

Title: Mardi Gras Mania

**Brief Overview:**

The students will gather, organize, and interpret data in order to make informed decisions based on outcomes relating to a Mardi Gras Carnival. They will be able to recognize, describe, and use the vocabulary terms relating to a line plot. They will also construct their own line plots and tally charts.

**NCTM Content Standard/National Science Education Standard:**

Data Analysis and Probability  
Number and Operation  
Comparing and Ordering Numbers

**Grade/Level:**

Grades 2-3

**Duration/Length:**

3 Days (60 minutes per day)

**Student Outcomes:**

Students will:

- Use tally marks to gather data
- Determine the appropriate scale to organize data
- Create line plots to further organize data
- Interpret data from a line plot

**Materials and Resources:**

- Save all data for later use
- Brainstorming overhead transparency—Our Favorite Carnival Snacks (TR1)
- Snack bar survey sheet (SR1)
- Pizza party overhead transparency (TR2)
- Mystery candy bags worksheet (SR2)
- 1 bag of candy per group including Hershey Kisses, Lollipops, Jolly Ranchers, Miniature Hershey Bars, and Starbursts
- Construction paper
- Fabulous Faces (SR3)
- How Halloween is Celebrated (SR4)
- How Valentines Day is Celebrated (SR5)
- How Fourth of July is Celebrated (SR6)
- How Thanksgiving is Celebrated (SR7)
- Bear manipulatives

- Brown paper bags- one for each table group in class
- Bears in the Bayou (SR8)
- Bears in the Bayou overhead transparency (TR3)
- One copy of TR3 after data has been collected for each table group
- Bead Bonanza (SR9)
- One zip lock bag per student filled with: 1 piece of string- 24 inches long, 5 purple beads, 5 yellow/gold beads, 5 green beads
- Bead Bonanza overhead transparency (TR4)
- Pick Me Mrs. Beadly! Overhead transparency (TR5)
- Writing paper
- Pencils
- Bountiful Beads (SR10)
- Bountiful Beads overhead transparency (TR6)
- Fair Play overhead transparency (TR7)
- Calculator tape
- Scissors
- Overhead bears
- Blank transparencies
- Dice- one pair per group
- Let's Cheer Up Jackie (SR11)
- Cheer Up Jackie (SR12)
- Terrific Tattoos (SR13)
- Summative Assessment Resource and Answer Key

### **Development/Procedures:**

## **Lesson 1—Tally Marks**

### ***Preassessment*** –

- Discuss the concept of carnivals with the students. Explore the types of games, activities, food, and beverages that would exist at a carnival with a Mardi Gras theme. Using the Favorite Carnival Snacks overhead (TR1), the teacher will record the different snacks the students enjoy at carnivals. Tell the students that this information will help the Mardi Gras planning committee determine which kinds of snacks to order for the carnival's snack bar.

### ***Launch*** –

- Each student will receive a copy of the Mardi Gras Snack Bar Survey sheet (SR1). The students will have 5 minutes to circulate around the room to gather data about which of the snack bar items are the class's favorites. The students can record the information on their sheet using any method they choose. After surveying their peers, the students will display their papers in the front of the room. Look at each paper and point out the different ways that the students recorded their data. Together, the class should determine how many of each snack the planning committee should buy for the class.

***Teacher Facilitation –***

- Tell the students that because they have worked so hard to help the planning committee, they will be rewarded with a pizza party. Now, the planning committee needs to know what kinds of toppings each student would like on his or her slice of pizza. Use an overhead (TR2) to tally the data from the class in a tally chart. Discuss as a class why it is helpful to use tally marks and charts to record data.

***Student Application –***

- Distribute a mystery bag of candy to each group of 4 students. Make sure each bag has 2 of one type of candy, 10 of another, 4 of another, 7 of another, and 2 of another for a total of 25 pieces of candy per bag. Each group's bag should have a different combination. Instruct students not to open the bags. Read and discuss the Mystery Candy Bag worksheet (SR2). Instruct the students to sort the candy by types, i.e. Hershey kisses vs. lollipops, tally each type of candy, and add the totals, using SR2. Have the students complete the activity in their groups.

***Embedded Assessment –***

- Distribute a piece of construction paper to each student. Individually, the students will create a flyer, based on their results, persuading the other students to pick their bag of candy to eat. The students should use words and numbers in their flyers.

***Reteaching/Extension –***

- Distribute Fabulous Faces (SR3). Read and discuss the instructions. Have students work in pairs to read the story and complete the tally chart. Individually, the students will answer the final question on the bottom of the worksheet, using words and numbers in their answers.

## **Lesson 2—Range**

***Preassessment –***

- Divide the class into four teams. Distribute SR4-7, one to each team. Explain that they will have time to discuss the special day on their web and record how this day is celebrated. They should record their ideas on the web. Students will have 3-5 minutes to do this task, and then share with the rest of the class. Explain to the class that Mardi Gras is a festival that is celebrated with parades, lots of eating, and the gathering of beads.

***Launch –***

- Tell the students that they are going to gather some data that will later help us to create our own beaded necklace. Place a bag filled with 15 bear manipulatives at each table group. Distribute, read and discuss SR8 with students.

***Teacher Facilitation –***

- Using the overhead (TR3), gather the data from each group to display one set from the entire class. Discuss the different amounts of bears that the students

could hold in one hand. As a class create a definition for the word scale to add to the overhead. Ask students to name the highest and lowest numbers on the tally chart. Tell students to subtract the lowest number from the highest to find the range.

***Student Application –***

- Tell the students that we are now ready to start making their beaded necklaces. Read, discuss, and allow students to complete the activity on SR9. Once all the students have completed the activity, collect the times from all the students on TR4. Ask the students what the range is. Prompt by asking what was the least, and greatest amount of time that it took to create a beaded necklace. Ask the students to compare their best time with the rest of the class.

***Embedded Assessment –***

- Distribute and discuss TR5. Students will need to justify using words and numbers whether or not they would be a good person to be on the bead making committee. They must use information from the tally chart to justify their thinking.

***Reteaching/Extension –***

- Students will create an assembly line to create bead necklaces. Follow the procedure on SR10. Collect the class data and find the range, using TR6.

### **Lesson 3—Line Plots**

***Preassessment –***

- Pose the scenario on TR7. Have the students answer the question in their math journal. Allow time for students to share and discuss their thinking.

***Launch –***

- Pull out the tally chart entitled Bead Bonanza Class Results (TR4). Explain to the students that in order for you to make a clear decision on what type of pizza to order, you need to organize this data a little better so it can be interpreted easier. Solicit suggestions from the class on how to organize. Explain that today we will be creating something called a line plot. Ask if any students know what a line plot is. Make an association between a line plot and a number line. Reinforce the notion that on a line plot, the scale starts with the lowest value, and ends with the highest value. All the other numbers below or above the range are not necessary to display because we do not have data for them.

***Teacher Facilitation –***

- Place a bowl of bear manipulatives and a roll of calculator tape at each table group. Pass out a copy of the class results from TR3. Have the students create a number line starting with zero and ending with 15. Explain to the students that they will use what they have learned about range to remove the numbers they will not need based on the data on the tally chart. Next, have the students place one

bear above the number on the calculator tape number line for each tally on the chart. Explain that they have made a line plot! Using overhead bears, complete a line plot on the overhead as students complete this at their seat for extra support. Add a title and label the x-axis. Tell students that the bears are all the same size. When there aren't bears to use, mathematicians use the symbol of an X to show a result. All the X symbols are always the same size. It makes it easier to interpret the data. Also discuss the vocabulary terms: outlier, cluster, range, gap, mode, most likely, and least likely.

***Student Application*** –

- Bring back the scenario from TR7. Explain that now it is time to see how we can cheer Jackie up using your (the teacher) method. Remind them that in order to win the game, the sum of the dice must equal their assigned number. Jackie really wanted a 10, because it was her favorite, but is it likely to occur? Distribute SR11. Read and discuss the instructions, then give dice to each pair of students to complete the task.

***Embedded Assessment*** –

- Distribute SR12. Collect and read to see how the student's thinking has changed due to this activity.

***Reteaching/Extension*** –

- Distribute and discuss the directions on SR13. Once all the students have completed the task on the top half, combine individual data to one class line plot on a blank overhead. Students should then complete the journal response on the bottom half of SR13.

**Summative Assessment:**

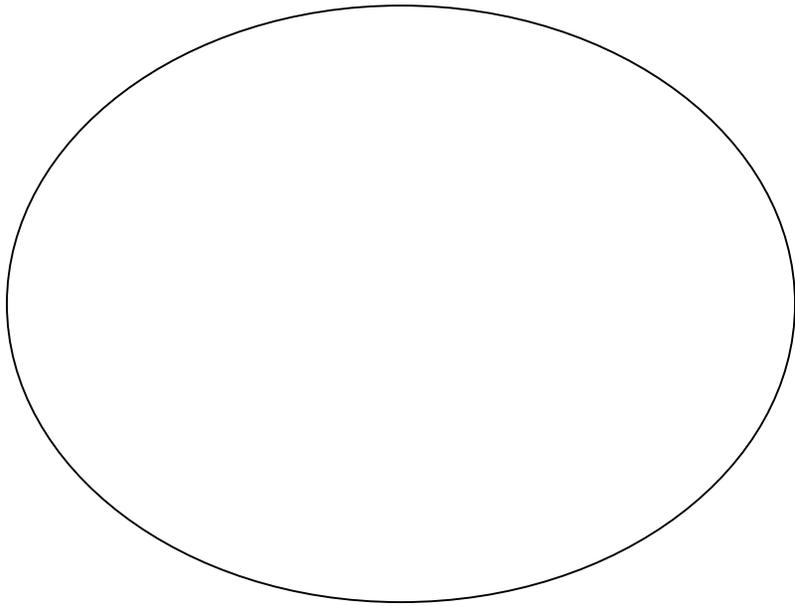
The students will complete the Assessment Activity (SR14). They will apply their knowledge of tally charts, scale, line plot, and probability by analyzing and interpreting 2 students' results from the Mardi Gras Carnival games. They will complete a tally chart for Alli and interpret Ben's line plot to help them win their games. They will answer questions related to math concepts addressed, and write a paragraph to explain their understanding of these concepts.

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Teacher Resource 1



# Mardi Gras Snack Bar Survey

Directions: The Mardi Gras planning committee needs your help. They do not know what to serve at the snack bar. They would like you to survey your friends to find out the top three choices. You will have 5 minutes to walk around the room and get your data. Record in the space below what your friends say is their top choice. They may choose from the following items:

**Cotton Candy**



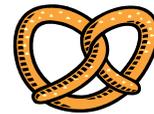
**Popped Corn**



**Ice Cream**



**Soft Pretzel**





# Pizza Party!

Toppings	Number of votes	Total
Pepperoni		
Sausage		
Extra Cheese		
Peppers		
Pineapple		



# Mystery Candy Bags

Follow the steps below with your table group to discover what's inside your mystery candy bag.

1. Open the mystery candy bag, but do NOT peek inside.
2. Pull out one piece of candy without looking.
3. Record the name of the candy on the tally chart under the "Name of Candy" column and add a tally mark in that row.
4. Pull out another piece of candy from the bag.
5. Record its name on the tally chart if it is a different type of candy and add a tally in that row. If it is the same type already chosen, then just add a tally to the chart in that row.
6. Continue picking from the bag until all the candy is gone from the bag.

Type of Candy	Number of Times Picked	Total

## Fabulous Faces

**Directions:** At the Mardi Gras Carnival, many students are getting their faces painted! They can choose a mask, a feather, or a sun. Read the story and complete the tally chart to determine how many students chose each picture.



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Mark and Cindy were the first students to arrive at the face-painting stand at the Carnival. Mark chose a blue mask and Cindy chose a sun. Sara and Mary also each chose a sun for their faces. Sam decided that he wanted a feather, but David chose a mask for himself. Jack and his 2 sisters thought the suns looked nice, so they all got a sun painted on their faces. The last people in line were Jill and Jen. Jill chose a mask and Jen chose a sun. All of the students left the carnival with fabulous faces!

Picture Choices	Number Chosen	Total
Mask		
Feather		
Sun		

\*\*On your own, write a paragraph about how tally marks are useful for collecting data. Use your results from "Fabulous Faces" in your paragraph. Be sure to use both words and numbers in your paragraph.

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## How Halloween is Celebrated



## How Valentine's Day is Celebrated



How Fourth of July  
is Celebrated



## How Thanksgiving is Celebrated



### Bears in the Bayou

**Directions:** How many bears can you hold at one time? Follow the directions and then record your amounts in the tally chart.

1. Without looking into the bag, use your right hand to pull out one handful of bears.
2. In the tally chart at the bottom of this page, record a tally mark next to the correct number.
3. Put the bears back into the bag.
4. Using your left hand, pull out another handful of bears. Record that number in the tally chart.
5. Continue these steps until each person in the group has pulled out 2 handfuls of bears. Add your tally marks to find the totals.



Number of Bears	Tally Marks	Total
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

What was the least amount of bears you could hold? \_\_\_\_\_

What was the greatest amount of bears you could hold? \_\_\_\_\_



## BEARS IN THE BAYOU

Number of Bears	Tally Marks	Total
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Highest Number: \_\_\_\_\_

Lowest Number: \_\_\_\_\_

Range:

### Bead Bonanza

The Mardi Gras Planning Committee needs to make hundreds of bead necklaces for the Carnival. The leader of the committee, Mrs. Beadly, wants to hire the quickest bead maker she can find.



**Directions:**

1. You will be working in pairs. The first person will be the timer while the second person creates a necklace.
2. Each necklace needs to have 5 purple beads, 5 green beads, and 5 gold beads. You can put them on the string in any order.
3. After putting the beads on the string, you must tie the string in a bow.
4. Once this has been completed, the timer must put a tally mark in the correct column in the chart at the bottom of the paper.
5. Switch roles and follow the directions from the beginning until each person has made 2 necklaces.

How long do you think it will take you to make one necklace?

❖ My prediction: \_\_\_\_\_ seconds

Time	Tally Marks	Total
Less than 15 seconds		
16-30 seconds		
31-45 seconds		
46-60 seconds		
61-75 seconds		
76-90 seconds		
91-105 seconds		
Greater than 105 seconds		

What was the least amount of time it took to make a necklace? \_\_\_\_\_

What was the greatest amount of time it took to make a necklace? \_\_\_\_\_

## Bead Bonanza Class Results

Time	Tally Marks	Total
Less than 15 seconds		
16-30 seconds		
31-45 seconds		
46-60 seconds		
61-75 seconds		
76-90 seconds		
91-105 seconds		
Greater than 105 seconds		

Least amount of time:

Greatest amount of time:

Range:



## Pick Me Mrs. Beadly!

**Directions:** Using writing paper, write a letter to Mrs. Beadly explaining why you should or should not be chosen to make the bead necklaces for the carnival. Use information from the tally chart to justify your thinking. Be sure to use words and numbers in your letter.



### Bountiful Beads

The Mardi Gras Planning Committee thinks that more necklaces can be made using an assembly line. Work with your group to make 4 necklaces. Follow the directions below:



**Directions:**

1. In your groups, choose one person to put on the purple beads, one to add on the green beads, one to add on the gold beads, and another person to tie the string in a bow. The second person in the group will be the timer.
2. Remember that each necklace needs to have 5 purple beads, 5 green beads, and 5 gold beads. You can put them on the string in any order.
3. After putting the beads on the string, you must tie the string in a bow.
4. Once this has been completed, put a tally mark in the correct column in the chart at the bottom of the paper.
5. Follow these directions from the beginning until the group has made 5 necklaces and each person has had the role of timer.

How long do you think it will take you to make one necklace?

❖ My prediction: \_\_\_\_\_ seconds

Time	Tally Marks	Total
Less than 15 seconds		
16-30 seconds		
31-45 seconds		
46-60 seconds		
61-75 seconds		
76-90 seconds		
91-105 seconds		
Greater than 105 seconds		

What was the least amount of time it took to make a necklace? \_\_\_\_\_

What was the greatest amount of time it took to make a necklace? \_\_\_\_\_

### Bountiful Beads Class Results

Time	Tally Marks	Total
Less than 15 seconds		
16-30 seconds		
31-45 seconds		
46-60 seconds		
61-75 seconds		
76-90 seconds		
91-105 seconds		
Greater than 105 seconds		

Least amount of time:

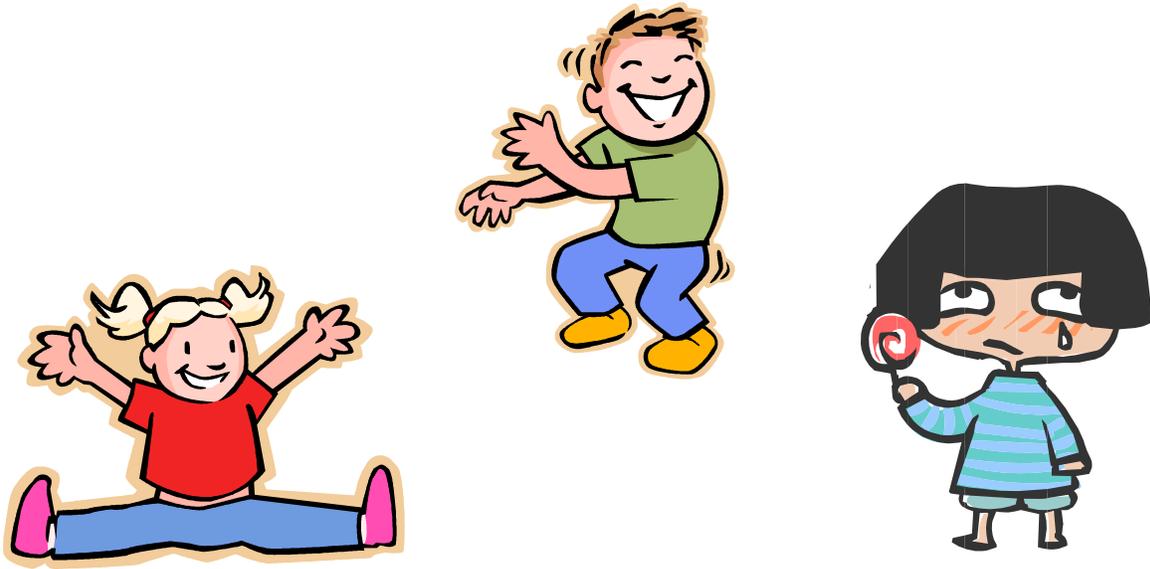
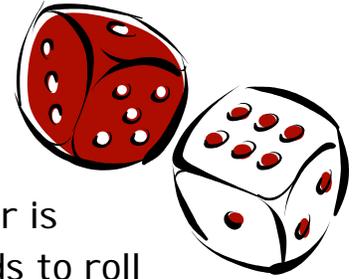
Greatest amount of time:

Range:



### Fair Play

Tony, Lisa, and Jackie are at the Mardi Gras Carnival. They want to play the game Crazy Dice, where each person tries to roll a certain number. Jackie's upset! Her lucky number is 10, but she got stuck with 6, 7, and 8. Tony needs to roll 2, 3, 4, or 5 and lucky Lisa got 9, 10, 11, and 12. Jackie thinks this game is unfair and wants to go home! Let's see how we can cheer her up. What can you tell Jackie to make her feel better?





## Let's Cheer up Jackie!!

**Directions:** Does Jackie have a right to be upset? Is the Crazy Dice game unfair? Follow the directions below to try to cheer her up!

1. Taking turns with your partner, roll the pair of dice and record tally marks in the chart.
2. Each person should roll the dice 10 times.
3. After completing the tally chart, use your results to find the scale.
4. Use your results to create a line plot, using the line at the bottom of the page. Be sure to include a title and a label for what the numbers represent.

Number	Tally Marks	Total
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

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Cheer up Jackie!

**Directions:** Look back at the entry you wrote in your math journal. Using what you now know about line plots and dice, write a letter to Jackie explaining why she should be happy about the numbers she has received. Be sure to use your new math vocabulary and numbers in your letter to Jackie.

A large rectangular area enclosed by a dotted border, containing 20 horizontal lines for writing. The lines are evenly spaced and extend across most of the width of the box. At the bottom right corner, there are two additional horizontal lines that are shorter than the others, likely intended for a signature or name.

### Terrific Tattoos

The Carnival Candy Company has a new prize in every box: a temporary tattoo!! There are 6 different tattoos you can find. Use the dice and follow the directions below to see how many boxes you would have to buy to get all 6 tattoos.

- How many boxes do you predict you would need to buy to collect all 6 tattoos? \_\_\_\_\_

**Directions:**

1. Roll the dice and record the number you roll on the tally chart.
2. Continue to roll and tally until you have rolled all 6 numbers at least once.
3. When finished, record your number on the line plot transparency.

Number	Tally Marks	Total
1		
2		
3		
4		
5		
6		

After the class line plot is completed, answer the following question using words and numbers in your response.

Using the results on the line plot, how many boxes of Carnival Candy do you believe you need to buy in order to collect all 6 tattoos? How does that number differ from your prediction? \_\_\_\_\_

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Mardi Gras Roulette Wheel—Summative Assessment**

**Part I.** *Alli is at the Mardi Gras Carnival and wants to win a prize. She has been watching everyone in line before her at the Roulette Wheel, and keeping track of their results. Below is her tally chart. Use the chart to answer questions 1-4. Fill in the bubble with the correct answer.*

Numbers on Wheel	Tally Marks	Total
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- Fill in the total column of the tally chart.
- How many more times did the wheel land on 4 than on 5?
  - 4 times
  - 5 times
  - 3 times
  - answer not given
- Which number on the wheel is an outlier?
  - 2
  - 6
  - 4
  - 10
- Which number is the mode?
  - 4
  - 7
  - 5
  - 10

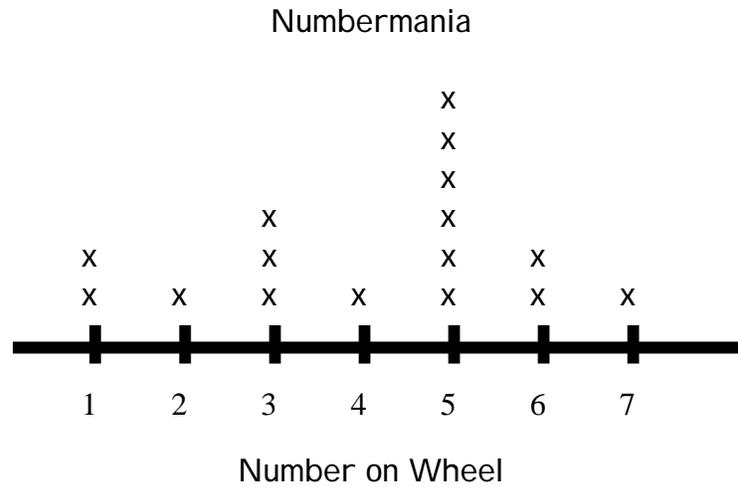


**Part II. Brief Constructed Response**

Ben decided to play a game called Numbermania. Every time he spun the magic Numbermania spinner, he kept track of which number he spun. His data is below.

**Part A**

Look at the line plot below. Use it to answer the following question.



Which number is most likely to be chosen for Numbermania? \_\_\_\_\_

**Part B**

Use what you know about line plots to explain why your answer is correct. Use words and/or numbers in your explanation.

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*Answer Key*

***Mardi Gras Roulette Wheel—Summative Assessment***

*Part I. Alli is at the Mardi Gras Carnival and wants to win a prize. She has been watching everyone in line before her at the Roulette Wheel, and keeping track of their results. Below is her tally chart. Use the chart to answer questions 1-4. Fill in the bubble with the correct answer.*

Numbers on Wheel	Tally Marks	Total
1		2
2		1
3		4
4		15
5		10
6		
7		
8		
9		
10		1

- Fill in the total column of the tally chart.
- How many more times did the wheel land on 4 than on 5?
  - 4 times
  - 5 times**
  - 3 times
  - answer not given
- Which number on the wheel is an outlier?
  - 2
  - 6
  - 4
  - 10**
- Which number is the mode?
  - 4**
  - 7
  - 5
  - 10

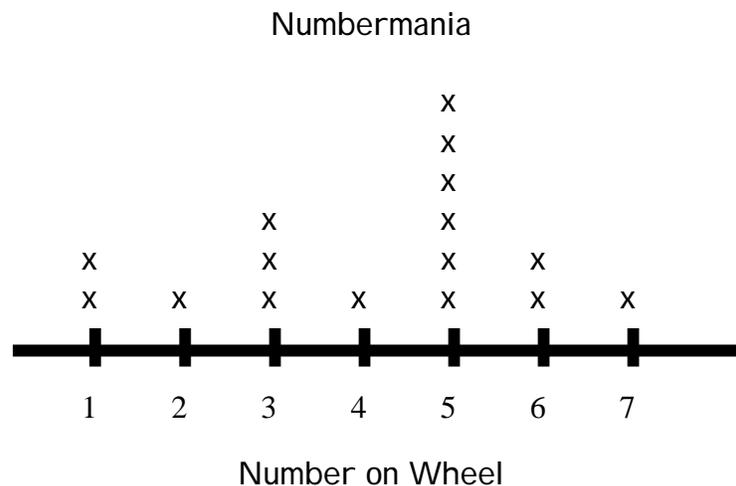


**Part II. Brief Constructed Response**

Ben decided to play a game called Numbermania. Every time he spun the magic Numbermania spinner, he kept track of which number he spun. His data is below.

**Part A**

Look at the line plot below. Use it to answer the following question.



Which number is most likely to be chosen for Numbermania? 5

**Part B**

Use what you know about line plots to explain why your answer is correct. Use words and/or numbers in your explanation.

**Answer:** A good answer shows the student completely understood the problem and how to solve it.

- Used the correct strategy to identify 5 as the answer most likely to be chosen
- Used best math vocabulary, i.e. mode, line plot, most likely, to clearly explain what was done to solve the problem
- The explanation is complete, well organized, and logical
- Applied what is known about math to correctly solve the problem, i.e. comparing numbers, line plots
- Used numbers, words, symbols, pictures, or a combination of them to show how the problem was solved



