



CORE Assessment Module Module Overview

Content Area	Mathematics
Title	Colorful Data
Grade Level	Grade 3
Problem Type	Performance Task
Standards for Mathematical Practices	<p>Mathematical Practice 1 (MP1): Make sense of problems and persevere in solving them.</p> <p>Mathematically proficient students:</p> <ul style="list-style-type: none"> • Explain to themselves the meaning of a problem and look for entry points to its solution. • Analyze givens, constraints, relationships, and goals. • Make conjectures about the form and meaning of the solution attempt. • Plan a solution pathway rather than simply jumping into a solution. • Consider analogous problems and try special cases and simpler forms of the original problem to gain insight into the solutions. • Monitor and evaluate their progress and change course if necessary. • Transform algebraic expressions or change the viewing window on their graphing calculator to get information. • Explain correspondences between equations, verbal descriptions, tables, and graphs. • Draw diagrams of important features and relationships, graph data, and search for regularity or trends. • Use concrete objects or pictures to help conceptualize and solve a problem. • Check their answers to problems using a different method. • Ask themselves, “Does this make sense?” • Understand the approaches of others in solving complex problems and identify correspondences between approaches. <p>Mathematical Practice 2 (MP2): Reason abstractly and quantitatively.</p> <p>Mathematically proficient students:</p> <ul style="list-style-type: none"> • Make sense of quantities and their relationships in problem situations. • Bring two complementary abilities to bear on problems involving quantitative relationships: <ul style="list-style-type: none"> ○ Decontextualize—to abstract a given situation and represent it symbolically; and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and ○ Contextualize—to pause as needed during the manipulation process in order to probe into the referents for the symbols involved). • Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, attending to the meaning of quantities (not just how to compute them) and knowing and flexibly using different properties of operations and objects.

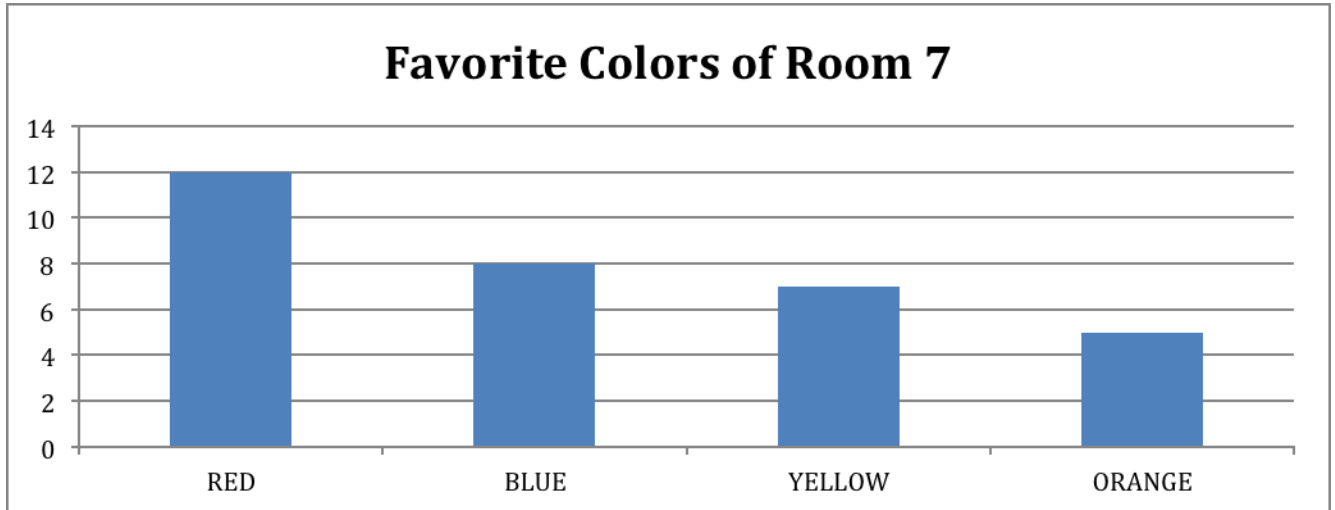
Common Core State Standards	<p>3.OA.8 Solve two-step word problems using the four operations (addition and subtraction).</p> <p>3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i></p>
SBAC Assessment Claims	<p>Claim 2 Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.</p>
Task Overview	<p>In Part 1, students will be shown a bar graph containing data. Students will learn to interpret and manipulate (add and subtract) data. In Part 2, students will interpret and combine data in three given data sets. In addition, they will examine a graph for accuracy and give an argument for why the given graph is correct or incorrect. In Part 3, students will be given a new data set and will be asked to organize the data and accurately draw a scaled bar graph. Then, students will write a paragraph to explain their graph.</p>
Module Components	<p>1) Scoring Guide 2) Performance Task</p>

Colorful Data Scoring Guide

Part	Description	Points	Total Points
Credit for specific aspects of performance should be given as follows:			
1	1. Student correctly identifies the colors and number of votes: Red: 12 students Blue: 8 students Yellow: 7 students Orange: 5 students	½ ½ ½ ½	2
	2. Student adds all the numbers together to find the answer: $12 + 8 + 7 + 5 = 32$ students Student explains how he/she found the results. Partial response or total response Total response	1 1 1-2	3-4
	3. Student give correct answer: 15 more students Student adds red and blue together, then subtracts orange.	1 1	2
2	4. Each correct answer receives one point Red: 30 students Blue: 25 students Yellow: 10 students Orange: 25 students Student shows work for the addition, although arithmetic could be incorrect.	1 1 1 1 1	5
	5. Student gives correct answer: Her graph is incorrect. She increased each color by 10.	1 1	2
3	6. a. Student correctly organizes the data. Student organizes the data in a thoughtful and mathematical way.	1 1	2
	b. Student gets 1 point for each item that appears on the graph. Title Y axis label X axis label Scale shows one bar for every 5 Correct answers graphed: 10 students have brown eyes 5 students have green eyes 7 students have blue eyes	1 1 1 1 1 1 1	7
TOTAL POINTS: (possible points = 24 points)			

Colorful Data

Abigail took a survey in her class to find out which color was each student's favorite. This bar graph shows her results.



Part 1

Answer the following questions to help Abigail organize her data.

- How many students chose each color?
 Red –
 Blue –
 Yellow –
 Orange –
- How many students did Abigail survey? How did you find this answer?
- How many more students liked Red and Blue than liked Orange? How did you find this answer?

Part 2

Abigail continued surveying the rest of her grade. She needed to update her graph to include the whole third grade. Here is the new information:

Room 7	
Color	Votes
Red	12
Blue	8
Yellow	7
Orange	5

Room 8	
Color	Votes
Red	13
Blue	11
Yellow	2
Orange	6

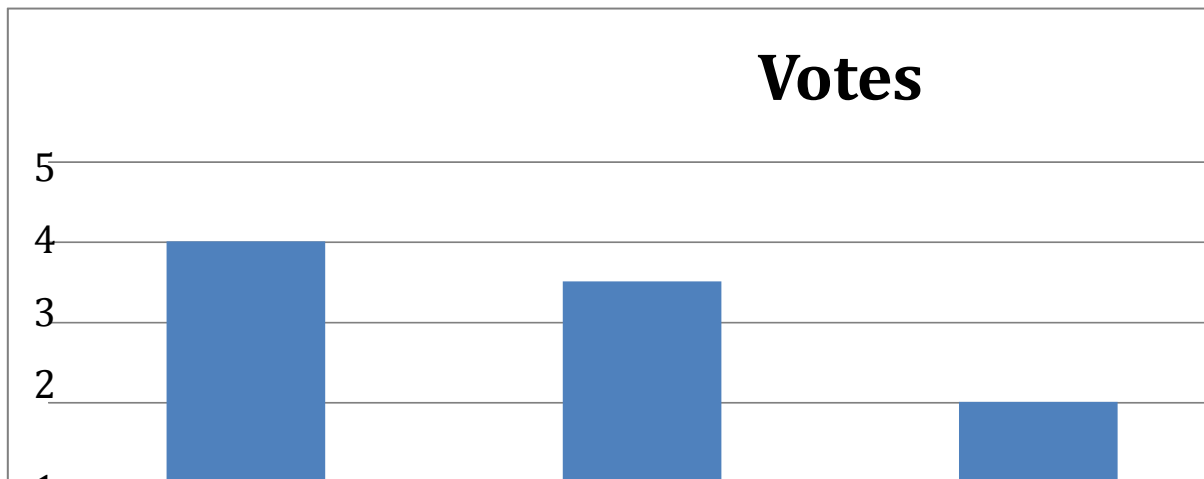
Room 9	
Color	Votes
Red	5
Blue	6
Yellow	1
Orange	14

4. Create one chart that combines all of this data. Show your work below.

Grade 3	
Color	Votes
Red	
Blue	
Yellow	
Orange	

Student Name _____

Abigail made this bar graph to show her new data. Each bar represents 10 votes. Check her graph to see if you agree with her results.



5. Explain to Abigail why her graph is correct or incorrect. Tell her what might be wrong with her graph.

Part 3

Abigail decided to gather some data on the eye colors of the students in her class. The following notes show her results:

Brandi: green
Tony: brown
Julie: brown
Nick: blue
Sara: green
Gary: brown
Katie: blue
Brody: green

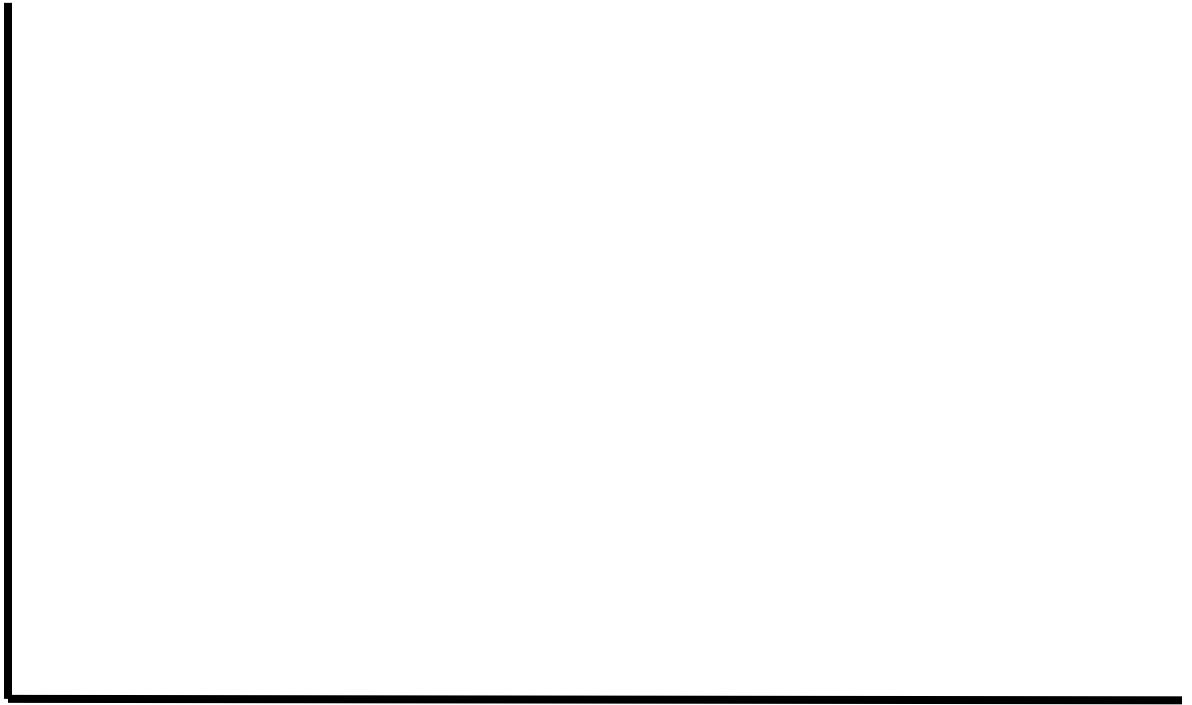
Miguel: brown
Dakota: blue
Ashanti: brown
Harmon: brown
Anthony: brown
Jeriah: blue
Alyssa: green
Nhan: brown

Jacob: brown
Macey: blue
Eric: blue
Shannon: green
Emily: blue
Lauren: brown

6. a. Use the space below to organize this information.

Student Name _____

b. Create a bar graph that represents this new data. Be sure to label your graph. Design your graph so that each square represents



c. Write a paragraph explaining your graph.