**Guided Notes- Chapter 2: Arithmetic Strategies and Area Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**In this chapter I CAN:**

* **analyze the strengths and weaknesses of various graphical representations of data.**
* **define and measure the area of rectangles and shapes that can be broken into rectangles.**
* **use a generic rectangle to multiply, both on paper and mentally.**
* **find the greatest common factor of selected numbers.**

**2.1.1 How can I represent data?**

**Dot Plots and Bar Graphs**

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| 2-1 How Many Pets? | |
|  | |
|  | |
| c. | d. |

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| 2-2 Cats And Dogs |
|  |
| b. |
| c. |
| d. |

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| 2-3 Mrs. McKenzie’s Class Favorite Color |
| Given the data in the table, create a graph. Decide if a dot plot, bar graph, or Venn diagram will work best.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

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| 2-4 Mr. Reed Survey |
| Create a graph of the data he collected. Decide if a dot plot or bar graph will work best.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

**2.1.2 How else can I represent data?**

**Histograms and Stem-and-Leaf Plots**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2-11 Estimating 60 Seconds | | | | | |
| What are we investigating? | How many pieces of data are we collecting? | | How will we measure it? | | What unit of measurement will we use? |
| Do you think the class would be more accurate at estimating 10 seconds or 60 seconds?  What about 200 seconds?  Why? | | What might affect the quality of the data? | | What do you expect the data to show? | |

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| 2-12 Useful Forms Of Data |
|  |
| b. |
| c. |
| d. |

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| 2-13 Creating A Histogram |
|  |
|  |
|  |
| d. |

**2.2.1 What else can I measure?**

**Explore Area**

|  |  |  |  |
| --- | --- | --- | --- |
| 2-20 How Big Is Your Desk? | | | |
|  |  |  |  |
| 2-21 | | | |
| a. | | | |
| b. | | | |

|  |  |
| --- | --- |
| 2-22 Block It | |
|  | |
|  | |
|  | |
|  | |
| 1. i. | ii. |

**2.2.2 How can I measure with square units?**

**Square Units and Area of Rectangles**

|  |  |
| --- | --- |
| 2-29 Be There, Or Be Square | |
| a. | |
| b | c. |

|  |  |
| --- | --- |
| 2-30 Nathaniel’s Patio | |
| a. | b. |
| c. | |

|  |
| --- |
| 2-31 |
| a. |
| b. |
| c. |
| d. |

|  |  |
| --- | --- |
| 2-32 | |
|  | |
|  | |
| 2-33 | |
| 1. Find the area of the figure in at least two different ways. Explain how you got your answer with diagrams and remember to label.   #1: | #2 |
| 1. Find the perimeter of the figure. | |

**2.2.3 Is there a relationship?**

**Area and Perimeter**

|  |  |  |  |
| --- | --- | --- | --- |
| 2-39 | | | |
| What is area of an object? | | What is the perimeter of an object? | |
| a. | | b. | |
| 1. Area=   Perimeter= | Area=  Perimeter= | | Area=  Perimeter= |
| 1. What is the combined area of the blocks drawn? | | | |
|  | | f. | |

|  |
| --- |
| 2-40 Changing The Area |
|  |
| b. |
|  |
| d. |

|  |  |
| --- | --- |
| 2-41 | |
|  | b. |

|  |  |  |
| --- | --- | --- |
| 2-42 | | |
| a. | b. | c. |

|  |  |
| --- | --- |
| 2-43 | |
| a. | b. |

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

**Using Rectangles to Multiply**

|  |  |
| --- | --- |
| 2-51 Special Products | |
| Explanation of strategy: | |
| 2-52 Maximizing Area | |
| a. | |
| b. | |
| c. | |
| 2-53 | |
| a. | |
| b.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 |
| c. | |
| d. | |
| e. | |
| 2-54 | |
|  | |
| b. | |
| c. | |
| d. | |

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

**Using Generic Rectangles**

|  |  |  |  |
| --- | --- | --- | --- |
| 2-60 | | | |
| a. | | | |
|  | | c. | |
| 2-61 | | | |
| a. | |  | |
| b. | | d. | |
| * 1. Generic Rectangle Puzzles | | | |
| a.i. | Ii | | iii. |
| b. | | | |
| c. | | | |

**2.3.3 How can I understand products?**

**Generic Rectangles and Greatest Common Factor**

|  |  |  |
| --- | --- | --- |
| 2-70 | | |
| What is a common factor? | What is a greatest common factor? | |
| a. | | |
| b. | | |
| 2-71 | | |
| a. | | b. |
| 2-72 | | |
|  | |  |
| 2-73 | | |
| a. Draw. | | Write multiplication sentence. |
| 1. Draw. | | Write multiplication sentence. |
| c. Draw. | | Write multiplication sentence. |

**2.3.4 How can I rewrite products?**

**Distributive Property**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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? | | | | | |
|  | |  | | | |