

# Represent & Interpret Data

## Videos

### Representing Data



## Materials

- Toys
- Blocks
- Pen or markers
- Worksheets (included)

## Age Group/Grade

1<sup>st</sup> and 2<sup>nd</sup> Grade

## Kid2Kid Tutorials

## Prerequisites

Identify Numbers

Counting

How many/less in category

Picture, bar, tally graphs, and pie chart

Organize, represent, & interpret data

Read and create a simple graph/chart

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# Picture Graph

## Creating a Picture Graph

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A picture graph helps organize objects and data. It tells us how many or less of something we have.

Example:

Issy's class will be getting a class pet. The teacher is giving them an option between a cat, dog, rabbit, or fish. Each student can vote for only 1 pet. The animal with the most votes will be the class pet. Here are the results of the vote:

5 kids voted for a cat

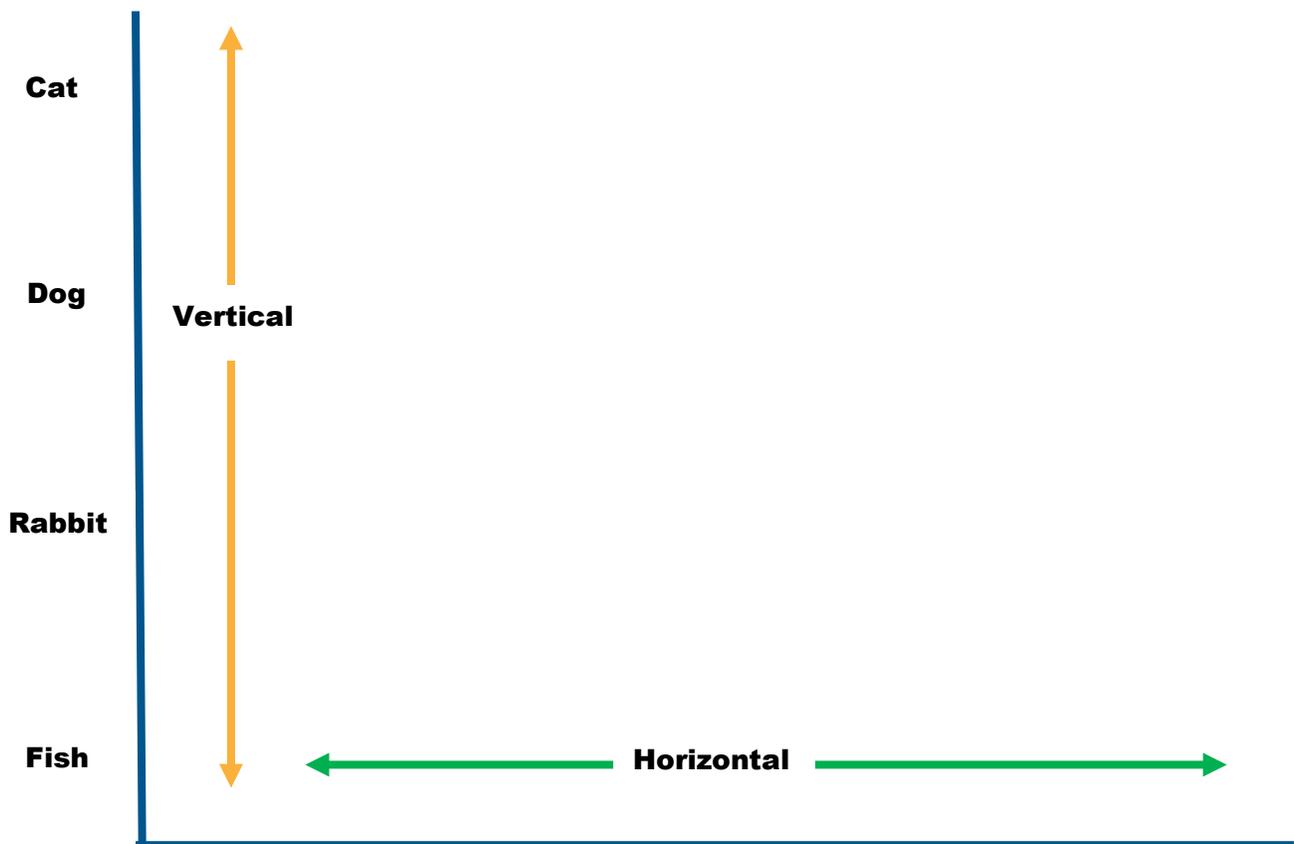
10 kids voted for a dog

7 kids voted for a rabbit

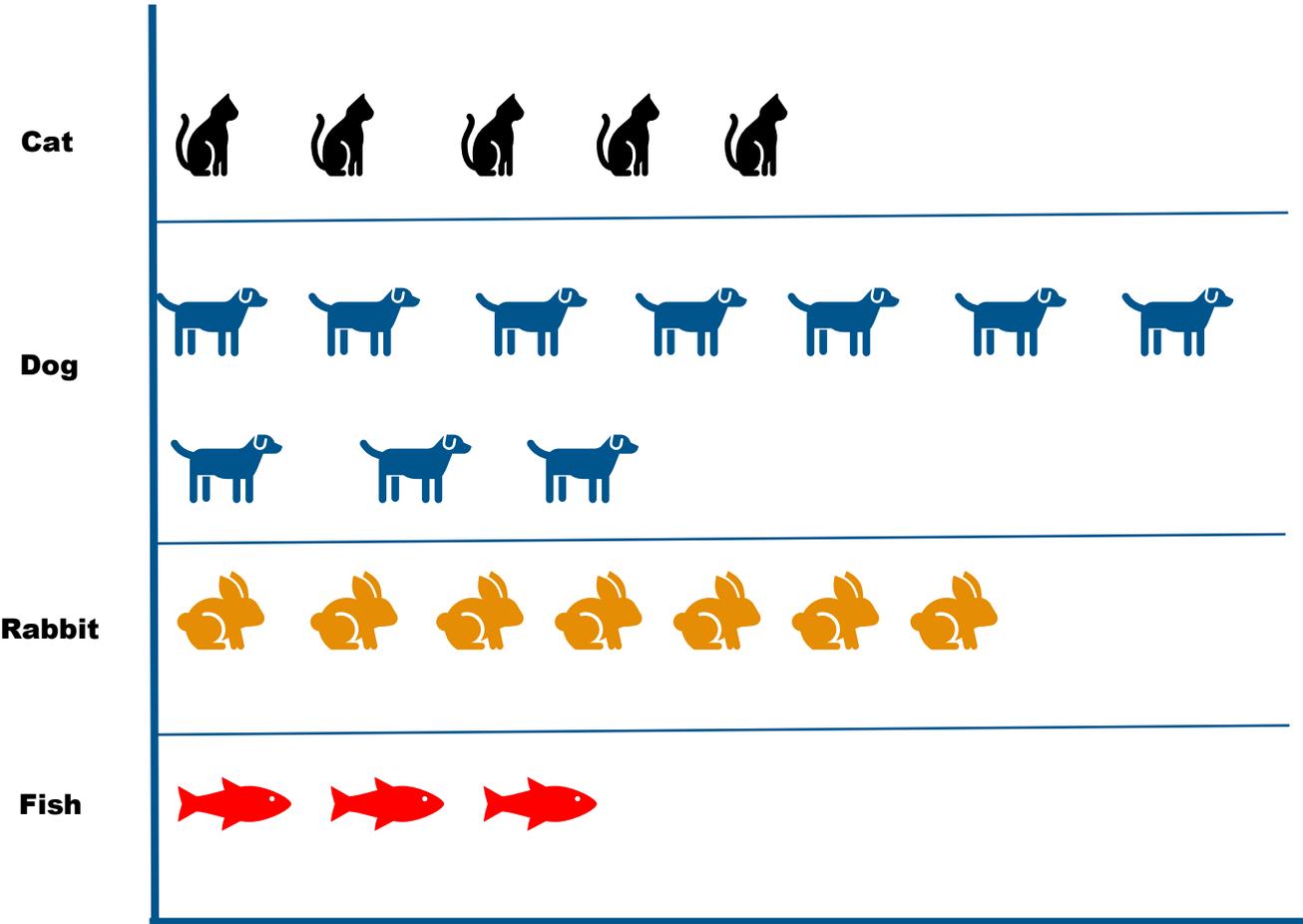
3 kids voted for a fish

To see a picture representation of which animals got the most vote put the number of votes for each animal next to the name.

First, we will draw a graph and label the names of the animals (category). You can do this horizontally (right to left) or vertically (up and down). In the graph below the animals are listed vertically.



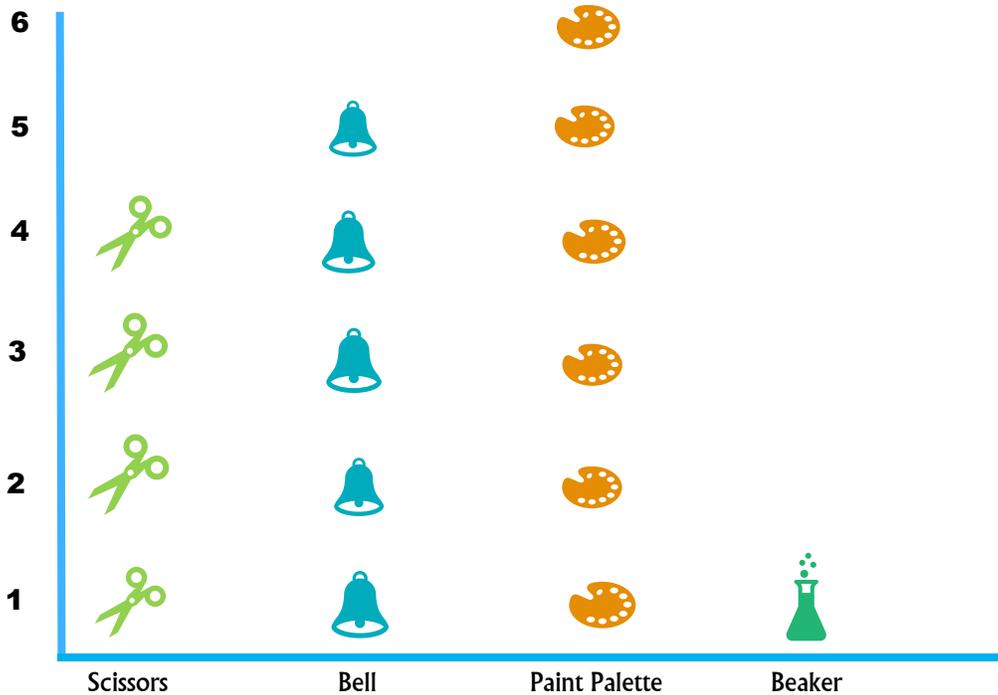
Next, we put pictures of the animals next to the name. The number of animals is the number of votes. We have 5 votes for cats so we would place 5 cats next to the label "Cat".



# Reading a Picture Graph

Reading a picture graph is just counting the number of like items.

Example: There are 4 items that have been sorted by type. Count each of the items and label. Which one do you have the most of? Which one do you have the least of?



There are 4 scissors, 5 bells, 6 paint palettes, and 1 beaker.

# TALLY

## Reading a Tally Chart

A tally is keeping track of a score or amount. Example: Zack oversees keeping track of the score for his and the rival teams scores. The game is moving fast, and he must be quick and accurate. Below are the teams scores.

Team	Score Tally	Total
Home Team	      	
Visiting Team	      	

To total the score, count the tallies (dashes). Notice that for every 5 the 5<sup>th</sup> one is diagonal. This helps in counting large tally numbers. Instead of having to count each one you can count by 5's.

Team	Score Tally	Total
Home Team		13
Visiting Team		11

## Creating a Tally Chart

The gym wants to create groups by age, but they want to make sure there is enough kids on each team. Tally all the ages and total the numbers.

Ages: 5, 6, 7, 8, 8, 8, 7, 6, 8, 5, 7, 5, 6, 5, 8, 5, 5, 6, 7, 5, 8, 7, 5, 8, 6, 5

Age	Score Tally	Total
5		
6		
7		
8		

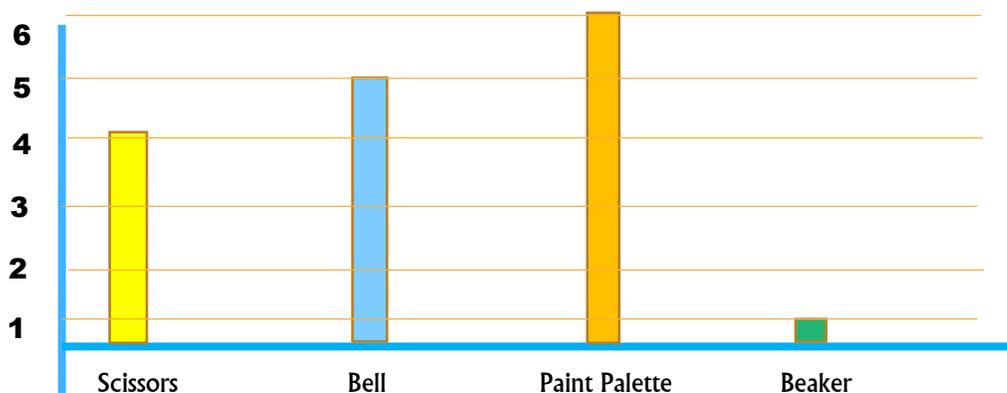
For each age group that you see put a tally. Then total them up. Remember for every 5<sup>th</sup> tally make a diagonal line.

Team	Score Tally	Total
5		9
6		5
7		5
8		7

# Bar Graph

## Reading a Bar Graph

A bar graph is like a picture graph, the difference is instead of picture it is a bar. Reading the graphs is the same.



The example above shows that there are 4 scissors, 5 bells, 6 paint palettes, and 1 beaker.

## Creating a Bar Graph

Ms. Bee wants to know how many of each products the students have in their supply bags. She writes down the following:

Student 1: 3 pencils, 1 ruler, 0 glue sticks, and 5 erasers

Student 2: 5 pencils, 1 ruler, 3 glue sticks, and 2 erasers

Student 3: 2 pencils, 0 rulers, 5 glue sticks, and 4 erasers

She wants to create a bar graph using the data above. To create the graph, she must find the total number for each item.

Pencils = 10, rulers = 2, glue sticks = 8, erasers = 11

She then shades in the amount for each item in a table as shown below.



# PIE CHART

## Reading a Pie Chart

A pie chart is shaped like a pie and each slice represents data. The bigger the slice the larger the number. The smaller the slice the smaller the number.

Ms. Bee has decided that instead of a bar graph she would like a pie chart. So, she made the following chart.

This chart shows:

Pencils = 10, rulers = 2, glue sticks = 8, erasers = 11

There are more erasers so the pie slice for erasers is the largest. There are only 2 rulers (smallest) so the pie slice is smallest.



## Creating a Pie Chart

Most pie charts require you know division and percentages; however, you can still create a simple pie chart. Let's create one using the data below:

Example: (you may remember this from the picture graph section)

Issy's class will be getting a class pet. The teacher is giving them an option between a cat, rabbit, or fish. Each student can vote for only 1 pet. The animal with the most votes will be the class pet. Here are the results of the vote:

4 kids voted for a cat

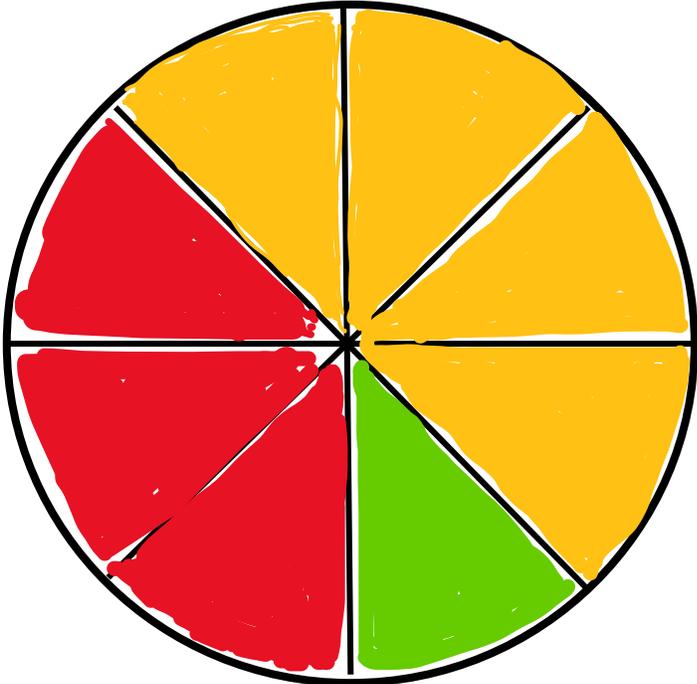
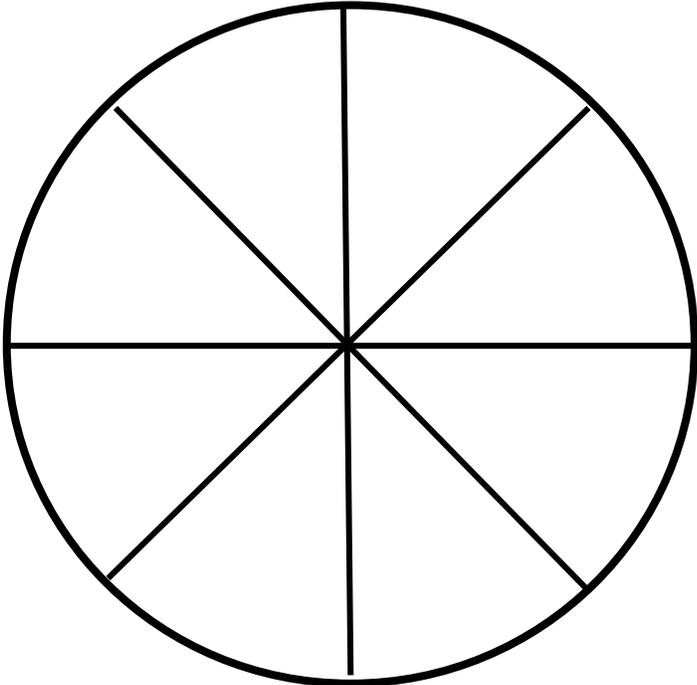
1 kid voted for a rabbit

3 kids voted for a fish

Now let's make a pie chart with this data

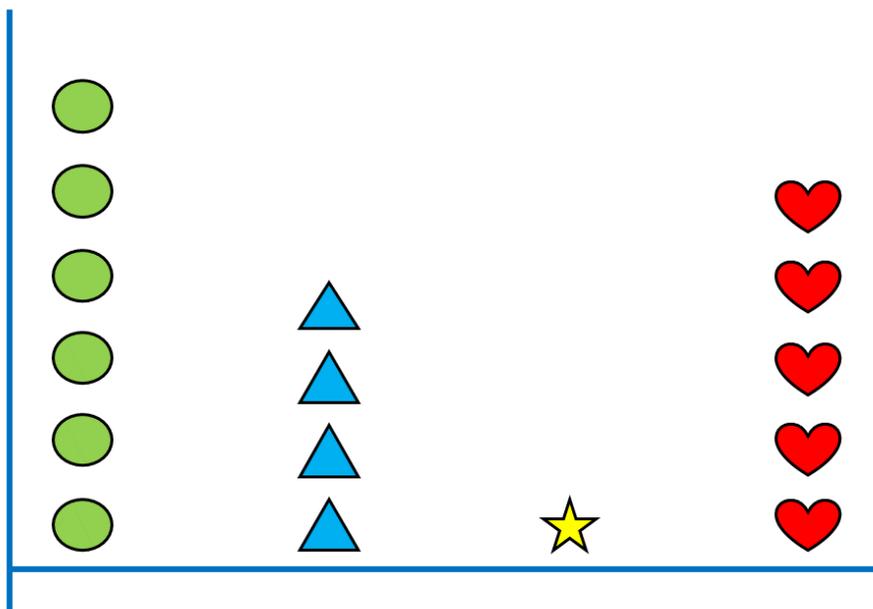
The pie chart below shows 8 sections. Each section will represent a vote. We also need to assign a color to each animal, so we shade each animal vote correctly.

The cat will be yellow, the rabbit green, and the fish red.



# Picture Graph (read) Worksheet

Write the total number of shapes. Which shape has the most and which shape has the least?



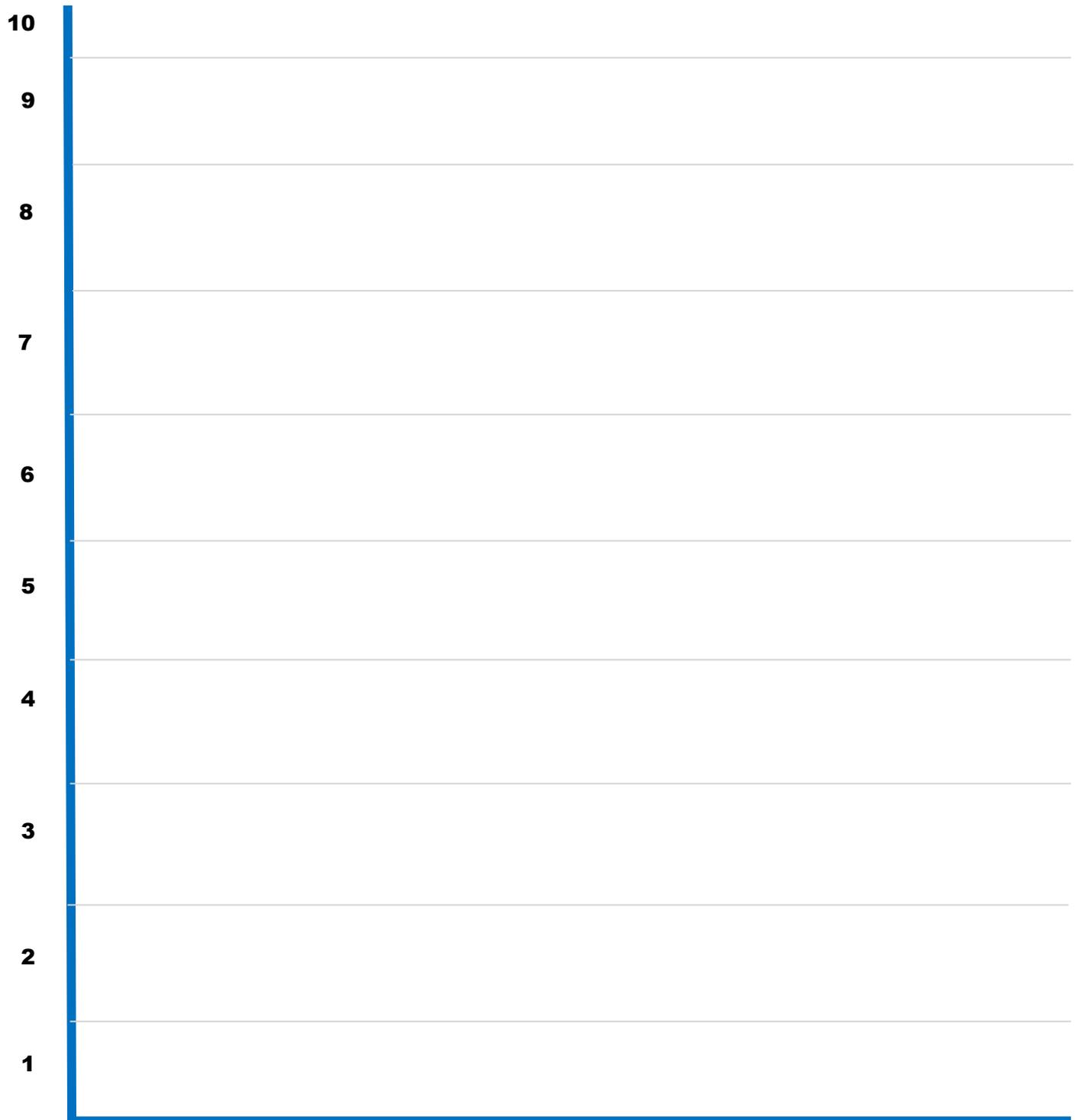
Shape Name \_\_\_\_\_ How Many? \_\_\_\_\_

# Picture Graph (create) Worksheet

Count and draw the total number of shapes.



Circles \_\_\_\_\_ Hearts \_\_\_\_\_ Squares \_\_\_\_\_ Triangles \_\_\_\_\_



# Reading a Tally Chart

Count the number of tallies and write the total in the "total" column.

Team	Score Tally	Total
Home Team		
Visiting Team		

Team	Score Tally	Total
Number of Dogs		
Number of Cats		

Team	Score Tally	Total
Girls in class		
Boys in class		

Team	Score Tally	Total
Red Crayons		
Purple Crayons		

# Creating a Tally Chart

**Example:**

	Score Tally	Total
Kid		10
Teacher		5

Draw tallies for the total number

	Score Tally	Total
Fish		4
Rabbits		7

	Score Tally	Total
Blue		14
Orange		5

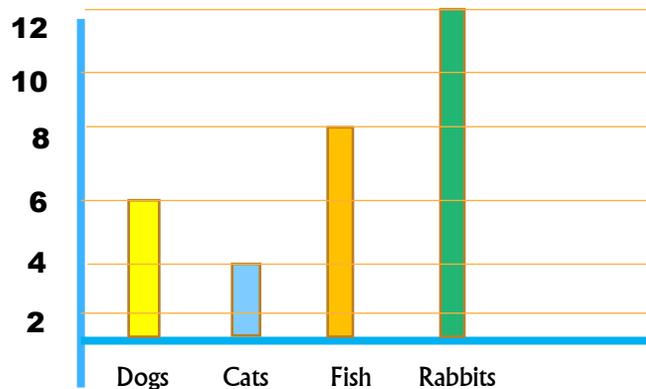
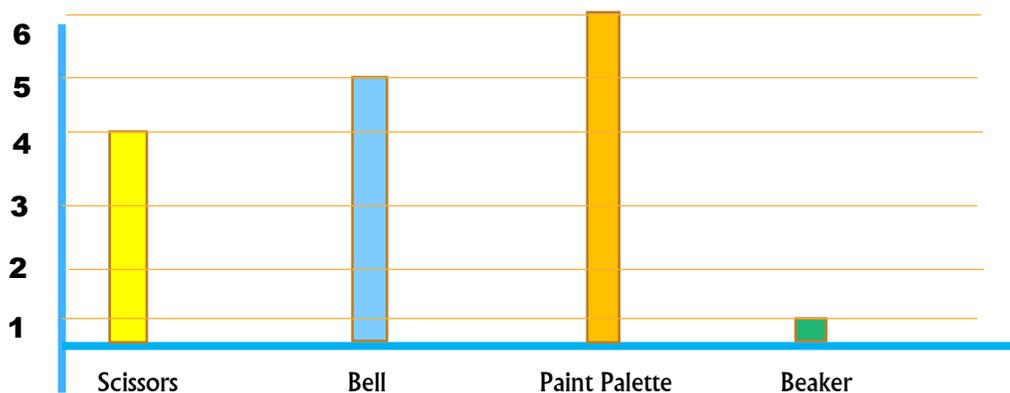
	Score Tally	Total
Home Team		24
Visiting Team		18

# Reading a Bar Graph

Write down the number of items listed on the bar graph

How many scissors? \_\_\_\_\_ How many bells? \_\_\_\_\_

How many paint palettes? \_\_\_\_\_ How many beakers? \_\_\_\_\_



How many dogs? \_\_\_\_\_

How many cats? \_\_\_\_\_

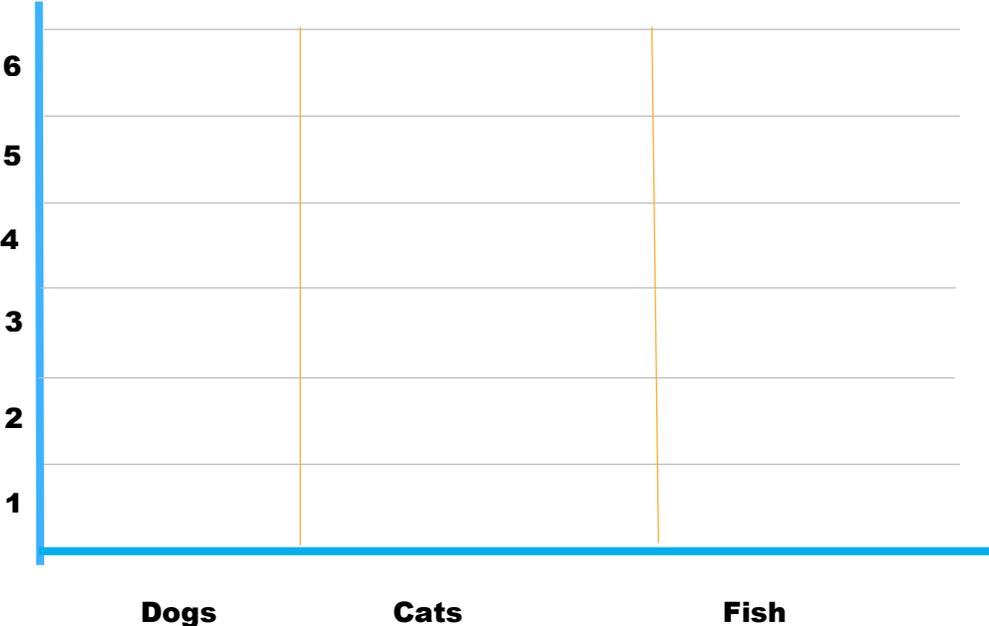
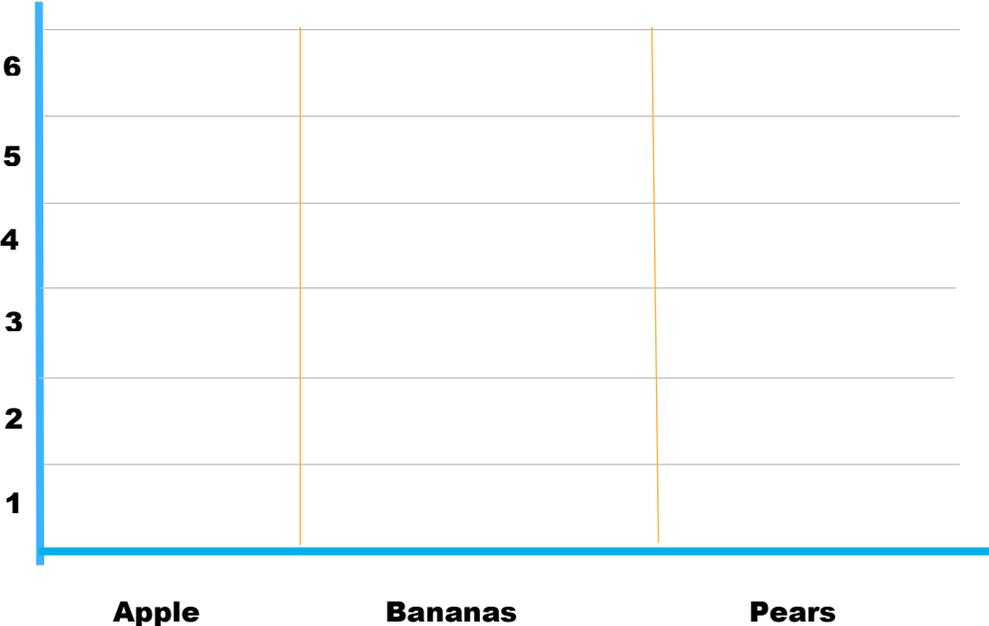
How many fish? \_\_\_\_\_

How many rabbits? \_\_\_\_\_

# Creating a Bar Graph

Color in the boxes for each item. The number of items will be the number of boxes you color in. Be sure to use a different color for each item.

1 apple, 3 bananas, 5 pears



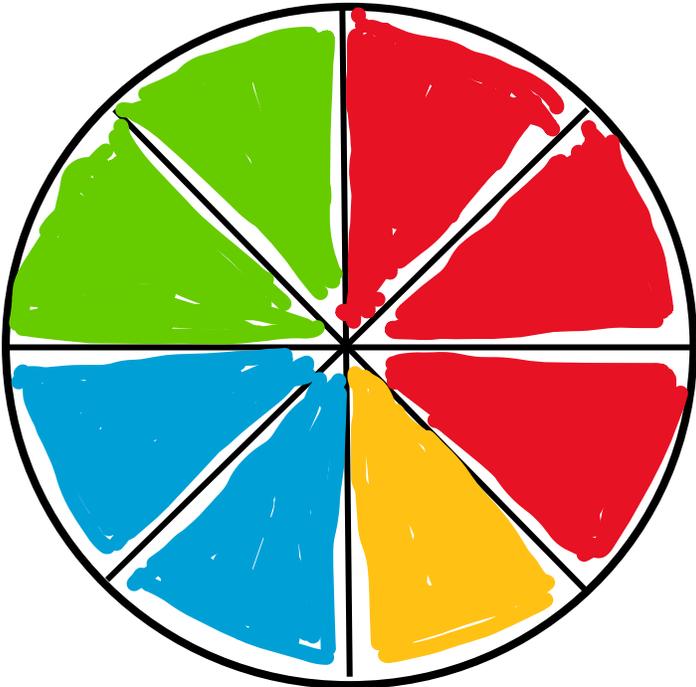
# Reading a Pie Chart

Issy created a pie chart for his toys. Each toy is represented by a color. He has 8 toys in total. All the cars are represented by green, the action figures by blue, and slingshot by yellow. How many of each item does he have?

Cars \_\_\_\_\_ Action figures \_\_\_\_\_ Slingshots \_\_\_\_\_



Zack's and his friends want to play a game. They all vote on their favorites. The choices are Fortnite (represented by green), Minecraft (blue), Clash of Clans (yellow), or Prodigy (red). Which game received the most votes?

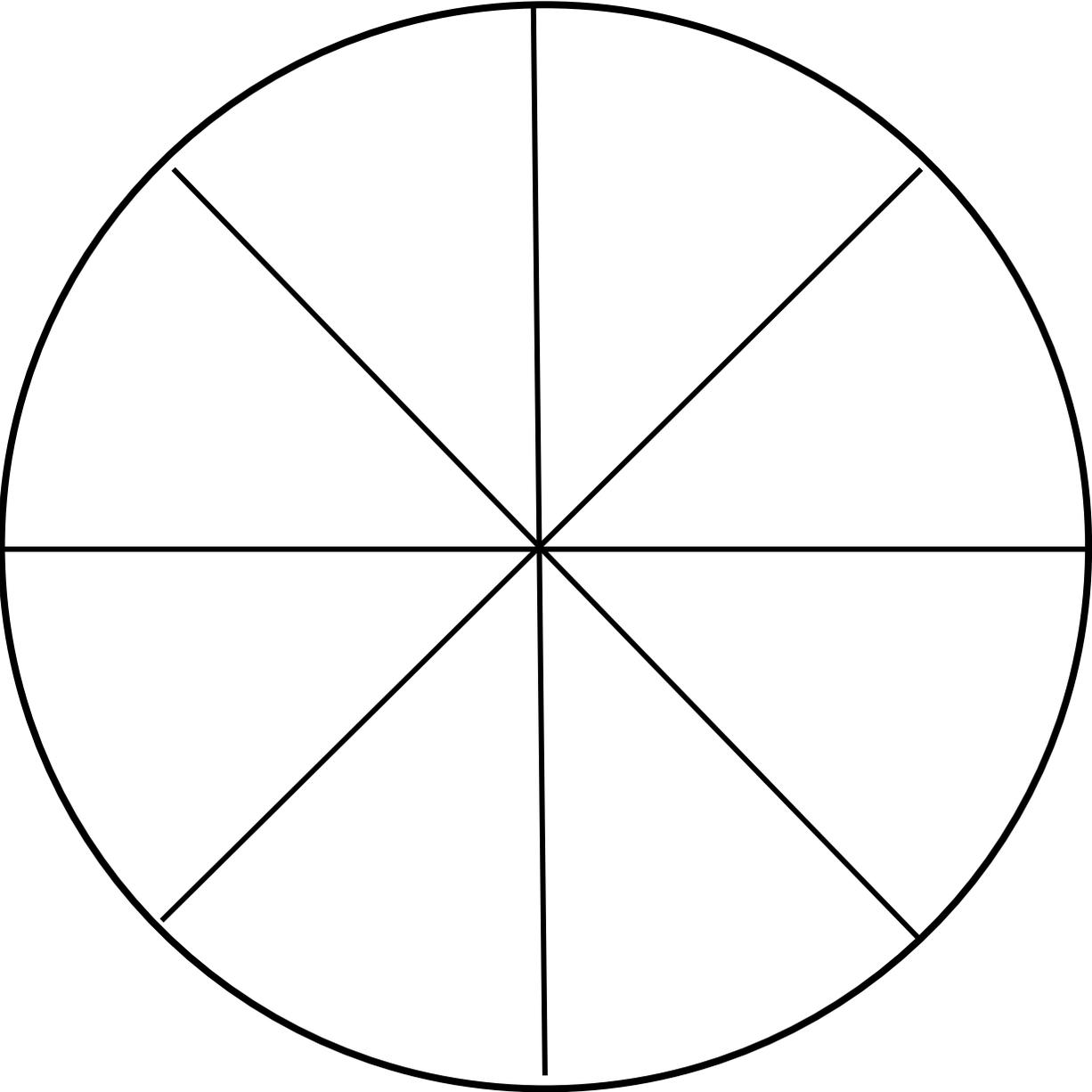


# Creating a Pie Chart

Zack has 2 pencils, 1 stapler, 4 erasers, and 1 calculator. He wants to create a pie chart to see which one he has most of. Create a pie chart. First assign a color to each item then color in the chart.

Pencil \_\_\_\_\_(color) Stapler \_\_\_\_\_(color)

Eraser \_\_\_\_\_(color) Calculator \_\_\_\_\_(color)



Issy needs to get food for his animals. He needs 2 bags of dog food, 3 bags of cat food, and 3 bags of food for the rabbits. He wants to see a visual representation of what he needs. Assign each item a color and create a pie chart.

Dog Food \_\_\_\_\_ (color)    Cat Food \_\_\_\_\_ (color)

Rabbit Food \_\_\_\_\_ (color)

