

<b>LessonTitle: Choose a Prize</b>		<b>Alg 4.5</b>
<b>Utah State Core Standard and Indicators</b> Algebra Standard 2.1 Process Standards 1-5		
<b>Summary</b>		
In this lesson, students choose which prize they want based on numeric linear and exponential growth patterns. They create scatter plots and differentiate between repeated addition and repeated multiplication.		
<b>Enduring Understanding</b>	<b>Essential Questions</b>	
Graphs tell stories about numeric patterns and relationships in the real world.	What kinds of stories do graphs tell?	
<b>Skill Focus</b>	<b>Vocabulary Focus</b>	
<ul style="list-style-type: none"> <li>• Variable relationships, equations and graphs</li> <li>• Differentiating linear and exponential growth</li> </ul>		
<b>Assessment</b>		
<b>Materials:</b> graphing calculators		
<b>Launch</b>		
<b>Explore</b>		
<b>Summarize</b>		
<b>Apply</b>		

**Directions:**

- 1) Discuss the essential questions. The second question should be discussed further after the activities.
  - How can a graph tell a story?
  - What kinds of patterns create a straight line graph? What kinds of patterns create a curved line graph?
  - What kinds of stories do different coordinate graphs tell?
  
- 2) Move to the Choose a Prize Activity. Direct the recording of information on the TI calculator screen. Then proceed to using lists and creating scatter plots. Facilitate a large group discussion regarding some of the questions asked (students are not writing, only listening and sharing ideas). Then have students respond to the questions individually. Stress the importance of responding thoughtfully and thoroughly.

## Alg 4.5

## Choose a Prize

Students at Jordan High School have been playing the Math Wiz game. After the game, the winners will have 10 seconds to decide which prize to choose. They get to keep the money from the twentieth day.

**Prize A:** Start with \$100, add \$100 each day, for 20 days. Keep only the money from the twentieth day.

**Prize B:** Start with \$.01, double your money each day, for 20 days. Keep only the money from the twentieth day.

1) Investigate each prize numerically on the home screen of your calculator.

**Prize A:**

**Prize B:**

2) Investigate both prizes in one “table.” (Put them into lists)  
What do you observe?

3) View the two data sets graphically using 3 Lists and 2 scatter plots. Draw a sketch of your graph and label each graph.



4) What does repeated addition look like? Which prize represents this?

5) What does repeated multiplication look like? Which prize represents this?

7) Explain the story the graph tells you about the prizes?