

Growing with Mathematics



Grade 4

Topic 11
Differentiation Assignments

Challenge

Topic 11

Materials: *Problem Solving with Whole Numbers* p. 23 #2

Directions:

Beth has to transport 5 brontosaur models, 8 tyrannosaur models, and 20 stegosaur models across a river. The ferry is 160 ft long. It can carry 1 row of dinosaurs standing end to end. The brontosaurus are each 70 ft long, the tyrannosaurs are 50 ft long, and the stegosaurus are 20 ft long.

1. Describe one load Beth can transport across the river.

2. What is the fewest number of trips Beth would have to make to get all the dinosaur models across the river?

3. Describe the trips she would have to make if she can transport only one type of dinosaur model at a time.

Math Differentiation Menu

Attached are your assignments for **Topic 11** in Math class.
As you finish these assignments turn them into your teacher.

Division and Multiplication Lesson 11.1	Relating Division and Multiplication Lesson 11.2	Introducing the Division Algorithm Lesson 11.3
Introducing the Mean Lesson 11.4	Ancient Ways to Multiply and Divide Lesson 11.5	Challenge Topic 11

Teachers:

Highlight the activities that you wish students to use for this topic and write in the box the date that the assignment is due.

Student Signature

Date

Parent Signature

Date

Teacher Signature

Date

Multiplication and Division

Lesson 11.1

Materials: *Problem Solving with Whole Number Operations* p. 19, #1, 2, 4

Directions:

1. To train for a race, Chris rides his bike the same distance every day in July, for a total of 465 miles. His goal is to ride 20 miles each day in August. How many more miles each day will he have to ride in August than in July to meet his goal?

Explain how you arrived at your answer.

2. A cheetah can run 70 miles per hour. An ostrich runs 30miles per hour. How far can each run in 6 minutes? (Show your work.)

3. Rashanda ate 4 oz of tuna. It contains 83 calories per ounce. Rob ate 5 oz of chicken salad. It has 70 calories per ounce. Which person ate more calories? (Show your work.)

Relating Multiplication and Division

Lesson 11.2

Materials: *Math Rules* p. 83 #6 p. 86 #4

Directions:

1. How many ways can you arrange 36 ducks in rows? (Rows need to have the same number of ducks in them.) Show your work.

Explain what pattern you find.

2. Kennedy Elementary has 90 3rd graders. Each child goes to 4 classes. Each class has 15 children and 1 teacher. During each day, each teacher teaches 3 classes. What is the smallest number of teachers the school needs?

Explain how you found the answer.

Introducing the Division Algorithm

Lesson 11.3

Materials: Paper and pencil

Directions:

1. Find at least 3 different numbers that can be divided into 1,476 without leaving a remainder. The number 2 cannot be one of your three numbers.

2. This would be very hard to figure out, but you might try. Did you notice anything about the "number" (1,476) that might have helped you?

3. Can you come up with your own 4-digit division problem like the one above that at least 3 numbers can be the divisors?

Introducing the Mean

Lesson 11.4

Materials: *Problem Solving with Multiplication and Division* p.5 # 1, p. 7 #2

Directions:

1. Kimberly rode her bicycle 18 miles per day on Monday, Wednesday, and Friday. On Tuesday and Thursday, she rode 11 miles per day. On Saturday, she rode 26 miles. What was the average (or mean) number of miles she rode daily from Monday through Saturday?

Explain how you arrived at your answer.

2. Anthony practiced karate 30 minutes each weekday and 45 minutes on Saturday. He did not practice on Sunday. Was his average daily practice time greater or less than a half-hour for the week? _____

Explain how you arrived at your answer.

Ancient Ways to Multiply and Divide

Lesson 11.5

Materials: *Egyptian Genius* (p. 38-39)

Directions:

Reread page 38 out of *Egyptian Genius*.

As you worked with the Egyptian methods of multiplying and dividing, you saw that the ancient Egyptians used combinations of unit fractions to express other fractions. They always used the least number of fractions possible.

Using the "One Part Of" method (shown on p. 39 of *Egyptian Genius*), can you find a number of unit fractions that can be used to express other fractions such as $\frac{5}{6}$ or $\frac{11}{13}$.

You can make up your own symbols to express your ideas or use the ancient Egyptian symbols. If you made up your own system, can you come up with other fractions to use your system?
