**Guided Notes- Chapter 1: Introduction and Representation Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**In this chapter I CAN:**

* **work within a team to solve challenging problems and activities**
* **organize data and use mathematical reasoning to make predictions**
* **represent mathematical ideas in numerous ways, including numbers, diagrams, tables, and words.**

**1.1.1 What does this representation tell me?**

**Visualizing Information**

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| 1-1 Birthday Bonanza | | |
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| 1. Which month has the most birthdays in your class? | Which has the fewest? | How can you tell by looking at the histogram? |
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| 1-2 Sleepy Time | | | |
|  | | | |
| b. Which dots represent the students who get the most sleep? | The least sleep? | | How much sleep does each of these students get? |
| c. If you were to go to bed an hour earlier, how would your sticky dot move? | | What if you were to get up an hour earlier? | |
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**1.1.2 How does it change?**

**Perimeter and Area Relationships**

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| --- |
| 1-5 Toothpicks and Tiles |
| a. |
|  |
| c. |

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| --- |
| 1-6 Collaborative Learning Expectations |
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| --- |
| 1-8 |
| Does changing the number of toothpicks always change the number of tiles?  Does changing the number of tiles always change the number of toothpicks? |
| a. |
| b. |

|  |
| --- |
| 1-9 |
| a. |
| b. |

**1.1.3 How does it grow?**

**Describing and Extending Patterns**

|  |
| --- |
| 1-15 Dot Pattern |
| a.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| b. |
| c. |
| d. |

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| 1-16 – Team Poster |

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| 1-17 |
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**1.1.4 How can I organize information?**

**Representing Data**

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| --- | --- | --- | --- |
| 1-24 Jumping Frog Jubilee | | | |
| 1. Record brainstormed questions. |  |  |  |
| c. Write the question:  Answer that uses all of the numbers. | | Write the question:  Answer that uses just some of the data. | |

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| 1-25 |
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**1.1.5 How can I make sense of it?**

**Making Sense of a Logic Problem**

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| 1-33 Trail Mix |
| Your team’s conjecture:  Explanation: |

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| 1-34 |
| 1. What happens each time? |
| 1. Would you have gotten similar results if you had exchanged 5 beans? 6 beans? 20 beans? Explain: |
| 1. Conjecture and explanation: |

**1.2.1 How can I represent it?**

**Multiple Representations**

|  |  |  |  |
| --- | --- | --- | --- |
| \*Define 'Quantity'- | | | |
| 1-41 | | | |
|  | | | |
| 1-42 | | | |
|  | | | |
| 1-43 | | | |
| a. | | b. | |
| c. | | | |
| 1-44 | | | |
|  |  | |  |

**1.2.2 How Do They Compare?**

**Representing Comparisons**

|  |  |
| --- | --- |
| 1-51- | |
| a. | b. |
| c. | d. |
| 1-52- | |
| a. | b. |
| c. | |
| 1-53- | |
|  | |
| 1-54- | |
| a. | b. |
| 1-55 | |
|  | |

**1.2.3 What Can A Rectangular Array Show?**

**Characteristics Of Numbers**

|  |  |
| --- | --- |
| Write a definition for 'Prime Number' & list 5 examples of prime numbers- | |
| Write a definition for 'Composite' & list 5 examples of composite numbers- | |
| Define 'Rectangular Array' & draw an example of one. Label the where the 'rows' & 'columns' are. | |
| 1-62- How Many Pennies? Part 1 | |
| a. | |
| b. | |
| c. | |
| 1-63 | |
| a. | b. |
| 1-64 | |
|  | |
| 1-65- How Many Pennies (Part 2) | |
| a. | b. |
| c. | |

**1.2.4 What Patterns Can I Find?**

**Products, Factors, & Factor Pairs**

|  |  |
| --- | --- |
| 1-73. | |
|  | |
| 1-74 | |
|  | |
| 1-75. Finding Patterns | |
| a. | |
| b. | |
| c. | |
| 1-76. | |
| a. | b. |
| c. Define 'Factor Pair'. List all of the factor pairs of 36. | |
| 1-77. | |
| What is 'Frequency'? | |
| a. | |
| b. | |
| c. | |
| 1-78. Prime Factorization | |
| a. What are all of the factors of 200? | |
| b. Define 'Prime Factor' & list the prime factors of 200. | |
| c.  \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ means to write a number as a product of only prime numbers  How could you write 200 as a product using only prime factors? | |
| d. | |
| e. | |
| 1.79 | |
| a. 100: | |
| b. 36: | |
| c. 54: | |
| d. 600: | |
| 1-80. | |
| a. | |
| b. | |
| c. | |
| 1-81. Why Does It Work? | |
| a. What is the pattern? | |
| b. | |