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UNIT 1 LESSON 5

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| AIM: | SWBAT estimate quotients  |

**THINK ABOUT IT!**

Estimate the quotient of the expression below using ‘rounding to the biggest place value’ and ‘compatible numbers.’

203 ÷ 24

Which strategy do you think resulted in a quotient that is closest to the actual quotient? Explain.

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**Test the Conjecture**

*Test the Conjecture #1)* Estimate the quotient of 552 and 108 using two methods.

*Test the Conjecture #2)* Estimate the quotient of 806 and 97 using two methods.

Conjecture

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**PARTNER PRACTICE**

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| *Bachelor Level* |

1. Estimate the quotient of 812 and 94 using two different methods. ***Show your work.***
2. In problem 1, which estimate will likely be closer to the actual quotient? Explain how you know.

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| *Master Level* |

1. During a recent baseball game between the Triple A teams of the New York Yankees and the Boston Red Sox, the teams sold $242,000 worth of tickets. The average cost of a ticket is $23. About how many people bought tickets for the game? Come up with **two** possible answers.

***Show your work.***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which expression

**Check for Understanding:**

Which expression would likely yield the closest estimate to the quotient of 1,134 and 18 that you could do mentally?

a) 1000 ÷ 20

b) 1100 ÷ 20

c) 1200 ÷ 20

d) 1100 ÷ 10

**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. Estimate the quotient of each expression below using **two** different methods.
	1. 538 ÷ 96

Method 1: Method 2:

* 1. 362 ÷ 54

 Method 1: Method 2:

1. Which number sentence will yield the best estimate for 523 ÷ 27?
	1. 523 ÷ 27
	2. 500 ÷ 20
	3. 500 ÷ 25
	4. 525 ÷ 25

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| *Master Level* |

1. Alyssa spent 365 hours commuting on the train over the course of 54 days. If she rode the train about the same amount of time per day, approximately how many hours did she spend on the train per day?

***Show your work.***

1. The physical education teacher at Amistad High school needs to buy a tarp that will cover the entire football field plus the grass around the edge. The field has a total area of 622 square yards. The width of the field 74 yards. The teacher came up with two approximations for the length of the field to help him purchase the tarp.
	1. What do you think the two approximations are that the teacher came up with?
	2. Which approximation do you think is closer to the actual length? Why?

Approximation 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Approximation 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Without doing any calculations, would you expect the estimated quotient of 718 divided by 95 to be closer to the actual quotient using compatible numbers or by rounding to the biggest place value? Explain.

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1. Using estimation for the expression to the left of the box, which symbol makes the statement true? **Circle** the correct symbol.

6,351 ÷ 13 51



1. Use the table below to answer the following question: you are going to buy pencils and notepads for 3 classes. If there are 12 students in each class, about how many cents in total are you spending on each student?



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| *PhD Level* |

1. Edwin wants to create a division expression using the dividend 3,582. Determine a divisor for which using compatible numbers will lead to an estimate that will likely be closer to the actual quotient.
2. A major candy manufacturing company ships bags of their hard candy and soft candy in the same boxes and then sells the boxes to stores around the country. They recently shipped 546 bags of hard candy and 693 bags of soft candy, and sold each box for $25.99. If they pack two dozen bags of candy in each box, for approximately how much money did the company sell their most recent shipment?

***Show your work.***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there.  | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there.  | You need more practice and feedback. |

1. Adam is retiling his rectangular bathroom floor with one-square foot tiles. The bathroom floor is 1,770 square feet and the width is 26 feet. He wants to know the approximate length of the bathroom.

**Show** two different ways to estimate the length of the bathroom. Explain which method you would use and why.

Method 1: Method 2:

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