

Title: A Trip to Colonial Virginia

Brief Overview:

The students will be responsible for planning an actual two day trip to Colonial Virginia. Working in groups, the children will assign hotel rooms and compute all costs for buses, hotel rooms, meals, and tours, using data given.

Link to Standards:

- **Problem Solving** Students will solve problems in mathematics in a real-life situation, including the use of technology (calculators and computers), in a cooperative atmosphere.
- **Communication** Students will demonstrate the ability to communicate mathematically. They will read, write, and discuss mathematics with language and the signs, symbols, and terms of the discipline.
- **Reasoning** Students will make decisions based on the information given, and will be able to justify their answers and solution process.
- **Connections** Students will demonstrate their ability to connect mathematics topics within the discipline, with other disciplines, and in real-life situations.
- **Number Sense & Numeration** Students will demonstrate the ability to use various forms of numerical expressions and to choose the appropriate operations in solving problems in real-life situations.
- **Estimation** Students will apply estimation strategies to check the reasonableness of their results.
- **Computation** Students will demonstrate the knowledge of addition, subtraction, multiplication and division of whole numbers and decimals, in addition to computation of percentages.
- **Statistics** Students will systematically collect, organize, and describe data.

Grade/Level:

Grades 5 - 8

Duration/Length:

This performance assessment may take as long as five class sessions lasting approximately one hour each.

Prerequisite Knowledge:

Students should have working knowledge of the following skills:

- Finding percentage of a number
- Understanding ratios
- Familiarity with technology (calculator and computer)
- Basic classification
- Friendly letter format

Objectives:

Students will be able to:

- work cooperatively in groups.
- organize given data into a directed format.
- choose the appropriate operation in solving mathematical computations using a calculator.
- synthesize group data into a coherent whole.
- justify verbally and in a written format their results and the process used in arriving at their solutions.

Materials/Resources/Printed Materials:

- Calculators
- Pencils
- Computers
- Student worksheets (Appendix)

Development/Procedures:

- Inform students that they will be responsible for planning a trip to Colonial Virginia.
- Divide students into three groups and give each group the appropriate direction sheet(s).
- Give students time to read directions and divide group tasks. Each group must elect a moderator and recorder.
- Inform students they will have a predetermined amount of time each day to work on assigned tasks in class only.

- Bring all three groups together when tasks have been completed to check and combine results and determine total cost per person for the trip.
- Have each student individually write a letter to the parents telling how much the trip will cost and explaining how the class arrived at the cost.

Performance Assessment:

The students will be assessed using the following rubric with four being the highest and one being the lowest. The teacher will assess each student individually and each student will assess members of their group.

Four

The student worked harmoniously in the group with few conflicts. The student worked independently and rarely needed teacher help. The student contributed his/her fair share to the group. Students in Groups II and III had completely accurate results. Students in Group I followed all the guidelines given and identified the least possible number of rooms and computed complete accurate costs for the rooms. Each parent, student, and teacher was placed in a room. Letters to parents followed the correct format for a friendly letter, and spelling and grammar were extremely accurate. The student explained coherently and accurately the process he/she used for the cost of the trip.

Three

The student worked harmoniously in the group most of the time. The student needed occasional help from the teacher. Students in Groups II and III had answers that were not completely accurate but the processes used were correct and the answers were close to correct. Students in Group I failed to follow one to three of the guidelines and had one to two more rooms than needed. One or two people were not placed in rooms. Cost of rooms was inaccurate but the process was accurate. Letter to parents generally followed correct format for a friendly letter, but had some errors in grammar and spelling. The student's explanation lacked some coherence and was not totally accurate in explaining the process by which he/she arrived at the cost of trip.

Two

The student worked harmoniously some of the time and was sometimes in conflict with other members of the group. The student often required teacher intervention. The students in Groups II and III had answers that were generally inaccurate and the processes used were often inaccurate. Students in Group I failed to follow four to six of the guidelines and had 3 more rooms than required. Three to four people were not placed in rooms. Costs were inaccurate as were most processes to arrive at costs. Letter to parents lacked several elements necessary to the format of a friendly letter and had errors in grammar and spelling. The student's explanation was generally incoherent and inaccurate in describing the process by which he/she arrived at the cost of the trip.

One

The student was often in conflict with other members of the group and contributed very little to the final result. He/she was unable to complete the task without persistent guidance. Students in Groups II and III had inaccurate results and used incorrect processes in attempting to reach their results. Students in Group I identified four or more than the minimum number of rooms needed. More than four people were not placed. Costs were inaccurate as were processes to arrive at costs. Letters to parents did not follow correct format for a friendly letter and contained numerous errors in grammar and spelling. The student was unable to explain coherently how he/she arrived at the cost of the trip.

Extension/Follow Up:

1. After the trip, students can design a T-shirt reflecting acquired knowledge.
2. Students can construct booklets about the trip.
3. Students can map alternate routes to the various locations.
4. Students can compute mileage and fuel cost for the trip.
5. Students can write thank you letters to individuals encountered on the trip.
6. Students can write articles about the trip for school and/or local newspaper.

Authors:

Ronald W. Girton, Jr.
North Smyrna Elementary School
Kent County, DE

Sue Rohrbacher
Burnett Elementary School
New Castle County, DE

Othell L. Hamlett
Harlan Elementary School
New Castle County, DE

Carole J. Wilkinson
Burnett Elementary School
New Castle County, DE

Sample Rooming Arrangement for Ms. R.'s Class

<p>A. <u>Mr. Jones</u> <u>Mrs. Jones</u> Bill Jones Scott Hammond</p> <p>roll-away _____</p>	<p>A. <u>Mr. Darden</u> A. <u>Mrs. Darden</u> Elizabeth Darden Candy Phillips</p> <p>roll-away _____</p>	<p>A. <u>Mr. Starr</u> A. <u>Mrs. Starr</u> Jacob Starr</p> <p>roll-away _____</p>
<p>A. <u>Mrs. Carson</u> Bob Carson A. <u>Mrs. Smith</u> Don Smith</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Kinlow</u> Linda Kinlow Susie Lyons Elaine Simmons</p> <p>roll-away _____</p>	<p>A. <u>Mr. Lyons</u> A. <u>Mr. Newton</u> Bill Newton</p> <p>roll-away _____</p>
<p>A. <u>Mrs. Quest</u> John Quest Christopher Cronwell Jim Williams</p> <p>roll-away _____</p>	<p>A. <u>Mr. Parker</u> Leon Pauli Tom Wilde</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Bergdorf</u> Jenny Bergdorf Sally Parker Liza Penny</p> <p>roll-away _____</p>
<p>A. <u>Ms. R.</u> A. <u>Ms. W.</u></p>	<p>A. <u>Mrs. Ott</u> Melanie Ott Tricia Weiss Lisa Alton</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Moore</u> Jessica Moore Margaret Johnson Helen Stern</p> <p>roll-away _____</p>

Ms. R.'s Rooming List Template

A. _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____
A. _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____
A. _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____

Ms. W.'s Rooming List Template

A. _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____
A. . _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____
A. _____ _____ _____ _____	A. _____ _____ _____ _____	A. _____ _____ _____ _____
roll-away _____	roll-away _____	roll-away _____

Sample Rooming Arrangement for Ms. W.'s Class

<p>A. <u>Mr Holland</u> David Shields Ralph Willard</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Maxwell</u> Joe Maxwell William Brown Matt Parsons</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Malcom</u> Ellen Malcom Evelyn Holland Sheila Fulton</p> <p>roll-away- <u>Karen Coston</u></p>
<p>A. <u>Mrs. Carpenter</u> Ron Carpenter Butch Dobbins Ed Yost</p> <p>roll-away _____</p>	<p>A. <u>Mr. Fulton</u> A. <u>Mr. Korn</u> Eric Korn</p> <p>roll-away _____</p>	<p>A. <u>Mr. Fields</u> A. <u>Mrs. Fields</u> Greg Fields Harold Murray</p> <p>roll-away _____</p>
<p>A. <u>Mrs. Weldin</u> Anne Weldin Joan Thomas Carol Wilson</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Tailor</u> Phyllis Tailor Mary Grasse Peggy Stone</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Haas</u> Peter Haas <u>Mrs. Andrews</u> Michael Andrews</p> <p>roll-away _____</p>
<p>A. <u>Mr. Black</u> Peter Black Walter Lowe</p> <p>roll-away _____</p>	<p>A. <u>Mrs. Black</u> Sarah Sills Jane Corcoran</p> <p>roll-away- Doris Hall</p>	

September 10, 1996

Dear Students,

Two classes in the fifth grade will be making a two day trip to Colonial Virginia from Wilmington, Delaware. We will be traveling by bus and will spend one night in a hotel on the outskirts of Williamsburg, Virginia. Your job is to work in a group to help plan the trip and determine the costs.

You will be given the information you need to determine costs of buses, tours, hotel rooms, and meals. You will also be given the itinerary and other pertinent information regarding such topics as complimentary meals, tours, or rooms and taxes.

One group of students will determine rooming arrangements so that we use the least number of rooms possible and accommodate the special needs and restrictions of rooming arrangements. That group will also need to determine the least possible cost for rooms. A second group will determine the cost of buses and tours for the group, and the third group will calculate the total cost of meals. The total cost of everything will then be divided by the number of people making the trip to determine the amount each person will be required to pay.

Good luck and have fun! Your help is greatly appreciated.

Sincerely,

Ms. R. and Ms. W.

GROUP I

INFORMATION REGARDING HOTEL COSTS AND ROOMING ARRANGEMENT REQUIREMENTS.

Each room in the hotel has two double beds and the cost for each room is \$59 plus 9 ½ % tax. The cost of the room is the same whether we put one, two, three, or four people in a room, so we would like to put four people in each room in order to keep at a minimum the number of rooms we pay for. We may ask for a roll-away bed in one out of every ten rooms we book, if necessary, and put five people in one room. The roll-away bed costs \$9 plus 9 ½ % tax. The hotel gives us one complimentary room for every fifteen rooms we book. That means that if we book thirty rooms, we only pay for twenty-eight.

In order to determine how many rooms we need, you will need the lists of people going on the trip and place them in rooms on the blank rooming sheets that are provided for you. The following are rules you must follow in placing people in rooms:

1. There must be at least one adult in every room.
2. Girls and women should be in the same room.
3. Men and boys should be in the same room.
4. Mothers can be placed in rooms with boys.
5. Husbands and wives should be together with their child, if possible. Another child of the same sex as the couple's child may also be in that room. If necessary, one parent may be placed in a different room with other children of the same sex.
6. Boys and girls may not be in the same room.
7. A parent is not expected to sleep with a child that is not his/her own.
8. If at all possible, students want to be with students in their own homerooms.
9. Ms. R. and Ms. W. will share one room by themselves.

MS. R.'S LIST OF PEOPLE GOING ON THE TRIP

FATHERS

Mr. Jones
Mr. Lyons

Mr. Parker

Mr. Newton

Mr. Darden

Mr. Starr

MOTHERS

Mrs. Jones

Mrs. Smith

Mrs. Quest

Mrs. Kinlow

Mrs. Bergdorf

Mrs. Moore

Mrs. Ott

Mrs. Darden

Mrs. Starr

Mrs. Carson

CHILDREN

Billy Jones
Susie Lyons
Don Smith
Leon Pauli
John Quest
Elaine Simmons
Sally Parker
Linda Kinlow
Liza Penny
Tom Wilde
Christopher Cromwell
Jenny Bergdorf
Jim Williams
Jessica Moore
Bill Newton
Tricia Weiss
Melanie Ott
LisaAlton
Elizabeth Darden
Candy Phillips
Margaret Johnson
Jacob Starr
Scott Hammond
Bob Carson
Helen Stern

MS. W.'S LIST OF PEOPLE GOING ON THE TRIP

FATHERS

Mr. Holland

Mr. Fulton

Mr. Fields

Mr. Korn

Mr. Black

MOTHERS

Mrs. Maxwell

Mrs. Malcolm

Mrs. Carpenter

Mrs. Fields

Mrs. Weldin

Mrs. Tailor

Mrs. Haas

Mrs. Black

Mrs. Andrews

CHILDREN

Evelyn Holland
Karen Coston
Joseph Maxwell
William Brown
Matthew Parsons
Carol Wilson
Ellen Malcolm
Sheila Fulton
Joan Thomas
Ron Carpenter
Butch Dobbins
Edward Yost
Greg Fields
Harold Murray
Sarah Sills
Anne Weldin
Eric Korn
Mary Grasse
Phyllis Tailor
Peggy Stone
David Shields
Peter Haas
Jane Corcoran
Ben Black
Walter Lowe
Michael Andrews
Doris Hall
Ralph Willard

COLONIAL VIRGINIA TRIP ITINERARY

Day 1

6:00 a.m. - 11:00 a.m.	Travel from Wilmington to Jamestown Festival Park.
11:00 a.m. - 11:45 a.m.	Box lunch at Jamestown Festival Park.
11:45 a.m. - 2:30 p.m.	Tour Jamestown Festival Park with guide.
2:30 p.m. - 3:00 p.m.	Travel to Carter's Grove.
3:00 p.m. - 5:00 p.m.	Tour Carter's Grove.
5:00 p.m. - 5:30 p.m.	Travel to hotel on the outskirts of Williamsburg.
5:30 p.m. - 6:30 p.m.	Check into hotel and freshen up in rooms.
6:30 p.m. - 8:00 p.m.	Buffet Dinner at the hotel.
8:00 p.m. - 8:15 p.m.	Travel into the historic area of Williamsburg.
8:30 p.m. - 9:30 p.m.	Lantern Tour in Williamsburg.
9:30 p.m.	Return to hotel and go to bed.

COLONIAL VIRGINIA TRIP ITINERARY (CONTINUED)

Day 2

7:00 a.m. - 8:00 a.m.	Breakfast Buffet.
8:30 a.m. - 9:00 a.m.	Travel to Williamsburg Group Tours Office. Ms. R. and Ms. W. purchase tickets for everyone.
9:00 a.m. - 12:30 p.m.	Children tour with a guide in Williamsburg. Adults tour on their own.
12:30 p.m. - 1:30 p.m.	Children eat lunch at Williamsburg Grill.
1:30 p.m. - 2:30 p.m.	Children and adults tour the Governor's Palace.
2:30 p.m. - 3:00 p.m.	Travel to Yorktown Victory Center.
3:00 p.m. - 5:00 p.m.	Tour with guide at the Yorktown Victory Center.
5:00 p.m. - 7:30 p.m.	Depart from the Yorktown Victory Center and travel to dinner. Stop at Morrison's Cafeteria near Culpepper, Virginia.
7:30 p.m. - 8:30 p.m.	Dinner at Morrison's Cafeteria.
8:30 p.m.	Depart from Morrison's and travel to Wilmington.
11:00 p.m.	Arrive in Wilmington.

GROUP II

INFORMATION REGARDING COSTS OF TOURS AND BUSES

Your group must determine the total cost of the tours and buses. Below is the information you need. Be sure to order the proper number of buses, and be sure every person has a ticket for every event. Don't forget Ms. W. and Ms. R.

1. Jamestown Festival Park/ Yorktown Victory Center combination tickets.
 - a. \$7.50 per child.
 - b. One adult free with every ten children.
 - c. All other adults are \$7.50.

2. Carter's Grove
Tickets are \$5.50 per person.

3. Lanthorn Tour in Williamsburg, Day 1
Tickets are \$5.50 per person.

4. Tours in Williamsburg, Day 2.
 - a. \$9.50 per child.
 - b. One adult free with every ten children.
 - c. \$20.50 for each of the other adults. Ticket includes the Governor's Palace.
 - d. \$5.50 per child for the Governor's Palace. Adults are admitted on the tickets they have.

5. Buses are \$1166 per bus for the two days.

GROUP III

INFORMATION REGARDING COSTS OF MEALS

Your group must determine the total cost of the meals. Below is the information you need regarding meal costs and taxes at each of the various places we will eat.

1. Box lunch on Day 1 at Jamestown Festival Park.
 - a. \$6.50 per person.
 - b. One complimentary box lunch for every twenty paid box lunches.
 - c. We will provide a box lunch for each of our bus drivers.

2. Buffet dinner at the hotel on Day 1.
 - a. \$12 per child (includes taxes and gratuities).
 - b. One complimentary adult meal for every twenty people. That means we pay for nineteen and the twentieth is free.
 - c. \$16 per adult for all the other adults (includes taxes and gratuities).

3. Breakfast buffet at the hotel on Day 2.
 - a. \$6.50 per child (includes taxes and gratuities).
 - b. One complimentary adult meal for every twenty people.
 - c. \$7.50 per adult for all the other adults (includes taxes and gratuities).

4. Children's lunch at the Williamsburg Grill on Day 2.
 - a. \$4.50 per child plus 6 ½ % tax.

5. Dinner at Morrison's Cafeteria in Culpepper, Virginia on Day 2.
 - a. \$7.50 per child (includes taxes and gratuities).
 - b. \$9.00 per adult (includes taxes and gratuities).
 - c. Ms. R. and Ms. W. receive complimentary meals.

FINAL TASK FOR THE CLASS AS A WHOLE

Each group should share their completed task with each of the other groups. The other groups will recheck the work and offer suggestions for alterations where errors seem to have occurred. Remember, we are trying to keep the cost of the trip as low as possible.

Once the class has agreed that all arrangements and cost calculations are accurate, take the total cost and divide it by the number of people going on the trip, excluding Ms. R. and Ms. W. in the count.

Group I Answers

Rooms needed = 23. One room is complimentary.

Roll-away beds needed = 2

22 rooms x \$59	=	\$ 1298
2 roll-aways 2 x \$9.00	=	18
		<hr/>
		\$ 1316
tax = \$1316 x 0.095	=	125.02
		<hr/>
Total cost for rooms	=	\$ 1441.02

Group II Answers

Two buses needed

$$2 \times \$1166 = \$ 2332$$

Jamestown Festival Park/
Yorktown Victory Center

Combination ticket

$$\$7.50 \times 53 \text{ children} = \$ 397.50$$

$$\$7.50 \times 27 \text{ adults} = 202.50$$

$$\text{Total cost for JFP/YVC} = \$ 600.00$$

Carter's Grove

$$\$5.50 \times 85 \text{ people} = \$ 467.50$$

Lanthorn Tour in Williamsburg

$$\$5.50 \times 85 \text{ people} = \$ 467.50$$

Williamsburg Tours

$$\$9.50 \times 53 \text{ children} = \$ 503.50$$

$$\$5.50 \times 53 \text{ children (Gov.P.)} = 291.50$$

$$\$20.50 \times 27 \text{ adults} = 553.50$$

$$\text{Total} = \$ 1348.50$$

$$\text{Total cost for buses and tours} = \$ 5215.50$$

Group III Answers

Meals

Box lunch at Jamestown - need 87 lunches		
\$6.50 x 83	=	\$ 539.50
Buffet dinner at hotel - need 85 dinners		
\$12 x 53 children	=	\$ 636.00
\$16 x 28 adults	=	448.00
		<hr/>
Total for dinner	=	\$ 1084.00
Breakfast buffet - need 85 breakfasts		
\$6.50 x 53 children	=	\$ 334.50
\$7.50 x 28 adults	=	210.00
		<hr/>
Total for breakfast	=	\$ 554.50
Children's lunch - need 53		
\$4.50 x 53	=	\$ 238.50
Tax = \$238.50 x 0.065	=	15.50
		<hr/>
Total	=	\$ 254.00
Dinner at Morrison's - Need 85		
\$7.50 x 53	=	\$ 397.50
\$9.00 x 30		270.00
		<hr/>
Total	=	\$ 667.50
Total cost of meals	=	\$ 3099.50
Total cost of trip = \$3099.50 + \$1441.02 +		
\$5215.50	=	\$ 9756.02
Cost per person = \$9756.02 divided by 83	=	\$ 117.55
rounded up to the nearest penny		