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UNIT 10 LESSON 4

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| AIM: | SWBAT find means  |

**THINK ABOUT IT!4**

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| **Name** | **Number of People** |
| Ossie | 2 |
| Leon | 3 |
| Gary | 3 |
| Ruth | 4 |
| Paul | 6 |
| Arlene | 6 |

A group of six students made the table to the right about the number of people in their households. They wanted to figure out the typical number of people in a household using the data.

One student, Robert, said that median is 3.5, so the typical number of people in a house is between 3 and 4.

Another student, Michelle, had a different idea to figure out what was typical. She first represented the number of people in each household using cubes (below). She then redistributed the cubes so that each household had the same number of cubes in its stack of cubes.



Using Michelle’s method, how many cubes are in each of the six stacks after she redistributes the cubes?

Do you think the number of cubes in each of the new stacks is representative of the typical number of people in a household according to the data? Why?

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Key Point

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| The mean defines the \_\_\_\_\_\_\_\_\_\_\_\_\_ of a data set taking into account some/all data points. |

**Interaction with New Material**

*Ex. 1)* Michelle asked her classmates for the number of hours that they usually sleep when there is no school the next day. Their responses are recorded below.



* Use the dot plot to determine the average number of hours of sleep that her classmates get on a weekend night. What does this value represent?
* Michelle asked two more people how many hours of sleep they get on a weekend night and they both said six hours. What is the mean of the data set after adding two more values to the data set?

**PARTNER PRACTICE**

CFS:

1. Annotations: circle key words/underline what you’re solving for
2. All work is shown
3. Mean is identified & BOXED

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| *Bachelor Level* |

1. Robert asked five sixth graders how many pets each had. Their responses were 2, 6, 2, 4, and 1. Robert showed the data with cubes as follows:

Find the mean number of pets of the five sixth graders using the ‘fair share’ method and the arithmetic approach.

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| *Master Level* |

1. The following are lengths (in millimeters) of radish seedlings grown in identical conditions for three days:

12, 11, 12, 14, 13, 9, 13, 11, 13, 10, 10, 14, 16, 13, 11

1. Tiffany said that the mean length for the 15 radish seedlings is 182 mm. Does her average make sense? Why? If not, what mistake do you think she made?

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1. Find the mean length for these 15 radish seedlings. Show your careful calculations.

**INDEPENDENT PRACTICE**

CFS:

* Annotations: circle key words/underline what you’re solving for
* All work is shown
* Mean is identified & BOXED

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| *Bachelor Level* |

1. The number of pockets in the clothes worn by five students to school today is 2, 2, 2, 4, and 5. Paige produces the following cube representation as she does the fair share process.



What is the average number of pockets in the clothes worn by the five students? Solve using the ‘fair share’ method and the arithmetic approach.

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| *Master Level* |

1. Adam counted the number of squirrels he saw on his way to school each day for four days. He saw 4, 1, 3, and 6 squirrels over the four days. Adam produces the following cube representation as he does the fair share process. How should he finish the process of sharing the 3, 3, 3, and 5 cubes fairly?



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1. A store on Madison Avenue sells luxury fur coats. The inventory is as follows:

|  |  |
| --- | --- |
| **Cost** | **Number of Coats** |
|  $75 | 8 |
| $80 | 3 |
| $85 | 6 |

What is the average price of the coats at the store?

1. Your family decides to go on a road trip from New York to San Francisco, California. The total distance is 2,906 miles. If you want to get to California in 8 days, on average, how many miles must you drive each day?
2. The table below shows the amount of sugar used in different servings of pie at the famous, Milk Bar in Manhattan.

|  |  |
| --- | --- |
| **Pie Flavors** | **Sugar per Serving** |
| Chocolate Pie | $$\frac{4}{5} cup$$ |
| Candy Bar Pie | $$2\frac{1}{10} cup$$ |
| Pecan Pie | $$1.6 cup$$ |
| Apple Pie | $$\frac{12}{5} cup$$ |

1. Make a prediction. What is the mean of this data set? Explain how you made your prediction?

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1. What is the average amount of sugar used in pies at Milk Bar?
2. Nathan asked his classmates to estimate the number of hours they spend doing homework each week. The following data shows the results of his survey.

**9, 4, 8, 2, 7, 3, 5, 6, 1, 4, 7, 6, 8, 5, 6, 5, 6, 7, 11, 14, 6**

* 1. Explain why the average of this data set cannot be larger than 14 or less than 1.

* 1. Find the mean of the data
	2. Draw a line plot depicting this data
	3. Are there any gaps, clusters, or outliers in the data? If so, identify them.

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| *PhD Level* |

1. Tatiana loves the Twilight series. She reads the first book every night for 3 nights. The average number of pages she read per night was 60 pages. How many pages could she have read each night?

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

CFS:

* Annotations: circle key words/underline what you’re solving for
* All work is shown
* Mean is identified & BOXED

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

**U10L4 EXIT TICKET3**

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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. The points scored in each game by the middle school basketball team for 9 games are 21, 35, 14, 17, 28, 14, 7, 21 and 14. What is the average number of points scored by the team?

1. The weight of various insects at a science lab are as follows: 6.1 ounces, 5.2 ounces, 7 ounces, 3.1 ounces. Lauren found the mean weight to be 7 ounces. Does her average make sense given the data set? Explain using reasoning.

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