

CORE Assessment Module

Module Overview

Content Area	Mathematics
Title	John’s Trip to Disneyland
Grade Level	Grade 5
Problem Type	Performance Task
Standards for Mathematical Practice	<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). <p>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.</p>
Common Core State Standards	<p>5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad+bc)/bd$.)</i></p> <p>5.NF.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</i></p>
SBAC Assessment Claims	Claim 2: Problem Solving —Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.
Task Overview	In Part 1, students will solve some constructed response questions where they must add and subtract fractions with unlike denominators. In Part 2, students will estimate whether or not John has enough gas to reach a further destination and explain in a text message to John their reasoning and conclusion. In Part 3, students will decide how to divide their time (represented as fractions) between the different attractions at Disneyland. They will be provided with two given times, and will be expected to come up with at least two additional fractions so that the sum of their fractional times equal 1 whole.
Module Components	1) Scoring Guide 2) Task

John's Trip to Disneyland Scoring Guide

Part	Description	Points	Total Points
Credit for specific aspects of performance should be given as follows:			
1	1. Student gives correct answer: $\frac{5}{8}$ of a tank remain Student shows work (This may include a correct process, but incorrect arithmetic.)	1 1	2
	2. Student gives correct answer: 19/24 gallons of gas were used Student shows work (This may include a correct process of showing common denominators, but incorrect arithmetic).	1 1	2
	3. Responses should include at least one “look-for” phrases for each question: <ul style="list-style-type: none"> • In question 1, I had to subtract the gas used (fraction/part) from the full tank of gas (1-whole). • In question 1, I subtracted $\frac{3}{8}$ from 1 or $\frac{8}{8}$. • In question 1, I had to make one whole tank of gas into a fraction ($\frac{8}{8}$). • In question 2, I had to add the three fractions together. • In question 2, I had to change the fractions to have common denominators in order to add them. 	1 1	2
2	4. Student shows work. Should show estimation of how much gas it will take to get from Los Angeles to San Diego ($\frac{6}{24}$) and compare it to the remaining gas ($\frac{5}{24}$). Response should include an explanation of how student’s conclusion was reached: John did not have enough gas to drive to San Diego because the distance would take more than $\frac{1}{4}$ of a tank of gas. John does not have that much gas. (Give credit if response correlates with the answer to part 1.)	1 1	2
3	5. Answers will vary, but all fractions will add up to one whole: $\frac{1}{4} + \frac{1}{6} + \frac{1}{4} + \frac{1}{3}$. Response should include work with common denominators. Student shows work for equivalence: $\frac{2}{12} + \frac{3}{12} + \frac{3}{12} + \frac{4}{12}$ Student creates a schedule or a possible itinerary for the day.	1 1 1	3
4	6. Student gives correct answer: $\frac{29}{24}$ (Student should use a common denominator to add fractions.) Response should include an explanation of how student’s conclusion was reached: Mary’s schedule did not work because it was over one whole. 7. Students creates a new schedule and fractions add up to one whole.	1 1 1	3
TOTAL POINTS: (possible points = 14 points)			

John's Trip to Disneyland

Part 1

John is planning a trip to Disneyland in Los Angeles, CA. He is leaving his house in Sacramento with a full tank of gas. The table below shows how much gas he will use along the way.

Depart	Arrive	Miles	Gas Used
Sacramento	Fresno	172 miles	3/8 tank
Fresno	Bakersfield	97 miles	1/6 tank
Bakersfield	Los Angeles (Disneyland)	116 miles	1/4 tank
Los Angeles (Disneyland)	San Diego	134 miles	?



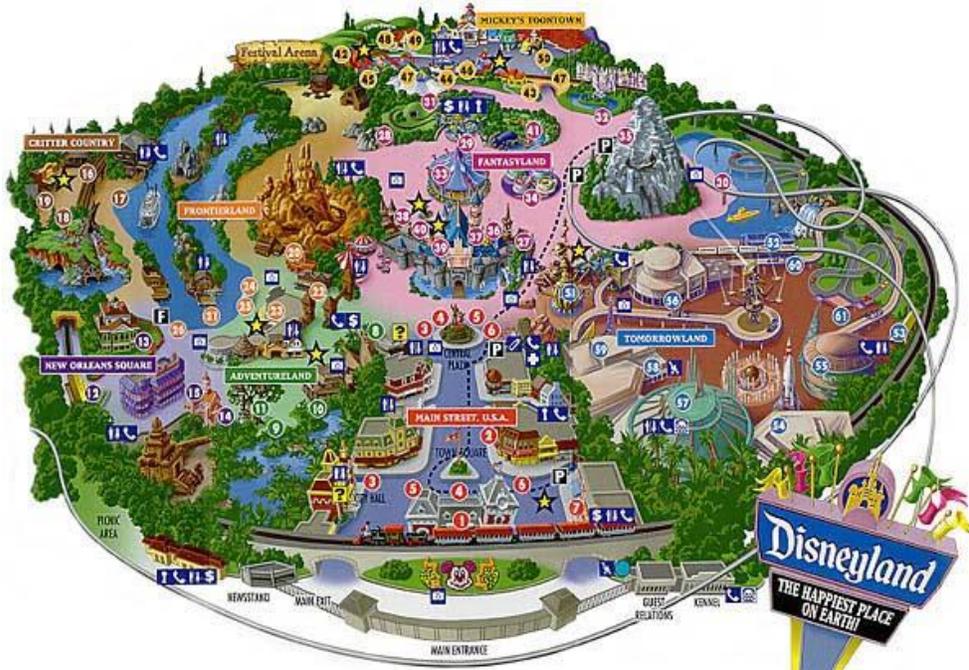
1. How much gas will John have in the tank when he arrives in Fresno? Show your work, include a picture or equation/s.

2. How much gas did he use to arrive at Disneyland? Show your work, include a picture or equation/s.

3. Explain the differences in solving questions 1 and 2.

Part 2

4. Mary heard John was in Southern California and invited him to come visit her in San Diego. John texts you and wants advice on whether he can make it to San Diego without stopping to fill up his gas tank. Refer to the table in Part 1 to determine if this is possible. Write your response to John below. Use drawings or equations to justify your answer.



Part 3

5. John is spending the whole day at Disneyland. He wants to visit as many attractions as possible. He wants to spend $\frac{1}{4}$ of the time at Adventureland and $\frac{1}{6}$ of the time at Mickey's Toontown. Write a possible schedule including at least two more attractions that John could visit filling his entire day. Explain how you got this schedule with words, numbers, or drawings.

Attraction Sites	
Adventureland	$\frac{1}{4}$ Main Street, USA
Critter Country	Mickey's Toontown $\frac{1}{6}$
Fantasyland	New Orleans Square
Frontierland	Tomorrowland

Part 4

6. Mary decided to join John in Disneyland. She already preplanned the schedule for the day. John told Mary her schedule is not possible. Is John correct? Explain your reasoning.

Mary's Schedule for Disneyland			
Adventureland	1/8	Main Street, USA	1/8
Critter Country	1/3	Mickey's Toontown	1/4
Fantasyland	1/8	New Orleans Square	0
Frontierland	1/4	Tomorrowland	0

Student Name _____

7. John and Mary want to create a schedule together. Create a possible schedule for the day.

John & Mary's Revised Schedule for Disneyland	
Adventureland	Main Street, USA
Critter Country	Mickey's Toontown
Fantasyland	New Orleans Square
Frontierland	Tomorrowland