

MATH

Can Take You Places

LESSON 23

“Away We Go”

by Rhonda Bailey

CONCEPT AREA Domain/Range Reasonableness

GRADE LEVEL 4-6

TIME ALLOTMENT 60 minutes

LESSON OVERVIEW Students will engage in using mathematics to solve a real-life problem. Students will use estimation skills to calculate the cost of a trip to Six Flags amusement park.

LESSON ACTIVITIES OVERVIEW Students calculate the maximum and minimum amount of money they would need for a family trip to an amusement park.

LEARNING OBJECTIVES Students will be able to:

- Devise and execute a plan for problem solving.
- Estimate within a given situation.
- Discuss practical real-world problem-solving applications using mathematics.

STANDARDS (TEKS) From the Texas Essential Knowledge and Skills for Math for grades 4-6:

Grade 4.

4.1A, B, G

Grade 5.

5.1A, B, G

Grade 6.

6.2D; 6.8A; 6.11B, D

MEDIA COMPONENTS Video: *Math Can Take You Places #003 “Domain/Range/Reasonableness”*
Internet: [Travelocity, www.travelocity.com](http://www.travelocity.com)

MATERIALS Items from Six Flags (optional)

- Calculators
- Group activity sheet
- Group banners
- Price sheets from Travelocity.com for a trip from Portland, Oregon to DFW
- Chart paper
- Marker

PREP FOR TEACHERS

- Divide students into at least four groups of three to four people.
- Closely review the assignments of each of the four groups, so that assistance can easily be offered.

Note:

The concepts of **range** and **estimation** will be covered during this lesson. Students may need to review the concepts prior to beginning the activities, especially if your class includes students who are acquiring English as a second language (ESL).

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INTRODUCTORY ACTIVITY: SETTING THE STAGE

1. Open the lesson by sharing this scenario with your students:

The items you see on your desk are from Six Flags. You are going to figure out about how much money it would cost a family of seven to go to Six Flags for the entire day. Grandma and Grandpa are planning to fly in from Portland, Oregon to go to Six Flags with the family for the day; they will need round-trip tickets. The family includes you, a fourth- (fifth- or sixth-) grader, two parents, a little sister who is two years old and an older brother who is 16. About how much is it going to cost the family to go to Six Flags? Be sure to include the cost to fly the grandparents in from Portland. Use the price information you have to find a range, so we can calculate the least possible amount of money we may spend and the greatest amount we could possibly spend.

2. Let students take a few minutes to analyze the price list. Have each group write an estimate of what it thinks the total trip to Six Flags will cost, including the cost of the round-trip airline tickets for Grandma and Grandpa.

3. **Start** *Math Can Take You Places* video #003 “Domain/Range Reasonableness” after the facilitator from Six Flags Over Texas says, “... we want people to know what Six Flags is all about.” **Pause** when the problem text appears on screen, “... least amount of money we may spend and the greatest amount that we may spend.”

LEARNING ACTIVITIES

1. There are four basic parts of the trip that each group will need to calculate.

- Group 1 is going to calculate the least amount and the greatest amount of money the family could spend on tickets.
- Group 2 is going to figure out the least amount and the greatest amount of money the family could spend on food.
- Group 3 is going to calculate the least amount and the greatest amount of money that the family would spend on souvenirs.
- Group 4 needs to calculate the cost of airplane tickets for Grandma and Grandpa to fly round-trip to Dallas from Portland, Oregon.

2. Students should write up their plans and conclusions on the chart paper and be ready to share with the class. When each group is finished reporting, the entire class will work together to get a total for the least amount the family might spend on the trip and the greatest amount the family could spend.

Group assignments:

Group 1:
Tickets to Six Flag
Adults: \$29.99
Kids under 48 inches tall: \$17.99

You have coupons for \$12 off adult admission that are only good if used during the

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week. You may or may not be able to use the coupons depending on what day your mom can get off work.

Calculate the greatest and least amounts of money the family might spend on tickets.

Group 2:
Food

MENU FOR SAL'S SANDWICH SHACK

Combo Meals (includes a regular drink and fries)

Triple Cheeseburger Meal	\$7.99
Chicken Strip Meal.....	\$6.15
Fish Sandwich Meal	\$6.75
Kid's Meal.....	\$4.15 (children 12 and under)
Salad	\$3.25
Drinks	\$1.35 (regular) \$2.85 (large)
Chips	\$1.00
Ice Cream Bars.....	\$1.75

Use the menu to calculate the approximate amount that the family will spend on food at Six Flags for the entire day. Include snacks and drinks. Calculate a reasonable amount that the family will spend on food, not to exceed \$300. Be able to explain your answer.

Group 3:
Souvenirs/Games

PRICE LIST FOR TERRI'S TERRIFIC T-SHIRTS AND MORE

T-Shirts	\$26.15 (adults) \$18.80 (kids' sizes)
Hats.....	\$9.35
Mugs.....	\$6.15
Sunglasses	\$4.75
Stuffed Animals.....	\$35.10 (large)
Pencils.....	\$1.89

The family does not want to spend more than \$250 on souvenirs and games.

Group 4:
Airplane tickets for Grandma (60 years old) and Grandpa (65 years old)

Use the Web site Travelocity.com to calculate the most and the least amount that might be spent on the airline tickets.

- CULMINATING ACTIVITY**
1. All four groups will share their final results. Each group should include both minimum and maximum values as a part of its solution.
 2. Let each group write its final results on the board. Ask students if they would like to modify their original estimate of the cost for the day at Six Flags. If students change their

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estimates, they must explain why and give evidence of their new choices.

3. Use a calculator to get the range of the least amount of money the family could spend on the entire trip as well as the most money it could spend.

4. **Cue** video after Sandra Daniel says, “We had about 100 million visitors to Six Flags Over Texas.” Press **Play**. Have students compare their findings with those on the video. **Stop** at “That’s why we’re here.”

CROSS-CURRICULAR EXTENSIONS

Science

Research the construction of roller coasters and how it relates to physics.

Art

Design your own perfect amusement park on construction paper using markers and household items.

REAL-WORLD CONNECTIONS

Take a field trip to a local amusement park. Have students complete a scavenger hunt to find the most expensive and the least expensive food items and souvenirs for each individual shop. As a group, decide which shops have the best buys for consumers.

ASSESSMENT

Informally monitor students as they solve the problem to assess understanding.

STUDENT HANDOUTS

Group Assignments sheets

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Group Assignments

Park Tickets

Group I:

You are going to figure out about how much money it would cost a family of seven to go to Six Flags for the entire day. The family includes you, a fourth- (fifth- or sixth-) grader, two parents, a little sister who is two years old, an older brother who is 16, and your two grandparents. Group I is going to calculate the least amount and the greatest amount of money the family could spend on tickets.

Tickets to Six Flag

Adults: \$29.99

Kids under 48 inches tall: \$17.99

Senior Citizens: \$15.00 (Tuesdays only)

You have coupons for \$12 off adult admission that are only good if used during the week. You may or may not be able to use the coupons depending on what day your mom can get off work. You and your older brother both earned free passes through a summer reading program that can only be used after May.

Calculate the greatest and least amounts of money the family might spend on tickets.

Group Assignments

Food

Group 2:

You are going to figure out about how much money it would cost a family of seven to go to Six Flags for the entire day. The family includes you, a fourth- (fifth- or sixth-) grader, two parents, a little sister who is two years old, an older brother who is 16, and your two grandparents. Group 2 is going to figure out the least amount and the greatest amount of money the family could spend on food.

MENU FOR SAL'S SANDWICH SHACK

Combo Meals (includes a regular drink and fries)

Triple Cheeseburger Meal	\$7.99
Chicken Strip Meal.....	\$6.15
Fish Sandwich Meal	\$6.75
Kid's Meal	\$4.15 (children 12 and under)

Barbecue Sandwich.....	\$4.75
Catfish Fillets	\$5.95
Junior Burger	\$1.25
Salad.....	\$3.25
Drinks	\$1.35 (regular) \$2.85 (large)
Chips	\$1.00
Ice Cream Bars	\$1.75

Use the menu to calculate the approximate amount that the family will spend on food at Six Flags for the entire day. Include snacks and drinks. Calculate a reasonable amount that the family will spend on food, not to exceed \$300. Be able to explain your answer.

Group Assignments Souvenirs/Games

Group 3:

You are going to figure out about how much money it would cost a family of seven to go to Six Flags for the entire day. The family includes you, a fourth- (fifth- or sixth-) grader, two parents, a little sister who is two years old, an older brother who is 16, and your two grandparents. Group 3 is going to calculate the least amount and the greatest amount of money that the family would spend on souvenirs.

Souvenirs/Games

PRICE LIST FOR *TERRI'S TERRIFIC T-SHIRTS AND MORE*

T-Shirts	\$26.15 (adults) \$18.80 (kids' sizes)
Hats	\$9.35
Mugs	\$6.15
Sunglasses	\$4.75
Stuffed Animals	\$35.10 (large)
Pencils	\$1.89

Also, each of the kids may want to buy souvenirs for one of each of their friends. Plus, Grandma and Grandpa may want to take some souvenirs home to a couple of their friends in Oregon. Mom and Dad may pass on souvenirs all together since they've been to the park several times.

The family does not want to spend more than \$250 on souvenirs and games.

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Group Assignments

Airplane Tickets

Group 4:

You are going to figure out about how much money it would cost a family of seven to go to Six Flags for the entire day. The family includes you, a fourth- (fifth- or sixth-) grader, two parents, a little sister who is two years old, an older brother who is 16, and your two grandparents. Group 4 needs to calculate the cost of airplane tickets for Grandma and Grandpa to fly round-trip to Dallas from Portland, Oregon.

Find airplane tickets for Grandma (60 years old) and Grandpa (65 years old). They plan to stay at least two days, but they may be able to stay up to five days. Your house is being renovated, so they may have to stay in a hotel during their visit. Also, Grandma and Grandpa may need to rent a car so that they can visit old friends and do some antiques shopping.

Use the Web site Travelocity.com to calculate the most and the least amount that might be spent on the airline tickets.

Asignaciones de Grupos
Boletos de Entrada al Parque

Grupo I:

Tú vas a calcular cuanto dinero cuesta para llevar una familia de siete al parque de Six Flags por un día entero. En la familia incluyes tú, un estudiante de cuarto (quinto ó sexto) grado, tus padres, una hermana pequeña que tiene dos años de edad, un hermano mayor que tiene 16 años de edad, y tus dos abuelitos. Grupo I calculara la menor y mayor cantidad de dinero que la familia gastaría para comprar los boletos de entrada al parque.

Boletos de entrada para Six Flags

Adultos: \$29.99

Niños (menos de 48 pulgadas de altura): \$17.99

Ancianos: \$15.00 (los martes solamente)

Tienes cupones de \$12 de rebaja para adultos que son buenos solamente durante la semana. Es posible que puedas usarlos ó no, depende del día que tu mamá pueda tomar tiempo libre de su trabajo. Tú y tu hermano mayor pueden obtener la entrada gratis por medio del programa de lectura cual se pueden usar solamente después del mes de mayo.

Calcula la menor y mayor cantidad de dinero que tu familia podría gastar en comprando los boletos.

Asignaciones de Grupos Comida

Grupo 2:

Tú vas a calcular cuanto dinero cuesta para llevar una familia de siete al parque de Six Flags por un día entero. En la familia incluyes tú, un estudiante de cuarto (quinto ó sexto) grado, tus padres, una hermana pequeña que tiene dos años de edad, un hermano mayor que tiene 16 años de edad, y tus dos abuelitos. Grupo 2 calculara la menor y mayor cantidad de dinero que la familia gastaría para la comida.

MENÚ DE SAL'S SÁNDWICH SHACK

Platos Combinados (incluye una bebida regular y papas fritas)

Hamburguesa Triple con queso	\$7.99
Tiras de pollo	\$6.15
Sándwiches de pescado.....	\$6.75
Platos para niños.....	\$4.15 (niños de 12 años y menores)
Sándwiches de Barbeque.....	\$4.75
Filetes de pescado	\$5.95
Hamburguesa Júnior	\$1.25
Ensaladas.....	\$3.25
Bebidas	\$1.35 (regular) \$2.85 (grande)
Chips	\$1.00
Barras heladas	\$1.75

Usa el menú para calcular la cantidad aproximada que la familia gastará en comida por todo el día en Six Flags. Incluye bocadillos y bebidas. Calcula una cantidad razonable que la familia gastará en comida sin sobrepasar los \$300. Prepárate para explicar tu respuesta.

Asignaciones de Grupos
Recuerdos

Grupo 3:

Tú vas a calcular cuanto dinero cuesta para llevar una familia de siete al parque de Six Flags por un día entero. En la familia incluyes tú, un estudiante de cuarto (quinto ó sexto) grado, tus padres, una hermana pequeña que tiene dos años de edad, un hermano mayor que tiene 16 años de edad, y tus dos abuelitos. Grupo 3 calculara la menor y mayor cantidad de dinero que la familia gastaría en recuerdos.

Recuerdos y Juegos

LISTA DE PRECIOS: “TERRI’S CAMISETAS Y ALGO MÁS”

Camisetas.....	\$26.15 (para adultos)	\$18.80 (para niños)
Gorras/Cachuchas/Sombreros.....	\$9.35	
Tazas.....	\$6.15	
Anteojos para el sol.....	\$4.75	
Animales de peluche.....	\$35.10 (grandes)	
Lápices.....	\$1.89	

Tambien, cada hijo/a querrá comprarle un recuerdo a cada uno de sus amiga/os. Además, abuelito y abuelita querrán llevarse recuerdos a casa para dos amistades en Oregon. Mama y papa quizás no compraran recuerdos como ellos ya han visitado el parque varias veces.

La familia no quiere gastar más de \$250 en recuerdos.

Asignaciones de Grupos
Pasajes de Avión

Grupo 4:

Tú vas a calcular cuanto dinero cuesta para llevar una familia de siete al parque de Six Flags por un día entero. En la familia incluyes tú, un estudiante de cuarto (quinto ó sexto) grado, tus padres, una hermana pequeña quien tiene dos años de edad, un hermano mayor quien tiene 16 años de edad, y tus dos abuelitos. Grupo 4 calculara el costo de los pasajes de avión de ir y vuelta desde Pórtland, Oregon a Dallas para abuelita y abuelito.

Busca pasajes de avión para abuelita (60 años de edad) y abuelito (65 años de edad). Ellos se piensan quedar por los menos dos dias, pero quizás podrán quedarse hasta cinco dias. Están remodernizando tu casa quizás tendrán que quedarse en un hotel durante su visita. Tambien, tus abuelitos tendrán que rentar un carro para poder ir a visitar sus amistades viejas e ir de compras de antigüedades.

Usa la Internet: Travelocity.com para calcular la mayor o la menor cantidad de dinero que se podrá gastar en los pasajes de avión.