Performance Task – Graphing with Classmates

2 Days

Cluster – Represent and interpret data

Standard – 1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Essential Questions

* How can we collect data?
* What information can we get from a graph/chart?
* Why display data in different ways?
* How do tables and charts help up organize our thinking?

Learning Targets

* Organize data in up to three categories
* Represent data in up to three categories
* Answer questions about the total number of data points and how many data points are in each category
* Determine when a category has more or less than another category

Background Knowledge

Prior to administering this performance task, students should have had prior experience and/or instruction with making and reading the three types of graphs: picture graph, bar graph and a tally chart.

Materials

* Recording Sheet
* Pencil
* *Best Vacation Ever* by Stuart Murphy

Task Description, Development and Discussion

Part I (Day 1)

Gather the students in a common space. Read The Best Vacation Ever by Stuart Murphy, or a similar text. Why is the girl using charts in the story? How are these charts going to help her? Discuss how the decisions are made in the story. How can charts help us in the classroom? Tell the students that they are going to complete a class survey and use the data to create a graph.

* As a class brainstorm a list of possible survey questions to collect data on. (Ex. favorite ice cream flavor, favorite pet, best T.V. show, favorite pizza toppings, favorite toy, etc.
* Choose one of the survey questions from the class list.
* As a class choose up to three data collection categories. Brainstorm a list of categories that match the survey question and that students can collect data on. (Ex. chocolate, vanilla, strawberry, etc.) Choose up to three categories.
* After the class has chosen three categories, determine which type of graph they would like to collect and organize their data on. Model setting up the graph by inserting the three categories chosen.
* Model collecting data by selecting 10 individual students amongst the group to ask the

 survey question to.

* As a class, use the data collected to answer the questions on the data analysis sheet.
* Model using the current data to create a different type of graph previously not chosen.
* Model how to use opinion writing to answer the writing link.

Part II (Day 2)

Students will create their own question to ask classmates that have at least three categories to represent.

The students will begin by filling out the title question and three answer choices on their recording sheet.

* Have the students choose the type of graph they will use to collect their data on and set up their graph by inserting the three categories.
* Once all of the students have been checked, they may find classmates to ask their question. Students need to make sure that they are giving 3 answer choices for the students to choose from. When the students have had ample time to collect the data, the teacher will call time.
* Students will then return to their seats to interpret the data they have collected.
* Students will display their data in a different type of graph.
* Students will use opinion writing to tell about the type of graph they choose and why.

Formative Assessment Questions

* Can you explain your chart to the class?
* What are two questions you could ask the class to answer about your graph?
* Explain how charts and tables help organize your thinking?

Differentiation

Extension

* Students may extend the data collection process to 15 different students. Write 4 questions about your data that other students could answer.

Intervention

* Some students may need assistance in identifying a question or answer choices for collecting the data. Offer multiple examples for students to use.

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

Survery Question: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Categories

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
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Pictograph

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
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Bar Graph

Tally Graph

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| --- | --- | --- |
| **Category** | **Tallys** | **Total** |
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|   |  |  |
|  |  |  |

1. How many \_\_\_\_\_\_\_\_\_\_? 6. How many all together?

\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_

1. How many \_\_\_\_\_\_\_\_\_\_?
2. How many \_\_\_\_\_\_\_\_\_\_? 7. Compare two pieces of data.

 There are \_\_\_\_\_\_ more than .

1. Most =

 \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ = \_\_\_\_\_\_\_

1. Least =

8. Using the graphs above, display your data using a different type of graph.

9. Which type of graph did you choose to show your data and why?

|  |  |  |  |
| --- | --- | --- | --- |
| **Objective** | **1** | **2** | **3** |
| Categories | Identifies only 1 category | Identifies only 2 categories | Identifies 3 categories |
| Data | Collects 6 or less data points | Collects 7-9 data points | Collects 10 or more data points |
| Questions | Answers 4 or less correctly | Answers 5-6 correctly | Answers all correct |
| Writing | Wrote Non-sense | Only gave opinion | Gave opinion & reason |

Tally Graph