



Name: _____

Date: _____

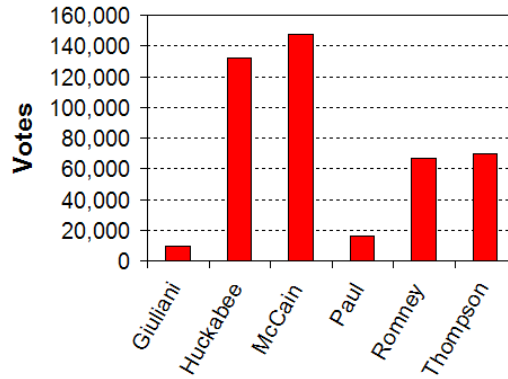
Student Exploration: Mascot Election

Vocabulary: bar graph, frequency, frequency table, horizontal axis, pictograph, scale, tally chart

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

The table and graph below show the results of the 2008 South Carolina Republican Primary.

Candidate	Votes
Giuliani	9,494
Huckabee	132,440
McCain	147,283
Paul	16,054
Romney	67,132
Thompson	69,467



- Which display makes it easier to see who won, the table or the graph? _____
- Explain. _____

Gizmo Warm-up



It's the grand opening of Bland Mountain Elementary School, and at the first school assembly the students get to elect a new mascot. There are four choices: Eagle, Lion, Bear, and Wolf.



In the *Mascot Election* Gizmo, check that the **Initial** scenario is selected. Click **New**. Drag the **Students** slider to fill the auditorium with 100 students. After the auditorium is full, click **Vote**.

- Look at the students in the auditorium. Which mascot do you think won? _____
- On the right side, check that **Table** is selected. A **frequency table** reports the **frequency**, or number, of each result. According to the table, which mascot won? _____
- A group of students decides to change their votes. Click and drag to select a row of students, and then click one of the mascots at the top left. How does this affect the results?



Activity A: Tables and tallies	<u>Get the Gizmo ready:</u>	Mascot	
	<ul style="list-style-type: none"> • Select One favorite from the Scenario menu. • Next to Display, check that Table is selected. • Set the Students to 50. 	 Eagle	

1. Click **New**, and then click **Vote**. Look at the table. What were the results?

Eagle: _____ Lion: _____ Bear: _____ Wolf: _____

2. In the **Display** menu, select the **Tally chart**. A **tally chart** uses vertical line segments called tally marks to display the results.

A. How many votes does each tally mark (I) represent? _____

B. How many votes does each set of tally marks (||||) represent? _____

C. How would you show 18 votes with tally marks? _____

3. Select **Table**. You can change votes by selecting students and clicking a mascot. You can also click and drag to select a group of students. Set the votes so that Eagle gets 16 votes, Lion gets 18 votes, Bear gets 12 votes, and Wolf gets 4 votes.

Make a tally chart at right to show these results. Then select **Tally chart** to check your work.

Mascot	Tally
Eagle	
Lion	
Bear	
Wolf	



4. Suppose you were standing at the classroom door, recording the shirt color of students as they walked in. Would you use a frequency table or a tally chart? _____

Explain why. _____

5. Would you use a tally chart to display the result of a national election? _____

Explain why or why not. _____




Activity B: Pictographs	<u>Get the Gizmo ready:</u>	 Bear	
	<ul style="list-style-type: none"> • Select Three favorites from the Scenario menu. • Check that Tally chart is selected. • Set the Students to 100. 		


1. Click **New**, and then click **Vote**. Look at the tally chart. What were the results?

Eagle: _____ Lion: _____ Bear: _____ Wolf: _____

2. Select the **Pictograph**. This **pictograph** uses  symbols to represent the results.

A. Look at the **Key** at the bottom. How many votes does each  represent? _____

B. Now change the **Key** so that each  represents 10 votes. How does this change the graph? _____

C. What does it mean if you can see only part of a symbol, like ? _____

3. Select **Table** and set the votes to: Eagle = 25 votes, Lion = 20, Bear = 15, and Wolf = 40.

Fill in the two pictographs below to display these results. Use a different scale for each pictograph, and fill in the keys below each pictograph. Check your work with the Gizmo.

Students' Favorite Mascot	
Mascot	Number of votes
 Eagle	
 Lion	
 Bear	
 Wolf	


Key: Each  = votes

Students' Favorite Mascot	
Mascot	Number of votes
 Eagle	
 Lion	
 Bear	
 Wolf	

Key: Each  = votes



4. What are some advantages and disadvantages of using a pictograph to display results?



Activity C: Bar graphs	<u>Get the Gizmo ready:</u> <ul style="list-style-type: none"> • Select Two favorites from the Scenario menu. • Select Table. • Check that Students is set to 100. 	
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1. Click **New**, and then click **Vote**. Look at the table. What were the results?

Eagle: _____ Lion: _____ Bear: _____ Wolf: _____

2. Select the **Bar graph (horizontal)**. A **bar graph** uses bars to display the results. Click the  and  arrows to adjust the **scale** of the graph until all the bars are clearly visible.

A. The **horizontal axis** is the horizontal number line below the bar graph. What is the largest number you can see on the horizontal axis? _____

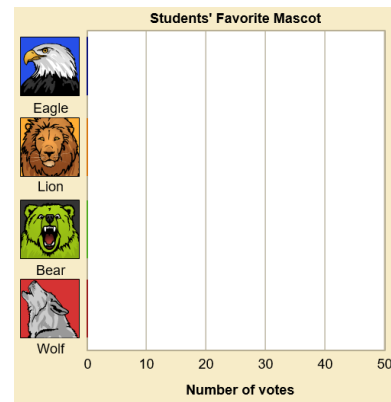
B. Compare the **Bar graph** to the **Pictograph**. How are they similar? _____

C. How are the pictograph and bar graph different? _____

3. Click **New**. Select **Table**, and click **Vote**. What were the results?

Eagle: _____ Lion: _____

Bear: _____ Wolf: _____



4. Fill in the bar graph to the right to display these results. Use the Gizmo to check your work.

5. Suppose you wanted to quickly know who won an election. Would you rather look at a bar graph or a frequency table? Explain. _____

6. Suppose you wanted to know the exact number of people who voted for a candidate. Would you rather look at a bar graph or at a frequency table? Explain. _____

