learning focus:

- ✓ graph exponential functions and identify key features including domain and range
- ✓ interpret the meaning of the values a and b in functions of the form $y = ab^x$
- ✓ write exponential functions to describe growth and decay

EXPONENTIAL FUNCTIONS UNIT

ALG 1

8 DAY CCSS-ALIGNED UNIT

A MANEUVERING THE MIDDLE ® RESOURCE

EXPONENTIAL FUNCTIONS

ALG 1

an 8 day CCSS-aligned unit

CCSS: A.SSE.1, A.SSE.3c, A.CED.1, F.IF.4-6, F.IF.8b, F.BF.1a, F.LE.1-3, F.LE.5

ready-to-go, scaffolded student materials

EXPONENTIAL FUNCTIONS UNIT

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student friendly + real-world application

graphic organizers

Unit: Exponential Functions
Student Handout 6

Name _____
Date _____ Pd_____

INVESTIGATING FUNCTIONS

Complete each chart to review the characteristics of linear and and exponential functions.

LINEAR FUNCTION		EXPONENTIAL FUNCTION	
GRAPH:	EQUATION:	GRAPH:	EQUATION:
	VERBAL DESCRIPTION:		

Use the information from the chart to cla

A There are 14 fruit flies in a jar and the number of fruit flies doubles each day.

B

C The acres of field remaining to be plowed if a farmer plows 25% of the acres each week.

D

Record the letter of situations A-D next to

When a function is represented as a table function type.

LINEAR

- The y-values will change by a _____ over equal intervals of x-v
- The rate of change is _____.

EXAMPLE:

x	0	1	2	
y	-3	2	7	

Describe how the y-values change as x increases by 1.

In 1-3, determine whether each table represents a function that is linear, exponential or neither. Justify your answers.

1.

x	y
-1	9
0	5
1	1
2	-3

2.

x	y
-2	8
-1	2
0	0

3.

x	y
-4	160
-3	80
-2	40

In 4-7, use your knowledge of differen

4. Tamisha determines the table below disagree? Explain your reasoning.

5. Tien designed a new software, and contract. Company A offers Tien $2,0 Company B will offer Tien $800 and w

a. Identify the type of function that ca

b. Fill in the tables below to determine

COMPANY A

MONTHS	0	1	2
PAYMENT	2,000		

6. The table shows the number of coff that a linear function should be used to be used to model the data. Which stude Justify your answer.

7. Three functions are given in the box

a. Use your calculator to graph each f sketch the functions on the graph a

b. Identify the type of each function.

c. For which function type will the y-va

Unit: Exponential Functions
Homework 6

Name _____
Date _____ Pd_____

INVESTIGATING FUNCTIONS

For 1-6, use the table to classify each representation as linear, exponential or neither. Then justify your reasoning.

1

x	-1	0	1	2
y	250	100	40	16

2 A photographer has 450 photos to edit from a wedding and he can edit 30 pictures each hour.

3

x	2	4	7	10
y	-2	-4	-8	-16

4 In a debate competition there are 44 debaters. After each round, half of the debaters are eliminated.

5

# of days	0	1	2	3
# of coins	45	30	15	0

6 A baby elephant weighs 200 pounds at birth. His weight increases by 12% each week.

	FUNCTION TYPE	JUSTIFICATION
1		
2		
3		
4		
5		
6		

For 7-11, use your knowledge of functions to answer each question.

7. A geologist discovered a crystal in a mine that was 3 inches long. The crystal increases in length by 20% each year. Which of the following graphs could represent this situation?

a. 

b. 

c. 

d. 

skill application

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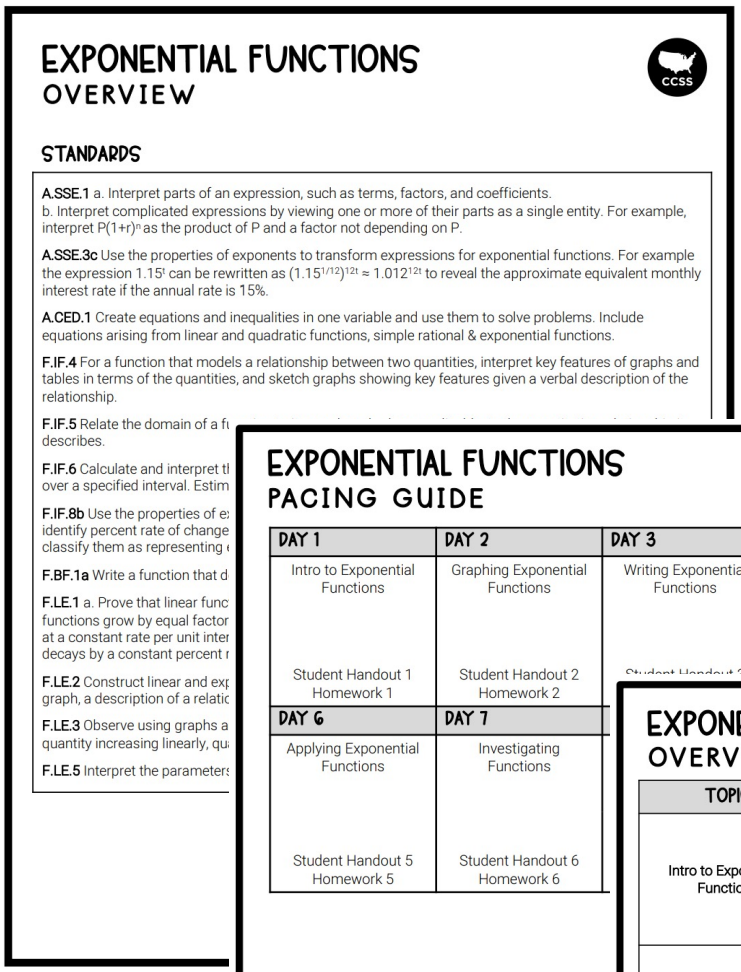
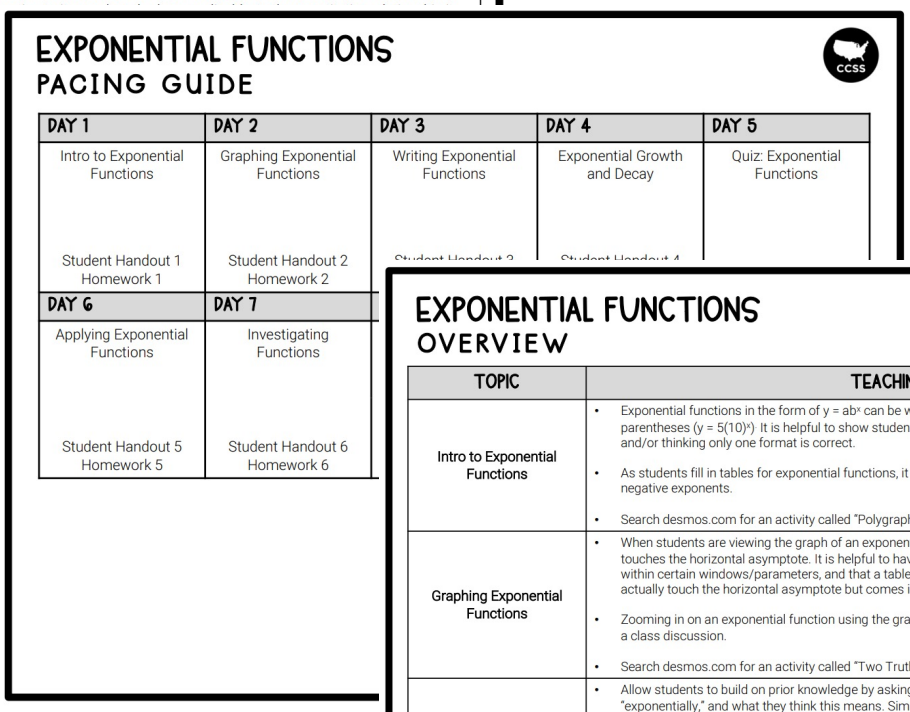
streamline your planning process with unit overviews

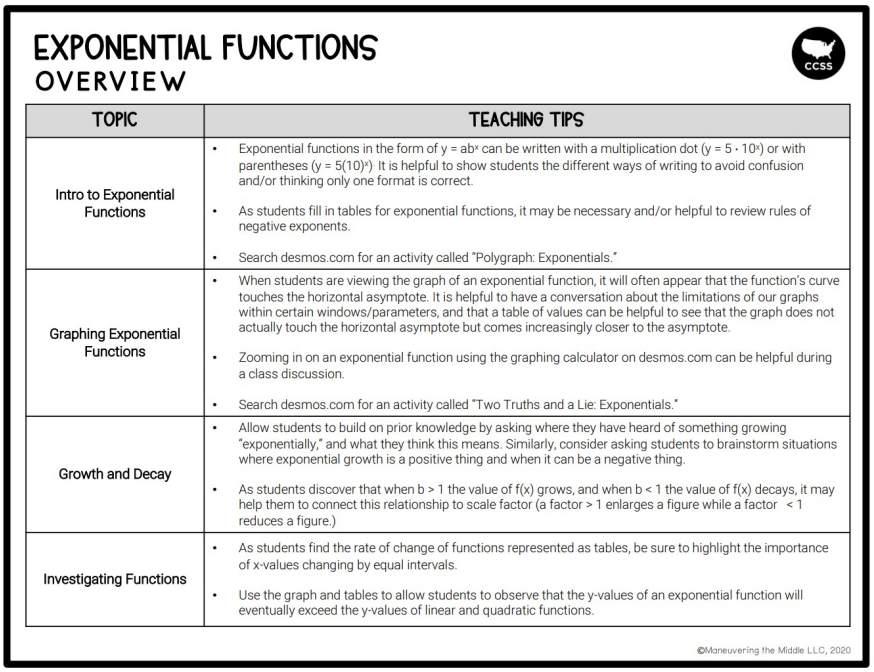


✓ key vocabulary

✓ vertical alignment



sample pacing calendar



teaching ideas

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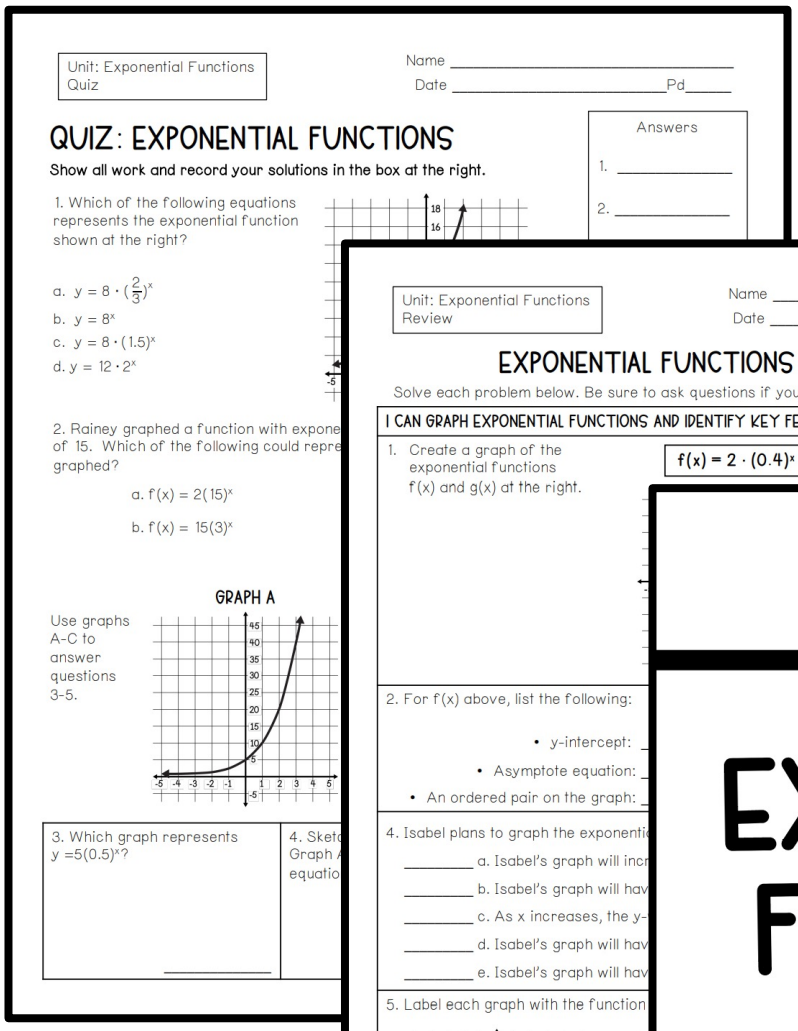
unit study guide + assessments


Unit: Exponential Functions Quiz

Name _____

Date _____ Pd_____

QUIZ: EXPONENTIAL FUNCTIONS

Show all work and record your solutions in the box at the right.

Answers

1. _____

2. _____

1. Which of the following equations represents the exponential function shown at the right?

a. $y = 8 \cdot (\frac{2}{3})^x$

b. $y = 8^x$

c. $y = 8 \cdot (1.5)^x$

d. $y = 12 \cdot 2^x$

2. Rainey graphed a function with expone
of 15. Which of the following could repre
graphed?

a. $f(x) = 2(15)^x$

b. $f(x) = 15(3)^x$

GRAPH A

Use graphs A-C to answer questions 3-5.

3. Which graph represents $y = 5(0.5)^x$?

Unit: Exponential Functions Review

Name _____

Date _____ Pd _____

EXPONENTIAL FUNCTIONS STUDY GUIDE

Solve each problem below. Be sure to ask questions if you need more help with a topic.

I CAN GRAPH EXPONENTIAL FUNCTIONS AND IDENTIFY KEY FEATURES.

1. Create a graph of the exponential functions f(x) and g(x) at the right.

$f(x) = 2 \cdot (0.4)^x$

$g(x) = -3 \cdot (1.5)^x$

2. For f(x) above, list the following:

- y-intercept: _
- Asymptote equation: _
- An ordered pair on the graph: _

4. Isabel plans to graph the exponenti

_____ a. Isabel's graph will incr

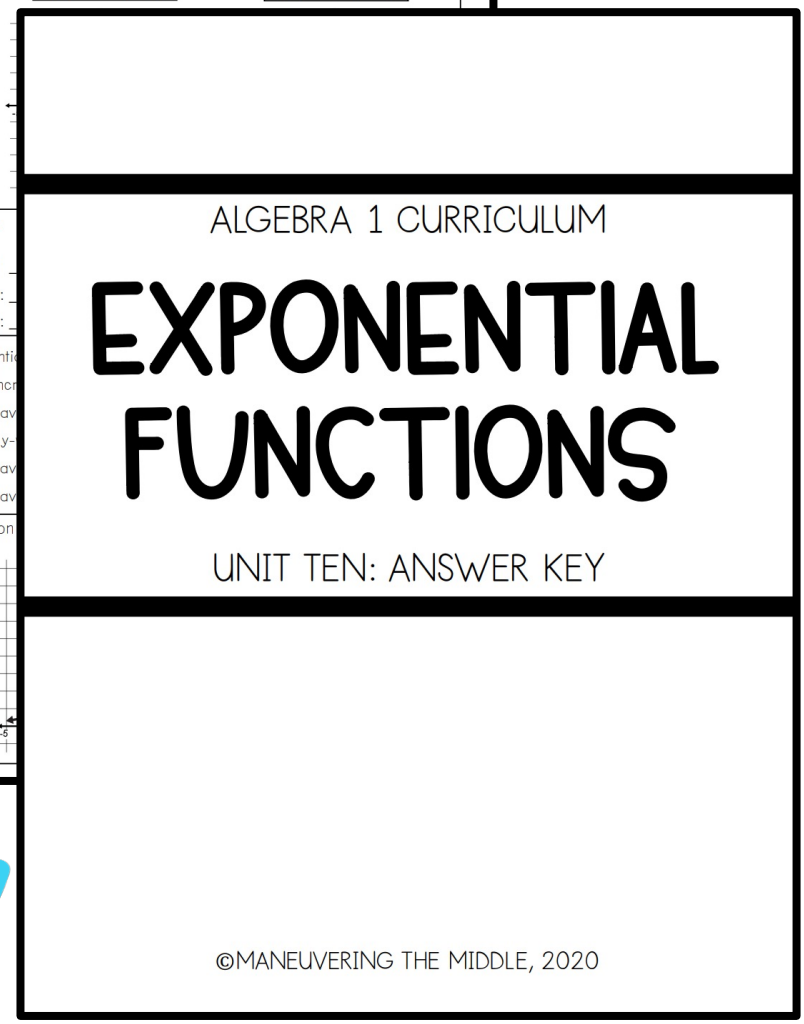
_____ b. Isabel's graph will hav

_____ c. As x increases, the y-

_____ d. Isabel's graph will hav

_____ e. Isabel's graph will hav

5. Label each graph with the function


ALGEBRA 1 CURRICULUM

EXPONENTIAL FUNCTIONS

UNIT TEN: ANSWER KEY

- ✓ quizzes
- ✓ editable unit test

answer keys included

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