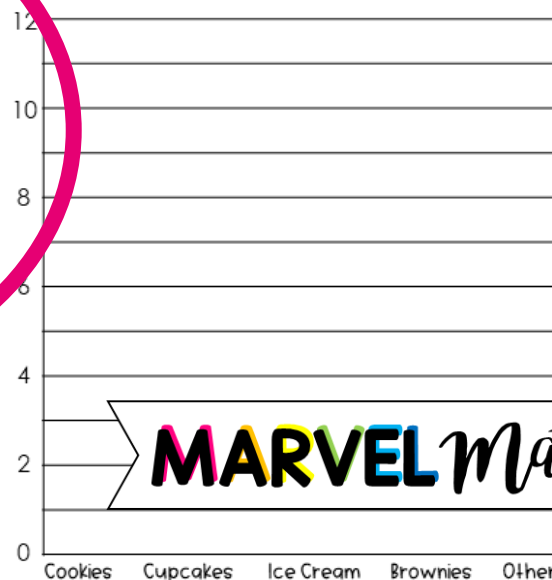
1

To make data collection easy, record tally marks in the frequency table. When your survey is complete, record the total number of students with each response.

Frequency TABLE

CATEGORIES	TALLY	TOTAL
Cookies		
Cupcakes		
Ice Cream		
Brownies		
Other		

Vertical BAR GRAPH
FAVORITE DESSERT



A bar graph is a great way to organize data from this survey question, because bar graphs compare data that is sorted into categories. Bar graphs can be vertical or horizontal. Use the frequency table to create a

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Step 2: Students Create Graphs using the Data

WHAT IS YOUR FAVORITE DESSERT?

Categories: Cookies, Cake, Ice Cream, Brownies, Other



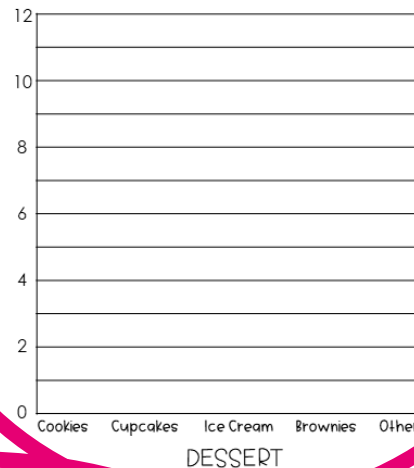
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Frequency TABLE

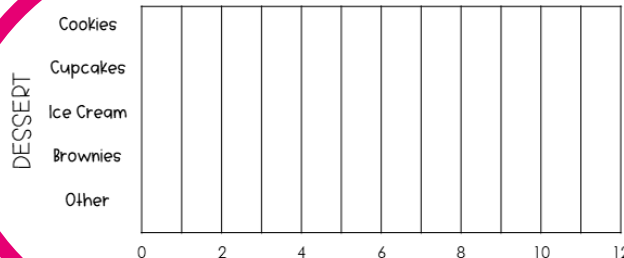
CATEGORIES	TALLY	TOTAL
Cookies		
Cupcakes		
Ice Cream		
Brownies		
Other		

A bar graph is a great way to organize data from this survey question, because bar graphs compare data that is sorted into categories. Bar graphs can be vertical or horizontal. Use the frequency table to create a vertical and horizontal bar graph.

Vertical BAR GRAPH FAVORITE DESSERT

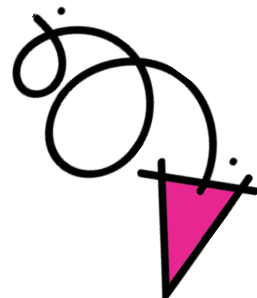


Horizontal BAR GRAPH FAVORITE DESSERT



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Step 3: Students answer 1 and 2-step problems using the data and graphs.



WHAT IS YOUR FAVORITE DESSERT?

Categories: Cookies, Cake, Ice Cream, Brownies, Other

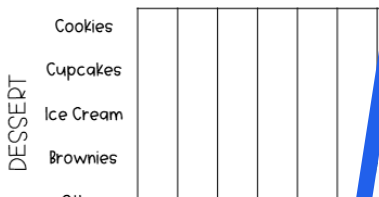
To make data collection easy, record tally marks in the frequency table. When complete, record the total number of students with each category.

Frequency TABLE

CATEGORIES	TALLY	TOTAL
Cookies		
Cupcakes		
Ice Cream		
Brownies		
Other		

A bar graph is a great way to organize data from this survey question, because bar graphs compare data that is sorted into categories. Bar graphs can be vertical or horizontal. Use the frequency table to create a vertical and horizontal bar graph.

Horizontal BAR GRAPH



WHAT IS YOUR FAVORITE DESSERT?

Use the graphs you created to answer the following questions. Your teacher will tell you what to write on the blank lines.

1. How many total students were surveyed?
2. How can you use a bar graph to determine the total number of students surveyed?
3. How many students chose cupcakes or cookies as their favorite dessert?
4. How many more students chose _____ than _____?

5. Write 2 true statements about the data in the favor...
Example: The number of students who chose cup...
number of students who chose cookies.
True statement: _____

Use all 6 activities to build class community and learn to create dot plots, bar graphs, and pictographs!



About the Author

This resource was created by Melissa Johnson, who has 16 years of k-10 teaching experience and a masters degree in Mathematics Education. Her resources build conceptual understanding, make connections between math topics and engage students in the mathematics they are learning.

