

Lesson 1.1.3: Graphs of Exponential Functions

Targets:

1. I can choose and interpret the scale on a graph to appropriately represent an exponential function.
2. I can plot points representing the number of bacteria over time.

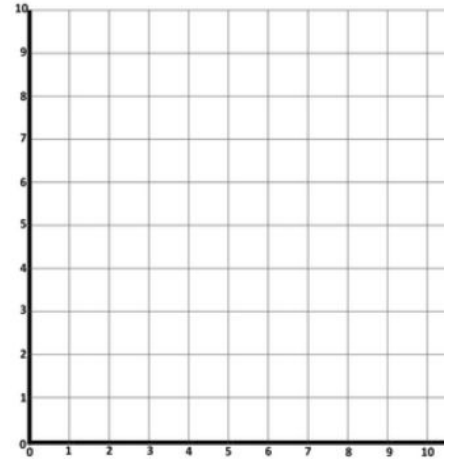
Graphing Story 1

Read the story to the below. Then translate the story into a graph.

Consider the story:

Darryl lives on the third floor of his apartment building. His bike is locked up outside on the ground floor. At 3:00 p.m., he leaves to go run errands, but as he is walking down the stairs, he realizes he forgot his wallet. He goes back up the stairs to get it and then leaves again. As he tries to unlock his bike, he realizes that he forgot his keys. One last time, he goes back up the stairs to get his keys. He then unlocks his bike, and he is on his way at 3:10 p.m.

Sketch a graph that depicts Darryl's change in elevation over time.

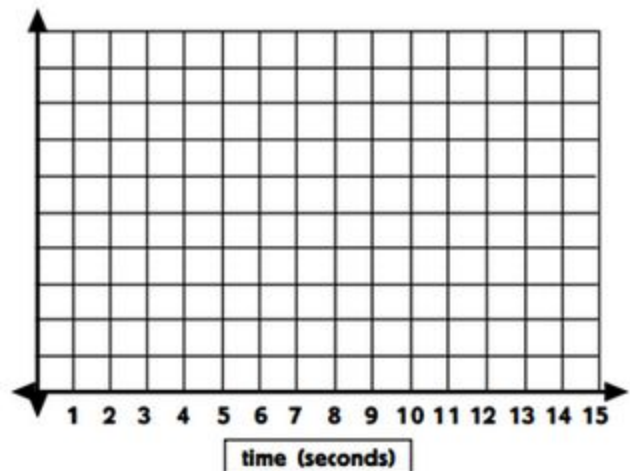


Bacteria Growth (part 1)

This video shows bacteria doubling every second. Make a table that represents the number of bacteria over time. I recommend watching it on slow motion and pausing it at every second. Make sure your table goes up to 5 seconds and stop. It gets a little tricky at 4 seconds and 5 seconds, so make your best educated guess.

Table:

Graph:



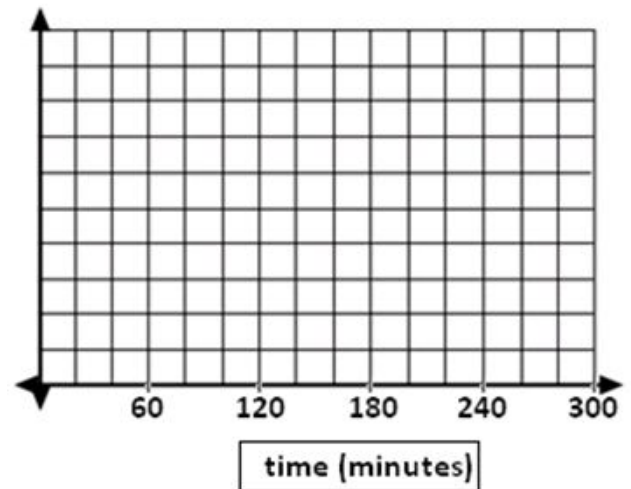
Bacteria Growth (part 2)

We want to start tracking in "real time" now instead of the video time. Remember, every second in the video actually represents 20 minutes in real time.

Table:

Original time (in seconds)	New time (in minutes)	Number of bacteria
0		
1		
2		
3		
4		

Graph:



Exit Ticket

1. What shape does the graph of an exponential function make?
2. What is the difference between an exponential function and a quadratic function?
3. What is the difference between an exponential function and a linear function?
4. Graph the same data from the bacteria video, but this time do it in terms of hours. Only graph the first 5 hours.

