Grade 6 Performance Task

Taking a Field Trip

1. Classroom Activity
2. Student Task
3. Task Specifications
4. Scoring Rubric

Grade 6 Performance Task

Classroom Activity

Note:

Since performance tasks span different parts of the assessment system (summative, interim, and as part of the digital library of resources), here are some suggestions for turning "Taking a Field Trip" into a rich, classroom-based learning task:

- Change the information to reflect locations that are within driving distance of your school.
- Ask students to collect the necessary information to inform the important variables.
    - How far is each location?
    - How many does a bus hold? What is the cost?
    - How much will we have to pay to enter? Are teachers and other adults free?
- Collect student data on preferences for these locations similar to the provided data in the task.

Setting the Context

Teacher: "Today, we are going to complete a task about planning a field trip."

Teacher asks: "Have you ever been on a field trip with your school or a youth group? Or perhaps a trip to an interesting place with your family?" [For example, a museum or an aquarium, a natural park or an amusement park, a zoo, etc.]

Teacher: "Think back to the last time you went on a field trip with your school or on a trip with your family. What were the things that you liked best about the field trip? If you have not been on a field trip, what are some of the things you think would be fun about going someplace with your school class or your family?" [Teacher: Ask the class for volunteer responses or do a 2-minute pair share and then ask students to share some of their ideas.] For example:

- Being with friends
- Being with family
- Learning something new
- Seeing new places
- Getting out of school

Teacher asks: "What are some of the places you think you would like to go on a field trip?"

[Teacher: Record students' responses on the board or ask one or more students to help record the list on the board or an overhead (whatever is the tool of choice in that classroom) while you are managing the discussion.]

Grade 6 Performance Task

Modeling a Process

After writing the list of places on the board or overhead, Teacher asks: "Let's assume our class is going on a field trip. Looking at this list, I would like to know for each of you, what would be your first choice for a place to go and what would be your second choice. You can vote two times. As I call out each of these possible places to go on a field trip, I'll ask you to raise your hand if it is your first choice."

[Teacher: Show the chart below on the overhead or chalkboard]

Teacher: "Then I'll ask again for you to raise your hand if it is your second choice." [Teacher: Ask for first and second choices for each destination and record (or ask a student to record) the first and second choices.]

Teacher: "I'm curious about the things that we might base our decision on. Let's talk about the top choices here. What are some of the reasons you voted for particular destinations? We call those things 'criteria' for making a decision."

[For each of the top 2 or 3 choices, ask students why they voted for that choice.] Teacher: "What did you particularly like about that destination?" [Teacher: Record reasons on a separate list.]

Teacher: "There are other things we might need to consider in taking a field trip. What do you think some of the other things are that the school and the students and parents might need to consider?" [Let students brainstorm—teacher can add these to the list. Issues like proximity, safety, and costs may come up. If costs don't come up, the teacher will introduce it.]

Teacher: "Among the things we have to think about is how much it costs. We may need to do fund-raising to afford to go on a field trip. What will we have to pay for? [Take suggestions if there are some.] If not mentioned, the teacher should include: "We will have to pay for the cost of getting to the destination and the cost of admission, if there is one.

Teacher says: "There are many ways to make decisions about where we would go on a field trip based on the information we have talked about. This will be part of the thinking you will need to do to complete the Taking a Field Trip task."

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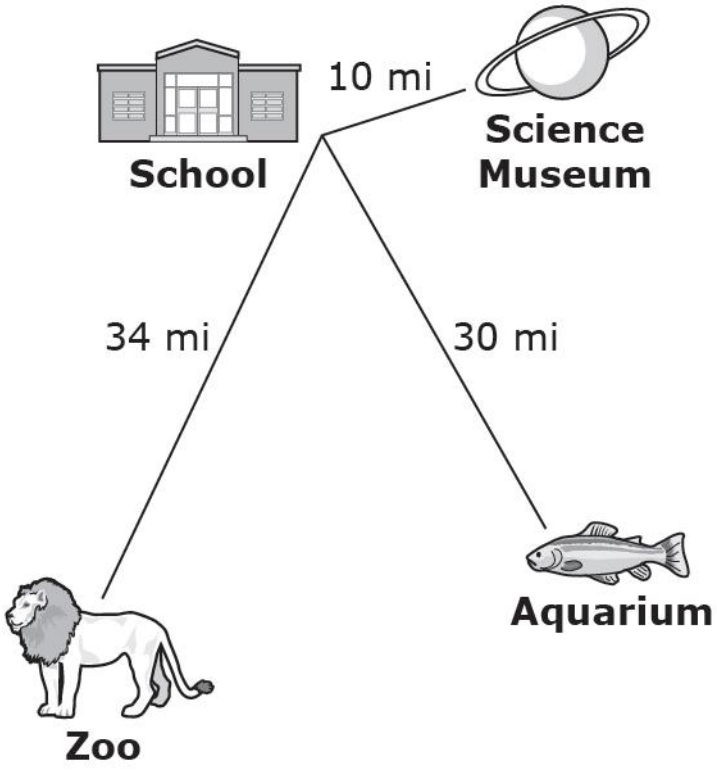
Student Task

Your class and your teacher are going on a field trip. There are three possible choices for the field trip: an aquarium, a science museum, or a zoo. Your teacher asked students to write down their first and second choices. In this task, you will determine where the class should go on the field trip based on the survey results and the cost per student.

This is a map of your school and the three different field trip locations.



Grade 6 Performance Task

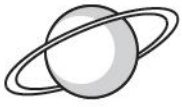
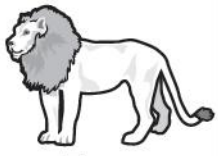
The class voted on which place to visit. These tables show the results.

Name	First Choice	Second Choice
Olivia	Zoo	Science Museum
Grace	Science Museum	Aquarium
Jessica	Aquarium	Zoo
Ruby	Zoo	Science Museum
Emily	Science Museum	Aquarium
Sophie	Aquarium	Zoo
Chloe	Aquarium	Science Museum
Lucy	Aquarium	Science Museum
Lily	Science Museum	Aquarium
Ellie	Science Museum	Aquarium
Ella	Zoo	Science Museum
Charlotte	Science Museum	Aquarium
Katie	Science Museum	Aquarium
Mia	Zoo	Science Museum
Hannah	Zoo	Science Museum

Name	First Choice	Second Choice
Jack	Aquarium	Zoo
Thomas	Zoo	Aquarium
Joshua	Zoo	Aquarium
Oliver	Science Museum	Aquarium
Harry	Aquarium	Zoo
James	Zoo	Science Museum
William	Science Museum	Science Museum
Samuel	Zoo	Aquarium
Daniel	Zoo	Science Museum
Charlie	Aquarium	Aquarium
Benjamin	Science Museum	Zoo
Joseph	Zoo	Aquarium
Callum	Zoo	Aquarium
George	Aquarium	Science Museum
Jake	Science Museum	Aquarium

1. Based only on the results of the class votes, where would you recommend the class go on the field trip? Show your work or explain how you found your answer.

Here are some more facts about the trip.

	 Aquarium	 Science Museum	 Zoo
Distance from School (one way)	30 miles	10 miles	34 miles
Bus Charge	$6 per mile	$6 per mile	$6 per mile
Entrance fee	$6 per person	$10 per person	$2.50 per person

- The teacher and parent helpers do not pay an entrance fee.
- There are 30 students in the class.
- Only 1 bus is needed.
- The bus charge is for the entire busload of students (not for each student).
- Each student will pay the same amount.
- The school fund will pay the first $200 of the trip.

2. Now we will think about the costs of the trip. How much will each student pay to go on each trip? Show your work or explain how you found your answer.

3. Daniel thinks that it will cost less to go to the zoo because the entrance fee is only $2.50 per person. Explain why you agree or disagree with Daniel's thinking.

4. Write a short note to your teacher stating where you think the class should go on its field trip, based on how you would evaluate all the different factors, including student votes, costs, distance, and what you think would be fun.

Grade 6 Performance Task

Task Specifications

Item Id:	MAT.6.FIELDTRIP.PT
Title:	Taking a Field Trip
Grade:	6
Content Domain(s):	Ratios and Proportional Relationships
Assessment Target(S):	Claim 2, Target A: Apply mathematics to solve problems arising in everyday life, society, and the workplace. Claim 2, Target C: Interpret results in the context of a situation. Claim 2, Target D: Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). Claim 3, Target C: State logical assumptions being used. Claim 3, Target F: Base arguments on concrete referents such as objects, drawings, diagrams, and actions. Claim 4, Target D: Interpret results in the context of a situation.
Score Points:	See Scoring Rubric
Task Purpose:	The purpose of this task is to assess students' ability to use mathematics to make a decision based on understanding of proportional reasoning, including application of unit rates.

Grade 6 Performance Task

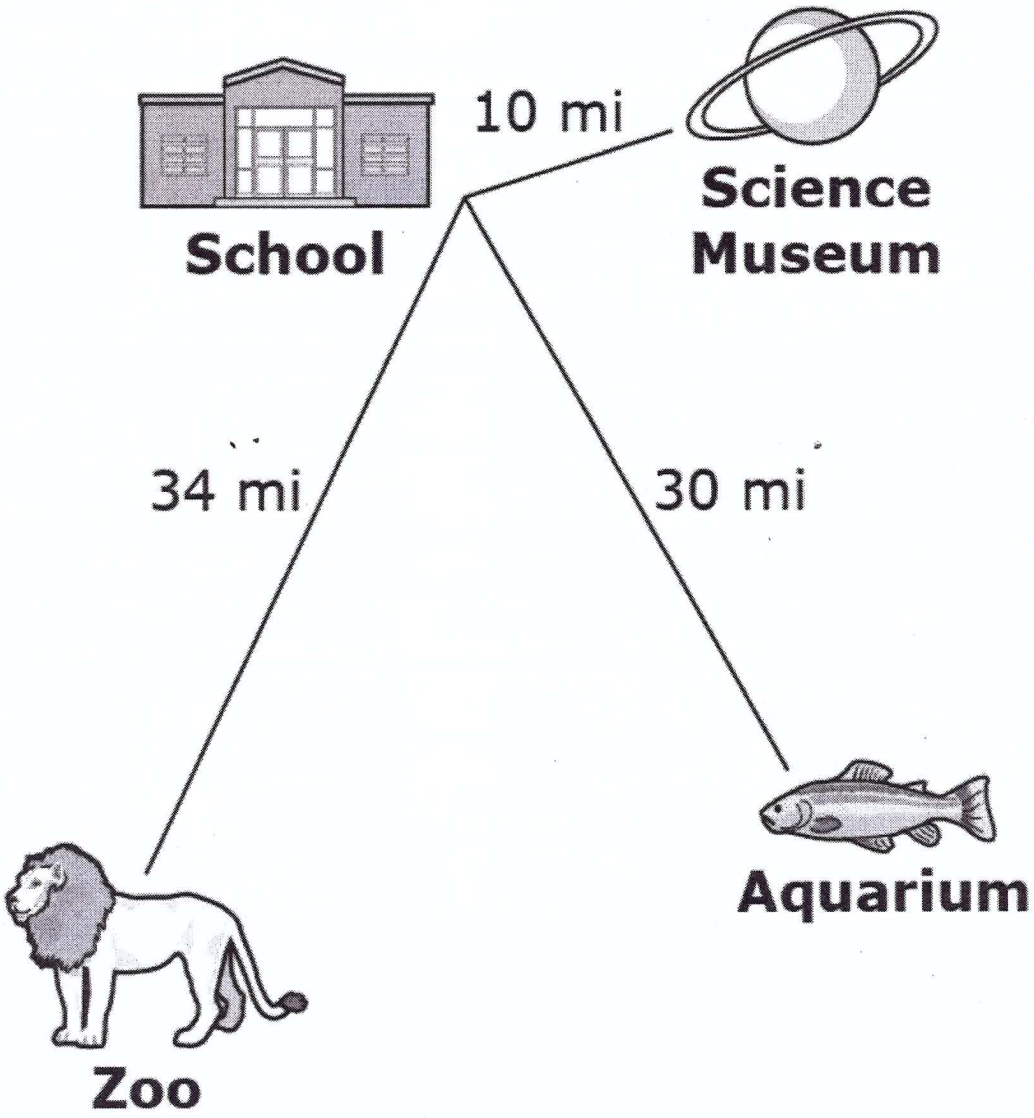
Scoring Rubric

Scoring Criteria for Field Trip Task

Scorable Parts	Points	Claims
1. Based only on the results of the class votes, where would you recommend the class go on the field trip? Show your work or explain how you found your answer.	0–1 Point Full credit for correctly answering "Zoo" based on total 1st place votes OR correctly answering "Aquarium" based on total 1st and 2nd place votes OR correctly answering "Science Museum" based on a weighted total for votes. Accept other valid responses.	Contributes evidence to Claim 3, Communicating Reasoning
2. Now we will think about the costs of the trip. How much will each student pay to go on each trip? Show your work or explain how you found your answer.	0–4 Points Full credit for total cost per destination calculated, award 1 point. Total distance per destination calculated, award 1 point. Cost per student per destination calculated, award 1 point. Final answer expressed in correct units, award 1 point. For minor errors (omitting roundtrip mileage, school fund) deduct 1 point for this section.	Contributes evidence to Claim 2, Problem-solving
3. Daniel thinks that it will cost less to go to the zoo because the entrance fee is only $2.50 per person. Explain why you agree or disagree with Daniel's thinking.	0–1 Point Full credit for using the calculations in the response above; the student would disagree with Daniel and make the argument that the Zoo option is $2.10 more than the Science Museum option. Full credit for correct reasoning based on incorrect #2.	Contributes evidence to Claim 4, Modeling

4. Write a short note to your teacher stating where you think the class should go on its field trip, based on how you would evaluate all the different factors, including student votes, costs, distance, and what you think would be fun.	0–1 Point Full credit for a note that includes a recommendation based on reasoning that includes votes, costs, distance, and personal opinion.	Contributes evidence to Claim 3, Communicating Reasoning

Sample 1



In this task, Now you will determine where the class should go on the field trip based on the survey results and the cost per student.

1. Based only on the results of the class votes, where would you recommend the class go on the field trip?

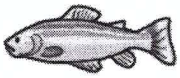
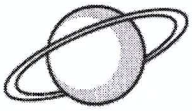
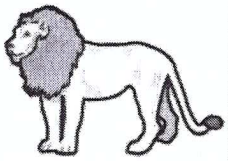
Show your work or explain how you found your answer.

Zoo 1st= 12
Zoo 2nd= 5
Science Museum 1st=10
Science Museum 2nd=11
Aquarium 1st= 8
Aquarium 2nd= 14
I would recommend the zoo. I found my answer by looking at how many kids wanted to go to each place for their first choice, and chose the highest number.

(1)

Q2.

Here are some more facts about the trip.

	 **Aquarium**	 **Science Museum**	 **Zoo**
Distance from School (one way)	30 miles	10 miles	34 miles
Bus Charge	$6 per mile	$6 per mile	$6 per mile
Entrance fee	$6 per person	$10 per person	$2.50 per person

- The teacher and parent helpers do not pay an entrance fee.
- There are 30 students in the class.
- Only 1 bus is needed.
- The bus charge is for the entire busload of students (not for each student).
- Each student will pay the same amount.
- The school fund will pay the first $200 of the trip.

Now we will think about the costs of the trip. How much will each student pay to go on each trip?

Show your work or explain how you found your answer.

$\frac{6(60)-6(30)-200}{30}$

$\frac{360+180-200}{30}$

$\frac{360-20}{30}$

$\frac{340}{30} = \$4.50$

$\frac{6(20)+10(30)-200}{30}$

$\frac{120+300-200}{30}$

$\frac{120+100}{30}$

$\frac{220}{30}$

$\$7.33$

$\frac{6((68)+2.5(30)-200}{30}$

$\frac{408+75-200}{30}$

$\frac{408-125}{30}$

$\frac{283}{30} = \$9.43$

$\frac{408}{-125}$

283

Q3.

Daniel thinks that it will cost less to go to the zoo because the entrance fee is only $2.50 per person.
Explain why you agree or disagree with Daniel's thinking.

I disagree, because it costs $9.43 to go to the zoo, compared to $4.50 and $7.33.

Q4.

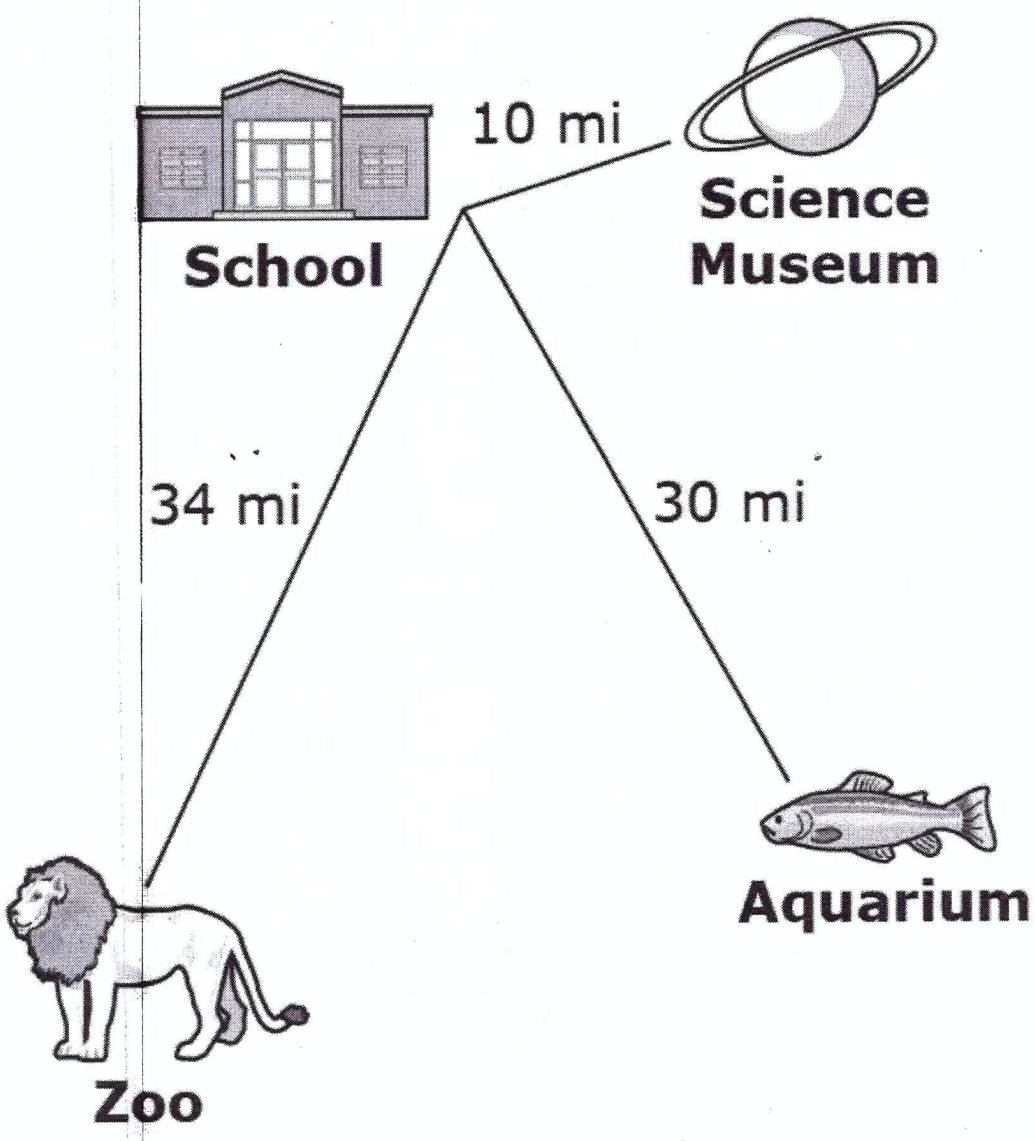
Write a short note to your teacher stating where you think the class should go on its field trip, basedon how you would evaluate all the different factors, including student votes, costs, distance, and what you think would be fun.

Dear Mr/Mrs. ____,
I think we should go to the science museum. This is because it is only 10 miles away, and 21 students put it as their 1st or 2nd choice. It is also only $7.33 per student and would be very enjoyable for the whole class.

From,
Student ____

Sample 2

(2)



In this task, Now you will determine where the class should go on the field trip based on the survey results and the cost per student.

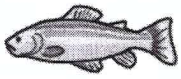
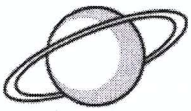
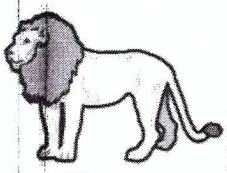
1. Based only on the results of the class votes, where would you recommend the class go on the field trip?

Show your work or explain how you found your answer.

I would reconmend the zoo because it had the ~~first~~ most first-choice votes,

Q2.

Here are some more facts about the trip.

	 **Aquarium**	 **Science Museum**	 **Zoo**
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- Each student will pay the same amount.
- The school fund will pay the first $200 of the trip.

Now we will think about the costs of the trip. How much will each student pay to go on each trip?

Show your work or explain how you found your answer.

A: $\frac{30 \cdot 6 \cdot 2}{30} + 6$ $12+6=\$18$ $\$11.33$

$(30 \cdot 6 \cdot 2) + 6(30)$ $360+180=540-200=340$

$\frac{\$18}{\times 30}$ $\frac{}{540}$ $540-200=\$340$ $\frac{\$340}{30}=$

S: $(10 \cdot 6 \cdot 2) + 10(30)$ $120+300$ $420-200=220$ $\$7.33$

Z: $(34 \cdot 6 \cdot 2) + 2.5(30)$ $408+75$ $483-200$ 283 $\$9.43$

Q3.

$\frac{34}{\times 12}$ $\frac{}{68}$ $+340$

$30\overline{)13.000}$ 1049

Daniel thinks that it will cost less to go to the zoo because the entrance fee is only $2.50 per person.
Explain why you agree or disagree with Daniel's thinking.

I dissagree because overall, the science museum costs less per person.

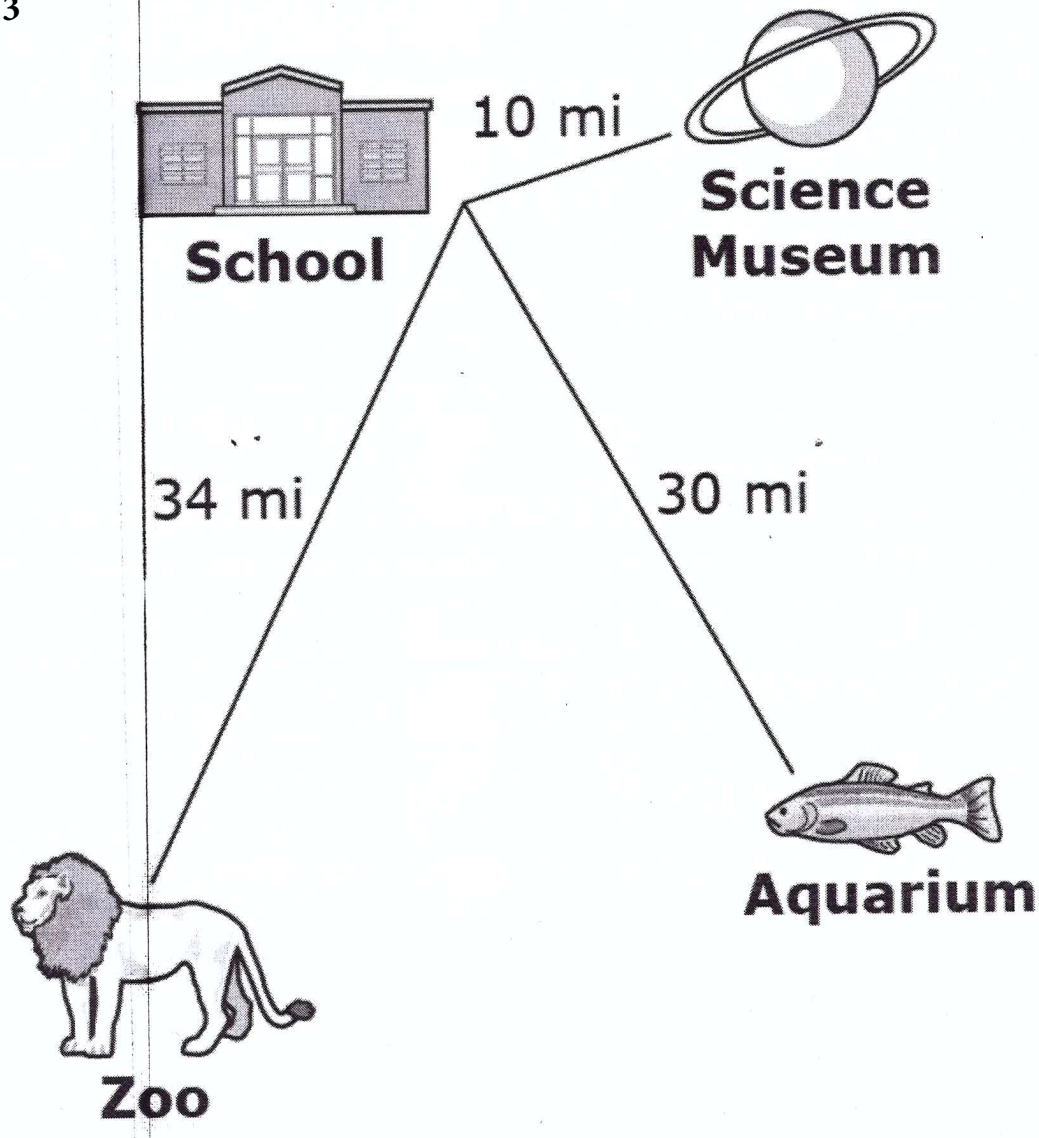
Q4.

Write a short note to your teacher stating where you think the class should go on its field trip, basedon how you would evaluate all the different factors, including student votes, costs, distance, and what you think would be fun.

Dear Mrs. ____,
Based on the class's first votes and the fact that it's the second least expensive, I think we should go to the zoo.
From, ____

(3)

Sample 3



In this task, Now you will determine where the class should go on the field trip based on the survey results and the cost per student.

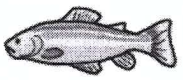
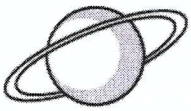
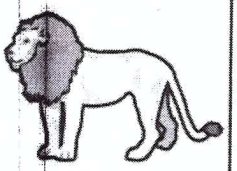
1. Based only on the results of the class votes, where would you recommend the class go on the field trip?

Show your work or explain how you found your answer.

They should go to the zoo as it was the most voted #1 choice and it is the cheapest option out of the three choices

Q2.

Here are some more facts about the trip.

	 **Aquarium**	 **Science Museum**	 **Zoo**
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Now we will think about the costs of the trip. How much will each student pay to go on each trip?

Show your work or explain how you found your answer.

A
30 × 6 = 180
30 × 6 = 180
$360

SM
60
+300
$360

30
× 10
300

Zoo
34
× 6
204
+ 75
$279 → $70 school pays

2.50
× 30
75.00

$160 school pays

$160 School pays

Q3.

Daniel thinks that it will cost less to go to the zoo because the entrance fee is only $2.50 per person.
Explain why you agree or disagree with Daniel's thinking.

I agree because the lower entrance fee is so much less that even the 34 miles can't bring up the price to the other prices.

Q4.
Write a short note to your teacher stating where you think the class should go on its field trip, basedon how you would evaluate all the different factors, including student votes, costs, distance, and what you think would be fun.

Dear Ms. Teacher
I feel we should go to the zoo as even though we will travel farther than the other options, the entrance fee will be so much lower that the school doesn't have to pay such a high amt as the other options.

Task Analysis Tool

Understanding Language Initiative, Stanford University

Name of Task: Taking a Field Trip **Grade Level: 6th** **Subject: Math**

Task Analysis Step	Guiding Questions and Resources	Analysis
Step 1: Examine and Identify Appropriate Instructional Task	**Guiding Questions:** Is/does this task: ☐ Clear in its expectations? ☐ Grade-level appropriate? ☐ Aligned to the standards? ☐ Require students to use language *and* analytical skills to demonstrate their content knowledge?	Is this an appropriate task for analysis? Why? Yes, because it is a grade-level math task, aligned to grade-level standards, that requires students to use language and analytical skills to justify and explain their reasoning.

Step 2: Identify Task Demands

Guiding Questions:

- Write down everything that students need to demonstrate, know, or do in order to successfully complete this task.
- To do this, read (or watch) the task instructions.

Resources:

- For **Content Knowledge**: Common Core State Standards, Next Generation Science Standards, or other relevant standards (e.g., district, state, etc.)
- For **Analytical Skills**: Depth of Knowledge (DOK) Levels (Find in Resources)
- For **Language**: Language Functions and Forms PDF (Find in Resources)

What do students need to do and know in terms of…?

Content Knowledge	**Analytical Skills**	**Language**
Read a map Read a table Solve real world problems using math Solve multistep problems Identify important quantities Use addition Use multiplication Use proportional reasoning, including application of unit rates Relevant Content Standards: CCSS Math 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. 6.RP.A.3.B Solve unit rate problems including those involving unit pricing and constant speed.	Calculate Interpret a graph Interpret a map Interpret results Show your work Compare Develop a logical argument Cite evidence Critique Prove Analyze	Explain in writing how you found your answer Compare Explain why you agree or disagree Develop a logical argument Express argument Support argument with evidence Support argument with reasoning Write a note expressing argument with reasoning Explain interpretation of results Potential vocabulary: Science museum Aquarium Location Entrance fee Bus charge

Step 3: Identify Disciplinary Practice(s)	**Guiding Question:** What disciplinary practice(s) are most relevant to this task? **Resources:** • Core Disciplinary Practices PDF (Find in Resources) • Interactive Correspondence between Practices, Tasks, and Functions PDF (Find in Resources)	What are the relevant disciplinary analytical practices for this task: Math Practice 1: Make sense of problems and persevere in solving them. Math Practice 2: Reason abstractly and quantitatively. Math Practice 3: Construct viable arguments and critique the reasoning of others Math Practice 5: Use appropriate tools strategically. Math Practice 6: Attend to precision.

Step 4: Identify ELP Standard(s)

Guiding Questions:
What English Language Proficiency Standards are reflected in this task?

Which of these ELP standards do you feel comfortable measuring or intend to assess?

Resources:
- The ELP Standards
- Alternative Organization of Standards
- The K-12 Practices Matrix (Find in Resources)

What are the relevant ELP standards for this task? Please include your reasoning behind selecting these standards.

ELP Standard	Your Reasoning
ELP 1	Corresponds to MP.1. This task is a very complicated one to understand, as are the informational textual materials associated with it.
ELP 3	For question #2, students must describe the steps they took to do the calculations. Corresponds to MP.6 in that students must be precise in their explanation.
ELP 4	Corresponds to MP.3, questions #1 and #4 involve making and supporting claims.
ELP 6	Question #3 involves critiquing Daniel's claim
ELP 7	Question #4 requires students to use the format of a "short note" to their teacher, which involves a particular register and audience. Also requires writing using "mathematical language."
ELP 8, 9, 10	There are a lot of complex language demands in this lengthy task, which necessitate understanding of vocabulary, well-organized and accurate writing to effectively communicate precision of mathematical reasoning.

We would feel comfortable addressing and assessing the following standards:

ELP6 - Analyze and critique the arguments of others orally and in writing: In question #3, students are asked specifically to critique a claim and explain their thinking
ELP7 - Adapt language choices to purpose, task, and audience when speaking and writing: In question #4, students must decide how to choose relevant information and compose a letter that is appropriate for informing and persuading their teacher.

Using ELP Standards Level Descriptors (PLDs) to Interpret Student Work

Understanding Language/SCALE, Stanford University
October 2016

Task: Taking a Field Trip **Grade Level: 6**

Step 1	**Examine the Identified ELP Standard(s) and Corresponding Level Descriptors**
Consulting ELP Standards and Level Descriptors	☐ Examine the identified ELP Standard(s) and corresponding level descriptors for the task ☐ If there are many applicable standards, choose one or two that relate to your students' areas of growth. **Notes:** Standards 1, 3, 4, 6, 7, 8, 9, and 10 were identified as during the task analysis as relevant to this task. To narrow it down a bit, focusing on Standards 1, 4, 6 and 9 • Standard 1 - students need to construct meaning from a series of problem statements math word problems • Standard 4 - students need to state a claim about mathematical reasoning and support it • Standard 6- in word problem #2 the students must agree or disagree with a stated conclusion and support their reasoning • Standard 9 – students' response must use sequencing and linking words in their responses to several of the math word problems
Step 2	**Interpret Student Work Using the Standards Level Descriptors**
Using ELP Standards Level Descriptors as rubrics to interpret student work	☐ Do the same standards apply when you examine your students' output? ☐ What level(s) most accurately describe your students' work? ☐ Remember that the interpretation only tells you the level of this specific piece of student work; your students' levels might shift based on different tasks or learning objectives. ☐ Identify patterns (similarities or differences) in your students' work if you are interpreting multiple pieces. **Notes:** In reviewing all 3 student work samples, the identified standards apply to all 3 work samples. The task itself has multiple steps and multiple questions that students must answer, some involving mathematical reasoning and/or computation in addition to requiring students to explain their work or justify their answer with a short narrative response.

	Question 1- All 3 student work samples addressed standard 4 as each student made a recommendation for which place to select for the field trip and used data from the word problem to justify their recommendation Question 2- All 3 student work samples documented that students chose to respond to the question with step by step mathematical computation and none of the students chose to explain their cost estimates. It was a choice to show work or explain their answer. Question 3- All 3 student work samples addressed standard 6 as each student had to either agree or disagree with a problem statement. Students #1 and #2 disagreed but listed different reasons to support their conclusion and cited differing numerical evidence to support their claim. Student #3 agreed and described the logic used to arrive at that conclusion with supporting numerical evidence. Question 4- All 3 student work samples address standard 7 as each student writes a short note to their teacher which requires a specific language register and also requires students to know their "audience". The students also needed the academic language of math in order to make the recommendation to their teacher, using distance, compare and contrasting number of responses, etc. ELP level of each student when considering their performance on each item related to this very complex math task, is summarized below: • Student 1 performed at a level 4 • Student 2 performed at a high level 4 or low level 5 (hard to tell with the short text but uses higher level transition words and wide use of writing mechanics) • Student 3 performed at a level 4
Step 3	**Identify strategies to support student needs**
Identifying instructional supports to improve student learning	☐ Use the identified level (and perhaps the next level) to provide student with formative feedback. ☐ Use the identified patterns in student work to plan for instructional adjustments. ☐ Consult relevant state/district resources for suggested strategies. **Notes:** Some strategies and resources I might use to support this student's language development would include Jeff Zwiers Math Constructive Conversation Skills poster focusing on the Explain and Support, and Multiple Methods for Solving boxes. Using Zwier's Stronger and Clearer Each Time could help students with the requirement to explain their answers. Additionally, Zwiers' Pro-Con Improv or Argument & Evidence scale might be useful in question #3 where students had to evaluate Daniels claim and agree or disagree and provide evidence to support their reasoning.