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| **Eating Cookies- 6.EE.9** | |
| **Domain** | **Expressions and Equations** |
| **Cluster** | **Represent and analyze quantitative relationships between dependent and independent variables.** |
| **Standard(s)** | **6.EE.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time. |
| **Materials** | Activity sheet |
| **Task** | **Eating Cookies**  Sally eats 3 cookies a day. Mikey eats 4 cookies a day.  Part 1:  Write an equation to find the amount of cookies that each person eats in terms of the number of days.  Part 2:  Make a table to show how many cookies each person has eaten each day for a week.  Part 3:  Make two line graphs on the same axes showing the relationships between the number of cookies eaten and the number of days. Label each ordered pair on the line graph.  Part 4:  One day Mikey says to Sally, I have eaten 5 more cookies than you have. What day does Mikey say this to Sally? Explain how you know. |

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| **Rubric** | | |
| **Level I** | 1. **Level II** | **Level III** |
| Developing Proficiency   * Student uses inappropriate solution strategy and does not get the correct answer. | Not Yet Proficient   * There are one or two errors. | Proficient in Performance   * Accurately solves problem. * Part 1: Sally: 3x *D* or 3*D*; Mikey: 4x*D* or 4*D* * Part 2: Table: Days should increase by 1 up to 7. Sally’s cookies should be multiples of 3 from 3 to 21. Mikey’s cookies should be multiples of 4 from 4 to 28. * Part 3: The line graphs are correct and have the correct ordered pairs (Day, Cookies) for each value. * Part 4: Mikey said this to Sally and Day 5. On Day 5, Mikey has eaten 20 cookies and Sally has eaten 15 cookies. This is noticed on the table or the graph. |

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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| 3. Constructs viable arguments and critiques the reasoning of others. |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| **6. Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Eating Cookies**

Sally eats 3 cookies a day. Mikey eats 4 cookies a day.

Part 1:

Write an equation to find the amount of cookies that each person eats in terms of the number of days.

Part 2:

Make a table to show how many cookies each person has eaten each day for a week.

Part 3:

Make two line graphs on the same axes showing the relationships between the number of cookies eaten and the number of days. Label each ordered pair on the line graph.

Part 4:

One day Mikey says to Sally, I have eaten 5 more cookies than you have. What day does Mikey say this to Sally? Explain how you know.