

Math: My Opera Subscription

Students Will

- Learn to use seating and pricing information to determine best value
- 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
- **Activity Worksheet**

Getting Ready

Prepare internet access to The Dallas Opera's seating chart for the students:

<http://dallasopera.org/tickets/seating/>. Gather pencils, notebook paper, and calculators as needed.

Introduction/ Class Discussion

Begin a discussion with your students about attending an opera performance. Tell your students that opera-goers have the option to purchase a package that allows them to sit in the same seats or different seats for each opera performance within a given season. This package is often called a *subscription* in which a person (the subscriber) agrees to pay for a ticket to the performances before the first performance in the package begins. Have the students view the online seating chart throughout the discussion to consider which seats they prefer for their subscription: <http://dallasopera.org/tickets/seating/>. Guide the discussion to ensure students consider why a person would want to sit in specific seats or locations, ensuring they consider cost, view of the stage, access to the exits, reading the subtitles, and day of the week.

Guided Practice

Give the students a copy of **A Night at the Opera** chart or display it on a screen for the entire class. Then give the students a copy of the selected activity worksheet and review the instructions. Discuss the different mathematical operations and conversions necessary to complete the assignment.

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.

Independent Practice

Give students time to complete the activity worksheets and allow time to check the answers in class.

Evaluation:

1. Did any of the students have prior knowledge about opera subscriptions or purchasing tickets for a performance?
2. Were the students able to complete the worksheet at 80% accuracy?
3. Did any of the students seem interested in going to the opera or live theater on their own?

TEKS: Mathematics

Grade 6 | 111.26.B

(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 | 111.27.B

(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 | 111.28.B

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

(2) 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.)

A Night at the Opera Chart

Directions: This chart shows the prices for a package to attend performance in various seat locations for The Dallas Opera's 2019-2020 Season. Each price is for one (1) ticket/ seat to each of the five (5) operas in the season, including *Don Carlo*. Refer to the chart to answer the questions that follow. You may view the seating map at:

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

Full Subscription Pricing for Five-Opera Package

<i>The Dallas Opera 2019 -2020 Season</i>	<i>Series A</i>	<i>Series B</i>	<i>Series C</i>	<i>Series D</i>
	<i>Opening Night</i>	<i>Sunday Matinee</i>	<i>Wednesday Midweek</i>	<i>Saturday Evening</i>
SECTION: PREMIUM*				
President's Box	\$1605	\$1651	\$1559	\$1675
Founder's Day	\$1375	\$1421	\$1329	\$1445
Side Box	\$1145	\$1191	\$1099	\$1215
Orchestra Center Aisle	\$869	\$915	\$823	\$939
SECTION: ORCHESTRA				
Orchestra Center	\$777	\$823	\$731	\$847
Orchestra Terrace	\$639	\$685	\$593	\$709
Orchestra Front	\$685	\$731	\$639	\$755
Orchestra Side	\$593	\$639	\$547	\$663
Orchestra Side Terrace	\$547	\$593	\$501	\$617
SECTION: MEZZANINE				
Mezzanine Front/Center	\$685	\$731	\$639	\$755
Mezzanine Rear	\$639	\$685	\$593	\$709
SECTION: DRESS CIRCLE				
Dress Circle Front/Center	\$409	\$455	\$363	\$479
Dress Circle Rear	\$363	\$409	\$317	\$433
SECTION: GRAND TIER				
Grand Tier Front/Center	\$133	\$179	\$95	\$203
Grand Tier Rear	\$95	\$95	\$95	\$95

*Premium seats are seats that are often considered the best seats in the performance hall due to location and view. This often includes the first balcony/ box seats in the performance hall and seats on the end of the row/ aisle seats.

Name _____

Date _____

My Opera Subscription Activity Worksheet

1. How much is a subscription for a family of five to attend the Wednesday Midweek performance with seats in the Dress Circle Front/Center? _____
2. How much would you save if you bought a subscription in the Dress Circle Rear for Series A, rather than Saturday evening for twenty-three seats? _____
3. How much more would you spend if you bought a subscription for nine seats in Orchestra Center for Opening Night, instead of Dress Circle Rear? _____
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 two seats in the President's Box and a subscription for four seats in the Orchestra Side Terrace for Series B? _____
7. If you wanted to sit in the Grand Tier Rear, what would be the least expensive day to attend, and how much would it cost for a subscription for seven seats? _____

Directions: Complete the table below using the subscription prices for Series A - Opening Night. The answer provided shows the following example: **5 seats x \$409 (Dress Circle Front/Center price) = \$2,045.00**

<i>Number of Subscription Seats</i>	<i>Section</i>	<i>Cost</i>	<i>Number of Subscription Seats</i>	<i>Section</i>	<i>Cost</i>
5	Dress Circle Front/Center	\$2,045.00	4	President's Box	
8	Dress Circle Rear		2	Orchestra Side Terrace	
9	Orchestra Center		7	Grand Tier Front/Center	
3	Mezzanine Front/Center		6	Orchestra Center Aisle	

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

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

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? **\$1,815.00**
2. How much would you save if you bought a subscription in the Dress Circle Rear for Series A, rather than Saturday evening for twenty-three seats? **\$1,610.00**
3. How much more would you spend if you bought a subscription for nine seats in Orchestra Center for Opening Night, instead of zone 9? **\$3,726**
4. If you wanted to attend the Sunday Matinee, how much would it cost for two subscription seats in the Mezzanine Front/Center? **\$1,462.00**
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 \$116.00 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 Series B? **\$5,674.00**
7. If you wanted to sit in the Grand Tier Rear, what would be the least expensive day to attend, and how much would it cost for a subscription of seven seats? **All the nights are the same price. It would cost \$665.00 for a subscription for seven seats in Grand Tier Rear section.**

Directions: Complete the table below using the subscription prices for Series A - Opening Night. The answer provided shows the following example: **5 seats x \$409 (Dress Circle Front/Center price) = \$2,045.00.**

<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>	<i>Seat Quantity</i>	<i>Section</i>	<i>Cost</i>
5	Dress Front/Center	\$2,045.00	4	President’s Box	\$6,420.00
8	Dress Circle Rear	\$2,904.00	2	Orchestra Side Terrace	\$1,094.00
9	Orchestra Center	\$6,993.00	7	Grand Tier Center	\$931.00
3	Mezzanine Front/Center	\$2,055.00	6	Orchestra Center Aisle	\$5,214.00

8. How much was made in sales for all subscription seats purchased? **\$27,656.00**
9. What was the average price of subscription seats sold? **\$628.54 per ticket**