**Guided Notes- Chapter 3: Portions and Integers Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**In this chapter I CAN:**

* Apply a new tool for finding equivalent fractions
* Apply percents, decimals, and fractions to describe a portion of a whole
* Represent portions as percents, decimals, and fractions with pictures, symbols, and words
* Solve for the decimal form of a number when given it as a percent or fraction
* Connect rations to portions as ways to represent comparisons of parts
* Add positive and negative integers and rational numbers
* Solve for the absolute value of a number
* Determine the length of horizontal and vertical line segments on a coordinate grid.

**3.1.1 How can I represent data?**

**Using the Multiplicative Identity**

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| ***3-1*** |
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| ***3-2 Less is More*** | |
| Lasagna left after Frankie’s mother: | Lasagna left after repackaged: |
| Does she really have more lasagna after repackaging? Explain. | |

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| ***3-3 One-Derful One*** | |
| 1. Does it make sense?   Is it equivalent? | 1. Find at least two other fractions or ratios that are equivalent |
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| ***3-4*** |
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| ***3-5 So Many Choices*** | |
| **I:**  **Ii:**  **Iii:** | **b.** |

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| ***3-6*** | |
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| ***3-7*** | |
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| 2. **Ii. Iii.** | |

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| ***3-8*** | |
|  |  |
| 2. **Ii. Iii.** | |

**3.1.2 How can I describe a portion?**

**Portions and Percents**

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| ***3-22 Pretty Portions*** |
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| ***3-23*** | |
| Which estimate is greatest? | Order estimates: |

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| ***3-24*** |
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|  |
| **c.** |

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| ***3-25*** | | | |
| **b**.  Draw your picture | Estimate: | | Name your portion: |
| **c**. | | | |
| ***3-26*** | | | |
| 1. Count raisins: | Fraction: | | How can someone tell the size by looking at your fraction? |
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| ***3-27*** | | | |
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| ***3-28*** | |
|  | **b**. |
| **c.** | |

**3.1.3 How are the representations related?**

**Connecting Percents with Decimals and Fractions**

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| ***3-36 Build It, Draw It, Write It, Say It*** | | |
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| **a.**  Draw your picture  Write in 2 ways: | **b**.  Draw your picture  Write in 2 ways: | **c.**  Draw your picture  Write in 2 ways: | |
| Draw your picture: Write in 2 ways: | | | |

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| ***3-37*** | |
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| ***3-38*** | |
| How can 0.19 be represented? | What about 0.5? |
| ***3-39*** | |
| Draw a large percent ruler and mark each of portions using the letter. | |

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| ***3-40*** |
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| ***3-41*** | |
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|  | What giant one would you use? |
| 1. Write it in a decimal. | How is it related to the 100% block in part a? |
|  | Explain. |
| ***3-42*** | |
|  | |
|  | |
| **c**. | |
| ***3-43*** | |
| **a.** | |
| **b.** | |

**3. 1. 4 What is the connection?**

**Multiple Representations of a Portion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***2-29 Be There, Or Be Square*** | | | | | |
| **a.**  Draw it:  Write it: | **b.**  Draw it:  Write it: | | **c.**  Draw it:  Write it: | | **d.**  Draw it:  Write it: |
| **e.** | | | | | |
| **d.** | | | | | |
| ***3-56*** | | | | | |
| What does Sally mean? What explanation can you give for lining up decimals when adding and subtracting? | | | | | |
| Write your note to Susie here. | | | | | |
| ***3-57*** | | | | | |
| **a.** | | | | | |
| ***3-58*** | | | | | |
| **a.** | | **b.** | | **c.** | |
| ***3-60 Learning Log*** | | | | | |
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**3. 1. 5 Is there a more efficient way?**

**Completing the Web**

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| ***3-67 Converting Between Percents and Decimals*** | | | | |
| **a.** | | | | |
| **b.** | | | | |
| **c.** | | | | |
| **d.**  *i.* | *ii.* | *iii.* | *iv.* | *v.* |
| **e.**  *i.* | *ii.* | *iii.* | *iv.* | *v.* |

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| --- | --- | --- | --- |
| ***3-68 Converting From Fractions To Decimals*** | | | |
| **a.** | | | |
| **b**. | | | |
| **c**. | | | |
| **d.** | | | |
| **e.**  Find the value of 5/8? | 19/4? | | Any fraction? |
| ***3-69*** | | | |
| **a.** | | **b**. | |
| **c.** | | **d**. | |

**3.1.6 How else can I relate the quantities?**

**Investigating Ratios**

|  |  |  |  |
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| ***3-78*** | | | |
|  | | | |
| ***3-79*** | | | |
| **a**.  ***i.*** | ***ii.*** | ***iii.*** | ***iv.*** |
| **b.** | | | |
| ***3-80*** | | | |
| **a.**  What do you think each of these ratios represent? | | How do these ratios compare to the ratios in problem 3-79? | |
| **b.** | | | |
| **3-81 Ways To Write A Ratio** | | | |
| **a**.  word: | Fraction: | Colon: | What would you have to change? |
| **b**.  Word & colon: | | Fraction: | |
| **c.** | | | |
| **d.** | | | |
| ***3-82*** | | | |
| **a**. | | **b.** | |

**3.2.1 How does it move?**

**Addition, Subtraction, and Opposites**

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| ***3-89 Getting There*** | | | |
| **a.** | **b**. | | **c**. |
| ***3-90*** | | | |
|  | | **b.** | |
| **c.** | | **d.** | |

|  |  |
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| ***3-91 Opposites*** | |
| 1. 1st Game: | 2nd Game: |
| **b.** | |
| **c.** | |

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| ***3-92*** | | | |
| 1. Words: | Where did 3 come from? | | Why is one number subtracted? |
| 1. Describe the frog movement. | | Where did the frog start & where did he end up? | |
| 1. Where does the frog start & where does he end up? | | What is special about the ending point? | |
| 1. Write an expression: | | Where did the frog end up? | |
| 1. Where does the frog start in the expression? | | Where does it land? | |

**3.2.2 Where does it land?**

**Locating Negative Numbers**

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| 2-42 |
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| 2-44 | |
| How many are there? | Do they have the same area? |
| Sketch your figures. | |
| What has the largest area? | Which has the smallest area? |

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| 2-45 |
| On a separate sheet of paper, explain if there is a relationship between area and perimeter? Does changing one mean the other one always changes? Label “Area and Perimeter” and include today’s date. |

**2.3.1 How can I make the largest area?**

**Using Rectangles to Multiply**

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| 2-51 Special Products | | | |
| Explanation of strategy: | | | |
| 2-52 Maximizing Area | | | |
| a. | | | |
| b.Where can you see 2(of the 92) and the 8 (of the 18)? | What about 9 of the 92 and the 1 of the 18? | | What part of the picture represents the product? |
| 1. If Allen and Debra had done the opposite, would the product have been larger or smaller? | | | |
| Support your thinking by drawing a figure for the new product. | | | |
| 2-53 | | | |
| a. Is there more than one way to do this? | | | |
| 1. Sketch two rectangles on paper and label dimensions.   Sketch: 1 | | Are dimensions of each of the rectangles the same, or are some of them different?  Sketch:2 | |
| 1. Why might “10 + 2” and “10 + 3” Alan’s dimensions? | | | |
| 1. Which of the possible arrangements makes it easiest to see the dimensions and area of the rectangle? | | Sketch rectangle of choice. | |
| 1. How are the total value of the blocks and the dimensions of the rectangle related? | | If the one block has one square unit of area, what is the area of Alan’s rectangle? Explain in at least two ways you can determine the area. | |
| 2-54 | | | |
| 1. Why did he label the sides 10, 3, 10, and 2? | | | |
| 1. Copy Alan’s generic rectangle.   What does the “100” represent?  Fill in the other three smaller rectangles the same way. | | | |
| 1. How can you find the total area represented by the entire rectangle? Find two ways. | |  | |
| d. | | | |

**2.3.2 How can I find products efficiently?**

**Using Generic Rectangles**

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| 2-60 | |
| a. | |
| 1. Find the product. | 1. Write your answer as a numerical multiplication sentence:   Write your answer as a sum: |
| 2-61 | |
| a. |  |
| b. | d. |
| * 1. Generic Rectangle Puzzles | |
| 1. Can you find more than one possibility for any of these rectangles? | |
| 2-63 | |
|  | |
| 2-64 | |
| On a separate sheet of paper, describe how you can use a generic rectangle to multiply two numbers. Use an example. Title this entry “Generic Rectangles” and include today’s date. | |

**2.3.3 How can I understand products?**

**Generic Rectangles and Greatest Common Factor**

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| 2-70 | | |
| What is a common factor? | What is a greatest common factor? | |
| 1. How many ways can you write the dimensions of the generic rectangle at the right? | Draw a new rectangle for each way. | |
| 1. What do you think is meant by the greatest common factor of 120 and 18? | | What is the GCF for 120 and 18? |
| 2-71 | | |
| 1. Draw as many rectangles as you can and write multiplication sentence for rectangle. | | |
| 1. Draw as many rectangles as you can and write multiplication sentence for rectangle. | | |
| 2-72 | | |
| 1. Is Ethan correct? | | Draw a diagram to show his idea or show where he went wrong. |
| 1. Write a multiplication sentence with parentheses to represent Ethan’s generic rectangle. | | |
| 2-73 | | |
| a. Draw. | | Write multiplication sentence. |
| 1. Draw. | | Write multiplication sentence. |
| c. Draw. | | Write multiplication sentence. |
| 2-74 | | |
| Discuss with your group the idea of a greatest common factor. On a separate sheet of paper, write a definition for the greatest common factor. Create your own example to help explain your definition. Title this “Greatest Common Factor” and label today’s date. | | |

**2.3.4 How can I rewrite products?**

**Distributive Property**

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| 2-80 | | | | | |
| 1. Draw a diagram for 8 (32). | | | | | |
| 1. Write a number sentence that only uses addition to represent 8(32). | | | | | |
| 1. Write a number sentence with multiplication, parentheses, and addition to represent 8(32). | | | | | |
| 1. Find the product of 8(32) | | | | | |
| 2-81 | | | | | |
| 1. Draw generic rectangle. | | | Write equation. | | Find product. |
| 1. Draw generic rectangle. | | | Write equation. | | Find product. |
| 1. Draw generic rectangle. | | | Write equation | | Find product. |
| 2-82 | | | | | |
| What is the Distributive Property? | | | | | |
| a. 5 ( 6 + 9 ) | b. 11 ( 2 + 5 ) | | | c. 4 \* 512 | |
| 2-83 | | | | | |
| a. How can you see the Distributive Property in the top and bottom halves of the rectangle? | | | | | |
|  | |  | | | |
| Calculate the product of 53 (67) by evaluating each expression. | | | | | |
| 2-84 | | | | | |
| 1. 15 (38) | | 1. 92 \* 156 | | | |
| 1. 101 (34 + 62) | | 1. 525 (18) | | | |
| 2-84 | | | | | |
| On a separate sheet of paper, write a definition for the Distributive Property in your own words. Explain how it can be used to help you find products mentally without the use of a calculator. Be sure to include an example. Title this “Distributive Property” and include today’s date. | | | | | |