

## Enhancement Activities/Strategies for Gifted/High Ability Learners: Sample Mathematics Learning Plan

### Big Idea/ Topic

Develop an understanding and fluency with multi-digit multiplication, and develop an understanding of dividing to find quotients involving multi-digit dividends, generalize place value understanding to multi-digit whole numbers

### Standard Alignment

**MGSE4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

**MGSE4.NBT.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

### Advanced Research

- Plan a vacation for your family to go to an amusement park. You will need to research admission price, hotels, and airfare. (*Handout on p. 3*)
- Learn about the Japanese Multiplication strategy using lines. <https://youtu.be/VJf8XAhC550> Try to solve a few problems using this strategy. Do you think it is easier or harder than how we have learned to multiply? Why?

## Communication

[Breakout EDU](#) (You can sign up for a free game if you don't have an account) [Game Night](#). Digital Breakout games are an easy way to challenge students to collaborate, use critical thinking, and communication to “breakout” (like an escape room concept, but everything is digital). This game requires children to apply their understanding of **division**. If this is your students' first experience with a Breakout Challenge, you may need to be prepared to give hints to help guide students. I find the best hints are questions to make them think more. Allow the students time to struggle before providing a hint. I encourage students to use the back of their recording sheet to write down solutions they try. Oftentimes, they will figure out the answer by working through what does not work. (*Handout on p. 4*)

## Critical Thinking and Critical Problem-Solving Skills

Use the “[Multiplication Challenge Puzzle](#)” as a practice page. Students will cut apart the pieces and solve the multiplication expressions. If students struggle offer this hint: “The four corner pieces are all quadrilaterals.” Once students have had success solving the puzzle, give them the opportunity to create their own puzzle (smaller grid with just 9 pieces).

## Creative Thinking and Creative Problem-Solving Skills

Brainstorm some of your favorite games. Now think of how you could create a game that would be fun for kids in your class and allow them to practice multiplication and division. Make a list of materials you will need. Try to utilize free or recycled materials. Think about the rules for the game. You might review game rules for some of your favorite games to be sure you are thorough with your directions. Be sure you can show your teacher how this game will help students practice the multiplication and division skills we have been learning.

## Awareness of Self—Student's Well-being

Provide students with a list of learning targets for multiplication and division in the order you will be teaching them. Many gifted learners will have already begun exploring multi-digit multiplication and division. When the standards ask students to explore and understand different strategies, it can be difficult for advanced students to see the point of learning them. Providing students with a ladder showing the progression may help students understand the importance. Encourage students to set goals. (*Sample on page 5*)

## Family Vacation to an Amusement Park

Name \_\_\_\_\_

**Directions:** Plan a family vacation to an amusement park in another state (or country).

Here are some possible destinations (You can choose a different amusement park):

- Disney World's Magic Kingdom (Orlando, Florida)
- Disney Tokyo (Tokyo, Japan)
- Cedar Point (near Cleveland, Ohio)
- LEGOLAND California (near San Diego, California)
- Bush Gardens Williamsburg (near Richmond, Virginia)
- Disneyland Paris (near Paris, France)
- Tivoli Gardens (Copenhagen, Denmark)
- Six Flags Great America (near Chicago, Illinois)



Destination: \_\_\_\_\_

Dates (Will you be going for Spring Break, summer vacation, or another time? \_\_\_\_\_)

How many family members will be going on the trip? \_\_\_\_\_ List them here: \_\_\_\_\_

**Park Admission:** What is the cost of admission for each person? Pay close attention to ticket prices for different ages. Senior citizens (grandparents) are usually discounted. Do you think your family will spend more than one day at the park? Sometimes there are options for 2- or 3-day tickets.

**Flight Cost:** Using Google Flights, determine the cost of the flight. Multiply the cost by the number of people going. Children under age 2 can ride in someone's lap and do not need a ticket.)

Airline \_\_\_\_\_ Cost per person \_\_\_\_\_

Total Cost for Airline Tickets \_\_\_\_\_

**Hotel Cost:** Find a hotel near the park. Be sure to figure out how many rooms you will need to fit your family. You pay for a hotel room for each night you are in the city.

Hotel Name \_\_\_\_\_ Number of Rooms \_\_\_\_\_

Cost per night \_\_\_\_\_ Total Cost for Hotel \_\_\_\_\_

Determine the total cost for the vacation including admission tickets, airline flights, and hotel.

***\*An actual family vacation budget would also need to consider the cost of meals, transportation to and from the airport, transportation from the hotel to and from the park, souvenirs, taxes, and gratuity.***

## Digital Breakout EDU Challenge Recording Sheet: Game Night





My Name \_\_\_\_\_

Names of the Students in My Group: \_\_\_\_\_



It's game night and you are ready to crush the competition with your expert gaming skills. Work through the puzzles to be the best and break your own record high scores!

### Record the Correct Lock Combination for Each Lock

Lock		Correct Combination							
	Word Lock								
	Number Lock								
	Color Lock								
	Shape Lock								

If you were planning a board game night, what games would you include?

What is a clue you could give to a classmate who needs help on a difficult lock?

## Progression of Multiplication Skills in Fourth Grade

**MGSE4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Multiply 2-digit by 2-digit
Multiply 1-digit by 4-digit
Multiply 1-digit by 3-digit
Multiply 1-digit by 2-digit
Multiply using area model or rectangular prism
Multiply a whole number by multiple of 10 or 100
Multiplication Fluency up to 12 x 12
Multiplication Fluency up to 10 x 10
Properties of Multiplication
Multiplication Fluency 0, 1, 2, 5, 10
Arrays
Repeated addition

Personal Goal: