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| **Saving Your Change- 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** | **Saving Your Change**Mariah has a coin jar that she uses to collect and save her change. She collects $2.35 each month in change. Part 1:Write an equation to find the amount of money she has saved for *M* months.Part 2: Make a table to show how much money Mariah would have after each month during the first year she started saving her change. Mariah started with no change. Part 3:After a few years Mariah has between $45 and $55. By this time how long could Mariah have been collecting change? Part 4:Write an explanation about you solved Part 3.  |

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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: Change = $2.35 x *M*
* Part 2: Month: Value- 1: $2.35, 2: $4.70, 3: $7.05, 4: $9.40, 5: $11.75, 6: $14.10, 7: $16.45, 8: $18.80, 9: $21.15, 10: $23.50, 11: $25.85, 12: $28.20.
* Part 3: 45 = $2.35 x M. If M = 19 then Mariah has saved $44.65,so she needs to have been saving change for at least 20 months.

55 = $2.35 x M. If M = 24, then Mariah has saved $56.40, so she has saved change for no more than 23 months. She has saved change between 20 and 23 months. * Part 4: The explanation is clear and accurate.
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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. |

**Saving Your Change**

Mariah has a coin jar that she uses to collect and save her change. She collects $2.35 each month in change.

Part 1:

Write an equation to find the amount of money she has saved for *M* months.

Part 2:

Make a table to show how much money Mariah would have after each month during the first year she started saving her change. Mariah started with no change.

Part 3:

After a few years Mariah has between $45 and $55. By this time how long could Mariah have been collecting change?

Part 4:

Write an explanation about you solved Part 3.