Smart Money

TR006 scoring rubric

Math Domain
☑ Number/Quantity ☐ Shape/Space ☐ Function/Pattern
☐ Chance/Data ☐ Arrangement

Math Actions (possible weights: 0 through 4)
2 Modeling/Formulating 3 Manipulating/Transforming
3 Inferring/Drawing Conclusions 3 Communicating

Math Big Ideas
☐ Scale ☐ Reference Frame ☐ Representation
☐ Continuity ☐ Boundedness ☐ Invariance/Symmetry
☐ Equivalence ☐ General/Particular ☐ Contradiction
☐ Use of Limits ☐ Approximation ☐ Other

Part 1: Compound Interest
1. Parents would add .12, for a total of $1.31.
2. Using the attached sheet to keep track of their calculations, students should come up with about $16.00 at the end of the month.
3. Using the attached sheet to keep track of their calculations, students should arrive at about $280.00
4. The students will have a little over $450.00 in their bank account at the end of five years.

Part 2: Delaying Compound Interest
5. After 30 days, the student has $16.00; after 27 days, the student’s sister has $13.22, and therefore loses $2.78 by delaying the compounding for three days.

Part 3: Credit Cards
6. The total amount at the end of 30 days would be about $1,387.
7. You would owe $612.00 at the end of the first month, or about $761 if you wait a year to pay it off.
   Some students may notice that their answers correspond to days 1 and 12 from the previous question, and may not bother filling out the chart.

Part 4: Putting it Together
The student should write a letter that reflects what they have learned about compound interest, credit card interest, and the growth of money.
<table>
<thead>
<tr>
<th></th>
<th>partial level (1 or 2)</th>
<th>full level (3)</th>
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</thead>
<tbody>
<tr>
<td><strong>Modeling/Formulating</strong></td>
<td>Student does not demonstrate an understanding of how compound interest grows.</td>
<td>Student exhibits an understanding of compound interest and is able to apply that understanding to the questions in Part I of the task.</td>
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<tr>
<td>(weight: 2)</td>
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<tr>
<td><strong>Transforming/Manipulating</strong></td>
<td>Student performs some, but not all of the calculations correctly.</td>
<td>Student is able to perform all calculations correctly, and is consistent in the rounding method used.</td>
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<td>(weight: 3)</td>
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<tr>
<td><strong>Inferring/Drawing Conclusions</strong></td>
<td>Student does not exhibit an understanding of the difference between adding interest and charging interest, and/or why different time periods affect the final amount.</td>
<td>Student exhibits a clear understanding of what happens to money invested at different rates, and for differing periods of time.</td>
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<tr>
<td>(weight: 3)</td>
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<tr>
<td><strong>Communicating</strong></td>
<td>Verbal explanations are unclear or imprecise.</td>
<td>All verbal explanations are clear, concise, and complete.</td>
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<td>(weight: 3)</td>
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