



*Algebra 1B*  
Module 6

Student Name: \_\_\_\_\_ Teacher Name: \_\_\_\_\_

As you work through the chapters in your Algebra 1 course, you will be encouraged to think and to make conjectures while you persevere through challenging problems and exercises. You will make errors – and that’s okay! Learning and understanding occur when you make errors and push through mental roadblocks to comprehend and solve new and challenging problems.

Text: *Algebra 1 Common Core*, Big Ideas, 2015

**To ensure you are learning, you must show your work for all exercises.  
YOU WILL NOT EARN CREDIT FOR ANSWERS WITHOUT WORK.**

**Chapter 6: Exponential Functions and Sequences (6.1-6.6)**

- \_\_\_\_\_ Maintaining Mathematical Proficiency (page 289): Complete exercises #1-9 all
- \_\_\_\_\_ 6.1 Properties of Exponents: Read the lesson and complete exercises #5-10 all, 13-18 all, 23-28 all, 35, 37, 38, 47, 48, 51, 70, 71, 72
- \_\_\_\_\_ 6.2 Radicals and Rational Exponents: Read the lesson and complete exercises #3-33 odd numbers, 57, 58
- \_\_\_\_\_ 6.3 Exponential Functions: Read the lesson and complete exercises #1, 2, 3, 5-10 all, 12, 14-18 all, 21-26 all, 41, 64, 65, 66, 67
- \_\_\_\_\_ 6.4 Exponential Growth and Decay: Read the lesson and complete exercises #1, 5-10 all, 16, 17, 18, 21, free graphing calculator (www.desmos.com/calculator),
- \_\_\_\_\_ 6.5 Solving Exponential Equations: Read the lesson and complete exercises #3-10 all, 13, 19, 43, 47, 59, 60, 62
- \_\_\_\_\_ 6.6 Geometric Sequences: Read the lesson and complete exercises #1, 3-7 all, 9, 12, 15-20 all, 25, 33, 35
- \_\_\_\_\_ 6.7 Recursively Defined Sequences: Read the lesson and complete exercises #3, 5, 7, 13, 15, 17, 23, 24, 39, 40, 45, 47

*Students must complete the Chapter Review and Project with a teacher or tutor at school.*

- \_\_\_\_\_ Chapter Review (pages 348-350): Complete exercises #1-31 all
- \_\_\_\_\_ Complete the attached Project (No project = No credit)

**A teacher or tutor reviewed the Chapter Review and Project with the student.**

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

*Grade*



**Algebra 1 Project**  
**Module 6: Exponential Functions and Sequences**  
**Textbook Pages: 289-352**

**Zombie Attack**

Be sure to answer questions in complete sentences.

**Materials:**

**Two handfuls of beans (or some other small object that you can easily move around)**

**Pencil**

Zombie Attack at Learning Works Homeboy:

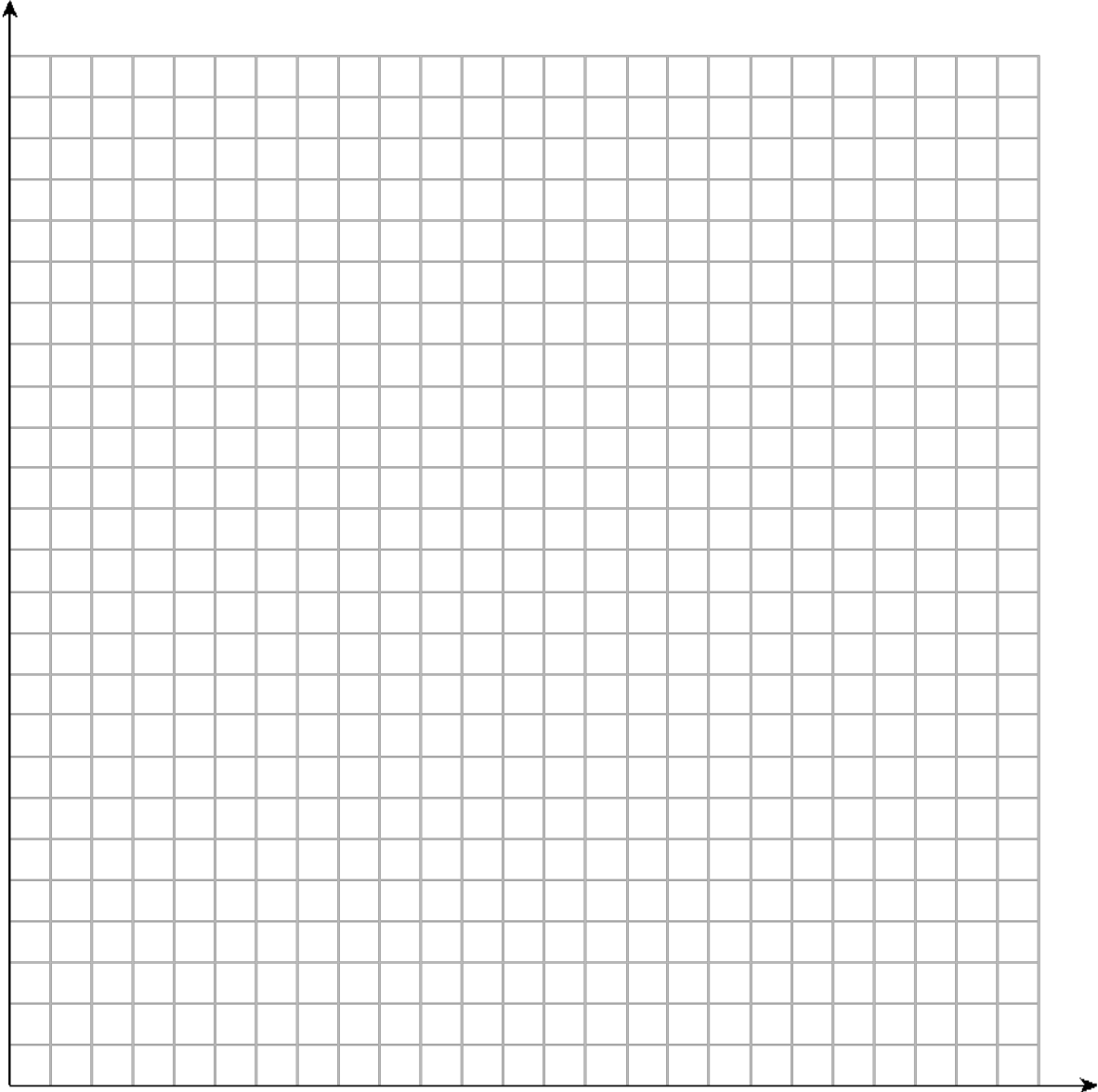
There is a single “alpha zombie” among the 100 students on the Homeboy campus. Each day, the alpha zombie infects 2 humans, who then become zombies.

1. Using beans, illustrate the zombie attack for a few days. Complete the table below with the total number of zombies on each day. (If project is not done with a teacher or tutor, pictures or hand drawings of the beans need to be submitted along with the project).

Days	0	1	2	3	4	5	6	7
Zombies								

Use this space for hand drawings or pictures.

2. Graph your data below. (**Note:** we want to use the graph to see how long it will take for all the students on campus to be infected. Label this y-axis all the way up to 100, and label the x-axis all the way up to 50.)



3. How many days will it take for all the students at LW Homeboy to be infected and become zombies?

Zombie Attack at Learning Works Pasadena:

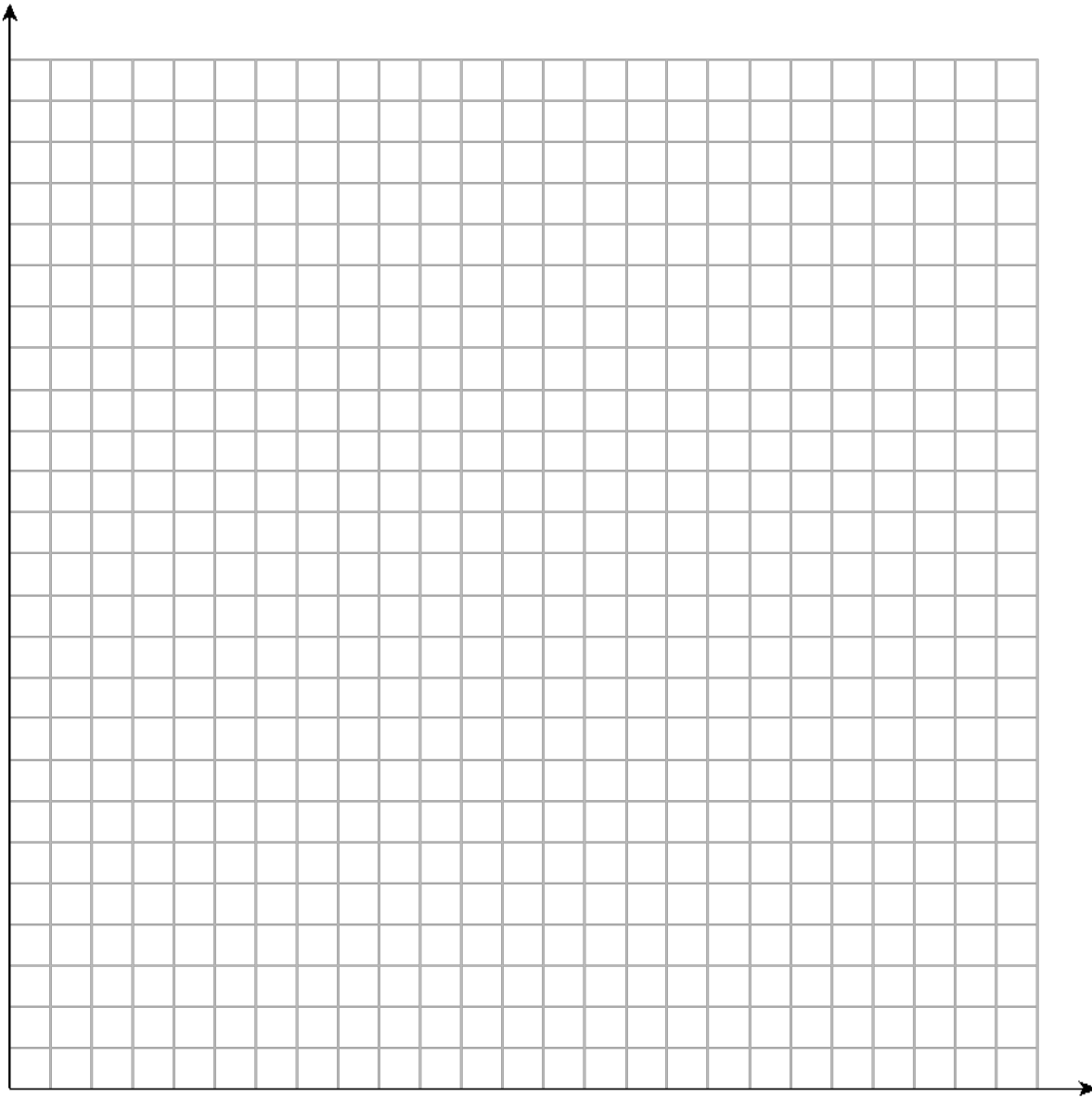
There is a single “alpha zombie” among the 100 students on the Pasadena campus. Each day, EVERY zombie (not just the alpha zombie) infects 2 students each. Create a table of the number of zombies that exist from day 0 to day 5.

- Using beans, illustrate the zombie attack for a few days. Complete the table below with the total number of zombies on each day. (If project is not done with a teacher or tutor, pictures or hand drawings of the beans need to be submitted along with the project).

Days	0	1	2	3	4	5	6	7
Zombies								

Use this space for hand drawings or pictures.

5. Graph your data below. (**Note:** we want to use the graph to see how long it will take for all the students on campus to be infected. Label this y-axis all the way up to 100, and label; the x-axis all the way up to 25.)



6. How many days will it take for all the students at LW Pasadena to be infected and become zombies?

7. In which situation are students infected and becoming zombies faster?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
8. Why did students become zombies so much faster at one campus versus the other?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
9. Describe the two different graphs. Are there any similarities? Any differences?