

LA TRAVIATA

GIUSEPPE VERDI

Math: A Night at the Opera

Students Will

- Use mathematical operations to solve real world situations
- Utilize charts and analyze data to answer questions

Copies for Each Student

- "A Night at the Opera" chart
- **Math Activity Worksheet**

Copies for the Teacher

- "A Night at the Opera" chart
- **ANSWER KEY Math Activity Worksheet**

Getting Ready

Prepare internet access to present the full subscription prices chart to the class. Gather pencils, notebook paper, and calculators as needed.

Guided/Independent Practice

Teachers: Depending on your grade level and the ability of your students, you may choose to conduct this lesson as a whole class, small group, or partner activity. You may decide to assign all or a certain number of questions on the activity worksheet. Remind students to ask for clarification of any unknown words or concepts.

Tell students:

"Today we'll read charts to find specific information about the 2017-2018 Opera Subscriptions. Explain the term, *subscription*. As it is used here, *subscription* is an agreement to pay for a series of opera tickets.

Direct the students to the "A Night at the Opera" chart and the "Math Activity Worksheet". Assist with the directions and introduce the chart. Allow time for students to complete the activity worksheet. Check the answers as a class.

FYI: View prices and seats online at <http://dallasopera.org/tickets/subscriptions/pricing18/>.

Evaluation:

Were the students able to complete the worksheet by answering the questions at 80% accuracy?

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TEKS

Grade 6

- (1) Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B.)
- (2) Number and Operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. (D)
- (3) Number and Operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. (C. D. E.)
- (5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. (A. B.)
- (14) Personal Financial Literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. (C)

Grade 7

- (1) Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. C. D. E.)
- (2) Number and Operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. (A)
- (3) Number and Operation. The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. (A. B.)
- (6) Proportionality. The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships. (C. D. E. G. H. I.)

Grade 8

- (1) Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. C. D. E. F. G.)
- (1) Number and Operations. The student applies mathematical process standards to represent and use real numbers in a variety of forms. (A. D.)

Grade 9-12

- (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. C. D. E. F. G.)

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Name _____

Date _____

A Night at the Opera Chart

Directions: Below are the show times and subscription prices for The Dallas Opera's 2017-2018 Season. Each price is for one (1) ticket to each of the 5 operas in the season, including *La Traviata*. For example, a subscription for Opening Night will provide a ticket to the opening nights of *Samson & Dalila*, *La Traviata*, *The Ring of Polykrates*, *Sunken Garden*, and *Don Giovanni*. Refer to the chart to answer the questions that follow. You may view the seating map at:

<http://dallasopera.org/tickets/seating/>

<i>The Dallas Opera 2017-2018 Season</i>	<i>Series A</i>	<i>Series B</i>	<i>Series C</i>	<i>Series D</i>
<i>Samson and Dalila</i>	<i>Opening Night</i>	<i>Sunday Matinee</i>	<i>Wednesday Midweek</i>	<i>Saturday Evening</i>
<i>Times</i>	<i>7:30pm</i>	<i>2:00pm</i>	<i>7:30pm</i>	<i>7:30pm</i>
SECTION: PREMIUM				
Zone: A President's Box	\$1700	\$1690	\$1575	\$1700
Zone: B Founder's Day	\$1475	\$1475	\$1350	\$1475
Zone: C Side Box	\$1250	\$1125	\$1050	\$1250
Zone: 1a Orch. Center Aisle	\$1200	\$1000	\$905	\$1125
SECTION: ORCHESTRA				
Zone: 1b Orch. Center	\$1025	\$950	\$800	\$1000
Zone: 2 Orch. Terrace	\$750	\$725	\$600	\$750
Zone: 3a Orch. Front	\$575	\$545	\$450	\$575
Zone: 3b Orch. Side	\$700	\$725	\$600	\$725
Zone: 4 Orch. Side Terrace	\$495	\$365	\$375	\$450
SECTION: MEZZANINE				
Zone: 5 Mezz. Front/Center	\$560	\$495	\$450	\$550
Zone: 6 Mezzanine Rear	\$380	\$382	\$325	\$420
SECTION: DRESS CIRCLE				
Zone: 8 Dress Front/Center	\$269	\$273	\$245	\$317
Zone: 9 Dress Circle Rear	\$227	\$223	\$199	\$263
SECTION: GRAND TIER				
Zone: 12 Grand Front/Center	\$145	\$165	\$125	\$185
Zone: 13 Grand Rear	\$95	\$115	\$95	\$115

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Math Activity Worksheet

1. How much is a subscription for a family of five to attend the Wednesday Midweek performance with seats in the Dress Front/Center?

2. How much would you save if you bought a subscription in the Dress Circle Rear for Opening Night, rather than Saturday evening for 23 seats?

3. How much more would you spend if you bought a subscription for 9 seats in zone 1b for Opening Night, instead of zone 9? _____
4. If you wanted to attend the Sunday Matinee, how much would it cost for two subscription seats in the Mezzanine Front/Center? _____
5. How much could you save if you purchase a subscription seat for Series C instead of Series D, sitting in the Side Box?

6. What is the cost for a subscription for 2 seats in the President's Box and a subscription for four seats in the Orchestra Side Terrace for the Sunday Matinee?

7. If you wanted to sit in the Grand Front/Center, what would be the least expensive day to attend, and how much would it cost for a subscription of 7 seats?

Directions: Complete the table below using the subscription prices for Series A Opening Night. The first one has been completed for you.

Ex: 5 seats x \$269 (Dress Front/Center price) = \$1345.00

<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>	<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>
5	Dress Front/Center	\$1345.00	2	President's Box	
23	Dress Circle Rear		4	Orchestra Side Terrace	
9	Orchestra Center		7	Grand Front/Center	
2	Mezzanine Front/Center		6	Orchestra Center Aisle	

Using information from the table above, please answer the following questions:

8. How much was made in sales for all subscription seats purchased? _____
9. What was the average price of the subscription seats sold? _____

Bonus:

10. Create a graph displaying the number of subscription seats sold according to their section placement.

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ANSWER KEY

Math Activity Worksheet

1. How much is a subscription for a family of five to attend the Wednesday Midweek performances with seats in the Dress Front/Center? **\$1,225.00**
2. How much would you save if you bought a subscription in the Dress Circle Rear for Opening Night, rather than Saturday evening for 23 seats? **\$828.00**
3. How much more would you spend if you bought a subscription for 9 seats in zone 1b for Opening Night, instead of zone 9? **\$7,182.00**
4. If you wanted to attend the Sunday Matinee, how much would it cost for two subscription seats in the Mezzanine Front/Center? **\$990.00**
5. How much could you save if you purchase a subscription seat for Series C instead of Series D, sitting in the Side Box? **Series C is \$200.00 cheaper**
6. What is the cost for a subscription for 2 seats in the President's Box and a subscription for four seats in the Orchestra Side Terrace for the Sunday Matinee? **\$4,840.00**
7. If you wanted to sit in the Grand Front/Center, what would be the least expensive day to attend, and how much would it cost for a subscription of 7 seats? **The Wednesday Midweek show would be least expensive to attend and it would cost \$875.00 for a family of seven.**

Directions: Complete the table below using the subscription prices for Series A Opening Night. The first one has been completed for you.

Ex: 5 seats x \$269 (Dress Front/Center price) = \$1345.00

<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>	<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>
5	Dress Front/Center	\$1345.00	2	President's Box	\$3400.00
23	Dress Circle Rear	\$5221.00	4	Orchestra Side Terrace	\$1980.00
9	Orchestra Center	\$9225.00	7	Grand Front/Center,	\$1015.00
2	Mezzanine Front/Center	\$1120.00	6	Orchestra Center Aisle	\$7200.00

8. How much was made in sales for all subscription seats purchased? **\$30,506**
9. What was the average price of subscription seats sold? **\$525.97 per ticket**

Bonus:

10. Create a graph displaying the number of subscription seats sold according to their section placement.

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ANSWER KEY

SAMPLE 2017-2018 TDO Subscription Seats: Opening Night

