Task

Student Text Page
360

Suggested Timing
60–75 min

Tools
- 100 coins
- graphing calculator

Related Resources
- BLM 6–11 Task: Not Fatal Rubric

Ongoing Assessment
- Use **BLM 6–11 Task: Not Fatal Rubric** to assess student achievement.

Not Fatal

Teaching Suggestions

This performance task is designed to assess the specific expectations covered in Chapter 6.

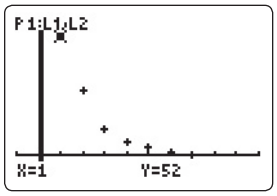
The following Math Processes Expectations can be assessed.

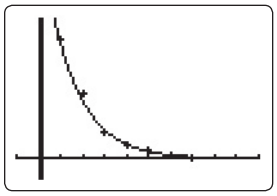
- Problem Solving
- Reasoning and Proving
- Reflecting
- Selecting Tools and Computational Strategies
- Connecting
- Representing
- Communicating

Level 3 Sample Response

a) We performed five simulations. Then we found the mean for each day, to the nearest day, and plotted that data.

Trial Number	Number of Tails Left									
1	49	26	9	4	3	0				
2	51	30	18	7	6	2	1	0		
3	51	32	14	8	3	3	1	0		
4	54	27	12	8	5	2	2	2	1	0
5	55	26	9	3	1	1	1	0		
mean	52	28	12	6	4	2	1	0	0	0





b) An equation for the curve of best fit is $y = 100\left(\frac{1}{2}\right)^x$. The 100 represents the number ill at time 0. The base of $\frac{1}{2}$ shows the probability of recovery or staying ill. However, unlike the exponential model never reaching zero, we consider a decimal number less than 1 to be full recovery.

c) Using the model it would take approximately 11 days for 1600 people to get well and go home. Solved for x: $1600\left(\frac{1}{2}\right)^x < 1$.

d) $1600\left(\frac{1}{2}\right)^{11} = 0.78125$ which is less than one person so everyone recovered and went home.

e) $x = \dfrac{\log\left(\frac{N}{1600}\right)}{\log(.5)}$ where x represents the number of days, N represents the number of people who are still ill. Since the original model was exponential, the inverse model (with days as the dependent variable) would be logarithmic.

f) This model would be appropriate for any population growth or decay question.