

GRAPHING

AN INTEGRATED APPROACH

I've always looked at data analysis and/or graphing as its own little unit in my math curriculum and taught it in isolation from other math concepts and subject areas. As I studied the Common Core Standards and reflected on my own math instruction, I saw the need to integrate my data standards into each of the math strands and concepts I taught throughout the year. This graphing unit contains at least two graphing activities for each of the math concepts below: :

- Place Value
- Addition/Subtraction
- Multiplication/Division
- Fractions
- Measurement
- Geometry

Since the Common Core Standards were the foundation of this unit, you'll find a combination of picture graphs, bar graphs, and line plots in the activities. Because these graphs may be new to students, I recommend spending a brief amount of time at the beginning of the year studying each type of graph to familiarize students with how to create and read the three types of graphs. It will also be important for students to understand basic terminology such as increments, scaled, and data. In this unit, I've included basic terminology posters as well as an introductory lesson for each type of graph.

If the integrated approach just isn't for you or if time won't permit, these lessons can certainly be used in a more traditional graphing unit. Just pick and choose the activities that will best suit your students!

TABLE OF CONTENTS

Vocabulary Posters

- Pgs. 4-9

Introductory Lessons

- Pgs. 10-16 Picture Graph
- Pgs. 17-19 Bar Graph
- Pgs. 20-21 Line Plot

Place Value

- Pgs. 22-24 Building Place Value
- Pgs. 25-30 Roll A Number

Addition/Subtraction

- Pgs. 31-32 Theme Park Word Problems
- Pgs. 33-35 Addition Sentences

Multiplication/Division

- Pgs. 36-37 Sports Word Problems
- Pgs. 38-39 Number Hunt
- Pgs. 40-42 Math Facts
- Pg. 43-45 How Many Arrays?

Fractions/Decimals

- Pgs. 46-47 Fraction Word Problems
- Pgs. 48-49 Graphing Skittles

Time

- Pgs. 50-53 Where Does Our Time Go?
- Pgs. 54-56 Fitness Test

Measurement

- Pgs. 57-58 Pencil Madness
- Pgs. 59-63 Area of Your Hand
- Pgs. 64-65 Paper Airplanes

Geometry

- Pgs. 66-73 Pattern Block Pictures
- Pgs. 74-75 Shape Scavenger Hunt

BAR GRAPH



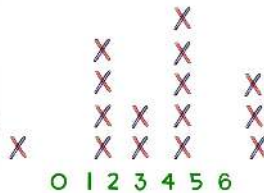
Bar graphs can be used to show how something changes over time or to compare items.

PICTURE GRAPH



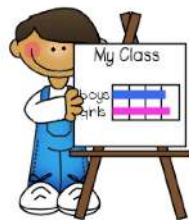
Picture graphs are similar to bar graphs but use pictures instead of bars.

LINE PLOT



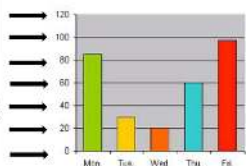
A line plot is a display of a set of data where each separate piece of data is shown as a mark above a number line.

DATA



Data is facts and statistics that can be collected.

INCREMENTS



An increment is a regular or repeated increase on a graph.

SCALED

Favorite Pets	
Cat	🐾 🐾 🐾 🐾 🐾
Dog	🐾 🐾
Hamster	🐾 🐾 🐾

Each 🐾 stands for 2 votes.

On a scaled graph, a picture or symbol stand for multiple objects.

Favorite Ice Cream Picture Graph

- Materials: Ice Cream Flavor Survey, Pencils, eraser, glue, tape
- Ice cream cones



- Directions:
1. Distribute the Favorite Ice Cream Survey and have students complete the survey independently.
 2. Have students glue the survey to the back of the paper and have them draw a picture of their favorite ice cream flavor.
 3. Have students glue the survey to the back of the paper and have them draw a picture of their favorite ice cream flavor.
 4. Have students glue the survey to the back of the paper and have them draw a picture of their favorite ice cream flavor.

- Extension:
- Use a separate piece of construction paper to glue the back of the survey and piece of construction paper to the back of the survey and have them draw a picture of their favorite ice cream flavor.
 - Have students glue the survey to the back of the paper and have them draw a picture of their favorite ice cream flavor.

Activity Summary: In this activity, students will use a picture graph to show their favorite ice cream flavor.

Favorite Ice Cream Flavor Survey

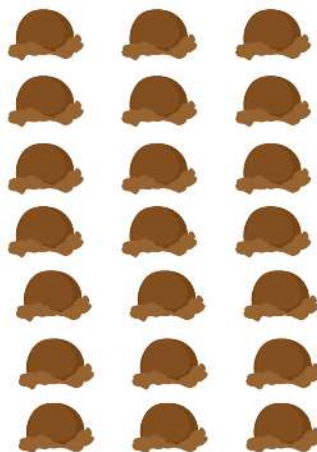
Choose your favorite flavor of ice cream below. You can only choose 1 flavor.

Vanilla _____ Chocolate _____ Strawberry _____
Butter Pecan _____ Cherry _____

Favorite Ice Cream Flavor Survey

Choose your favorite flavor of ice cream below. You can only choose 1 flavor.

Vanilla _____ Chocolate _____ Strawberry _____
Butter Pecan _____ Cherry _____



How Many Pets Bar Graph

- Materials: How Many Pets Survey, Pencils, eraser, glue, tape
- Ice cream cones



- Directions:
1. Distribute the How Many Pets Survey and have students complete the survey independently.
 2. Have students glue the survey to the back of the paper and have them draw a picture of their favorite pet.
 3. Have students glue the survey to the back of the paper and have them draw a picture of their favorite pet.
 4. Have students glue the survey to the back of the paper and have them draw a picture of their favorite pet.

Activity Summary: In this activity, students will use a bar graph to show how many pets they have.

My Pets Survey



Place a checkmark beside each type of pet that you own.

_____ Cat _____ Dog _____ Fish _____
_____ Bird _____ Lizard _____

My Pets Survey



Place a checkmark beside each type of pet that you own.

_____ Cat _____ Dog _____ Fish _____
_____ Bird _____ Lizard _____

How Many Siblings Line Plot

- Materials: How Many Siblings Survey, Pencils, eraser, glue, tape
- Ice cream cones

- Directions:
1. Distribute the How Many Siblings Survey and have students complete the survey independently.
 2. Have students glue the survey to the back of the paper and have them draw a picture of their favorite sibling.
 3. Have students glue the survey to the back of the paper and have them draw a picture of their favorite sibling.
 4. Have students glue the survey to the back of the paper and have them draw a picture of their favorite sibling.

Activity Summary: In this activity, students will use a line plot to show how many siblings they have.

How Many Books Line Plot

- Materials: How Many Books Survey, Pencils, eraser, glue, tape
- Ice cream cones

- Directions:
1. Distribute the How Many Books Survey and have students complete the survey independently.
 2. Have students glue the survey to the back of the paper and have them draw a picture of their favorite book.
 3. Have students glue the survey to the back of the paper and have them draw a picture of their favorite book.
 4. Have students glue the survey to the back of the paper and have them draw a picture of their favorite book.

Activity Summary: In this activity, students will use a line plot to show how many books they have.

