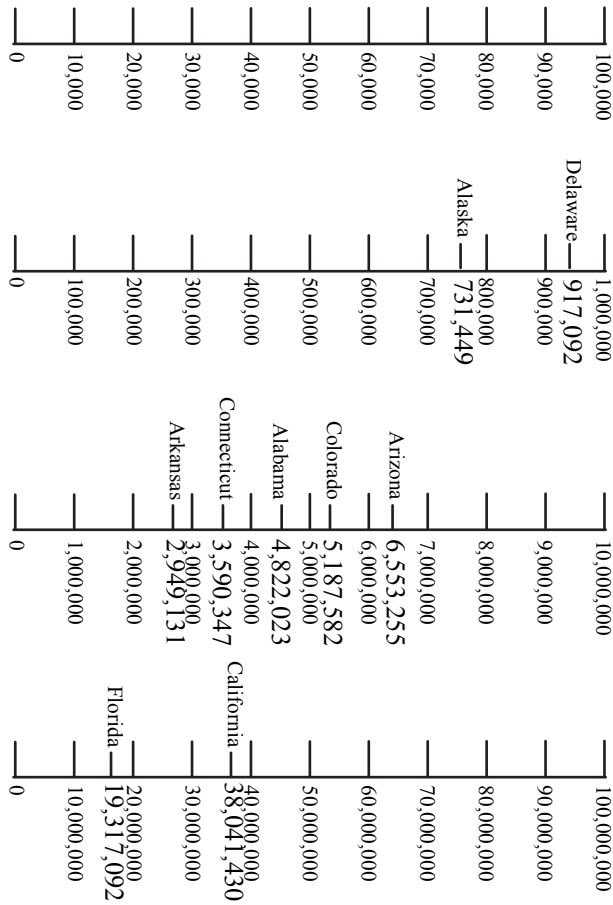## Student Guide

Show Big Numbers (SG pp. 125–127)
Questions 1–18

1. Arizona

2. 4,822,023

3. 19,317,568

4. A.* Florida; Possible response: Florida has a population that is almost 20 million but Alabama is only about 5 million.

   B.* 4,822,023; 6,553,255; 19,317,568 (Alabama, Arizona; Florida)

5. A. Connecticut

   B. Delaware, Arkansas

6. A. Alaska

   B. 731,449

7. A. California

   B. 38,041,430

8.* Delaware; Possible response. I see that it is over 900,000 and that is close to 1 million.

9.* 3 million; Possible response: I looked at the digit in the hundred thousands place and saw that it is a nine. That is very close to ten so I rounded up from 2 million to 3 million.

10. 3,590,347; 5,187,582; 6,553,255 (Connecticut, Colorado, Arizona)

11. A. $4,000,000 + 800,000 + 20,000 + 2000 + 20 + 3$

   B. $10,000,000 + 9,000,000 + 300,000 + 10,000 + 7000 + 500 + 60 + 8$

12. A. three million, five hundred ninety thousand, three hundred forty-seven

   B. nine hundred seventeen thousand, ninety-two

13. Alabama and Colorado; Possible response: If you round the population of both of these states to the nearest million they will both round to 5,000,000. Alabama is just a little less than 5 million and Colorado is just a little more than 5 million.

14. A. 40,000,000

   B. 38,000,000

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Number line image:

World Population Number Line 1

Values marked: 0; 100,000,000; 200,000,000; 300,000,000; 400,000,000; 500,000,000; 600,000,000; 700,000,000; 800,000,000; 900,000,000; 1,000,000,000; 1,100,000,000; 1,200,000,000; 1,300,000,000; 1,400,000,000; 1,500,000,000

Date / Name

Explore Big Numbers with Base-Ten Hoppers   SAB • Grade 5 • Unit 3 • Lesson 2   **125**

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6. A. Which state has the smallest population?
   B. What is the population of this state?

7. A. Which state has the largest population?
   B. What is the population of this state?

8. Which state has a reported population closest to 1 million? How did you decide?

9. What is the reported population of Arkansas rounded to the nearest million? How did you decide?

✓ **Check-In: Questions 10–14**

10. Put the populations of Arizona, Colorado, and Connecticut in order from smallest to largest.

11. A. Write the population of Alabama in expanded form.
   B. Write the population of Florida in expanded form.

12. A. Write the population of Connecticut in word form.
   B. Write the population of Delaware in word form.

13. Which two states have populations of about 5 million people? How did you decide?

14. A. Round the population of California to the nearest 10 million.
   B. Round the population of California to the nearest million.

Play the *Spin and Read Big Numbers Game* in the *Student Activity Book* to practice reading large numbers correctly.

Represent Large Numbers Using Number Lines

Complete the *Population Lines* page in the *Student Activity Book*. Use the number lines on that page to complete Questions 15–18.

15. Show the position of each state's population in the 2012 State Populations Table 1 on the appropriate number line. Alaska has been added to the correct number line as an example.

16. A. The population of Arizona is between which two benchmarks? Use these benchmarks to round the population of Arizona to the nearest million.
   B. Name the two benchmarks that the population of Alabama is between. Use these benchmarks to round the population of Alabama to the nearest 1 million.
   C. Round the population of Delaware to the nearest hundred thousand. Which two benchmarks did you use?

126 SG • Grade 5 • Unit 3 • Lesson 1   **Show Big Numbers**

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*Answers and/or discussion are included in the lesson.

15.*

17. A. Round the population of Colorado to the nearest 1 million. What two benchmarks did you use?

   B. Round the population of Colorado to the nearest hundred thousand. What two benchmarks did you use?

18. A. Round the population of Florida to the nearest ten million. Name the two benchmarks you used.

   B. Round the population of Florida to the nearest million. What two benchmarks did you use?

Homework

2012 State Populations Table 2

State	Nickname	Population
Georgia	Peach State	9,919,945
Hawaii	Aloha State	1,392,313
Idaho	Gem State	1,595,728
Illinois	Prairie State	12,875,255
Indiana	Hoosier State	6,537,334
Iowa	Hawkeye State	3,074,186
Kansas	Sunflower State	2,885,905
Kentucky	Blue Grass State	4,380,415
Louisiana	Pelican State	4,601,893

Use the 2012 State Population Table 2 to answer Questions 1–5.

1. A. Read each number aloud.

   B. Put the populations of Georgia, Hawaii, Idaho, Illinois, and Indiana in order from the smallest to the largest.

2. Use expanded form to write the numbers that have a 3 or 8 in the 10,000 place.

3. Use word form to write the numbers for the two states that have the reported populations closest to 3 million.

4. Is the population of Kansas closer to 2,800,000 or 2,900,000?

Show Big Numbers   SG · Grade 5 · Unit 3 · Lesson 1   **127**

Student Guide - Page 127

16. A.* 6,000,000 and 7,000,000; 7,000,000

   B. 4,000,000 and 5,000,000; 5,000,000

   C. 900,000; 900,000 and 1,000,000

17. A.* 5,000,000; 5,000,000 and 6,000,000

   B.* 5,200,000; 5,100,000 and 5,200,000

18. A. 20,000,000; 19,000,000 and 20,000,000

   B. 19,000,000; 19,000,000 and 20,000,000

*Answers and/or discussion are included in the lesson.

17. **A.** Round the population of Colorado to the nearest 1 million. What two benchmarks did you use?
    B. Round the population of Colorado to the nearest hundred thousand. What two benchmarks did you use?
18. **A.** Round the population of Florida to the nearest ten million. Name the two benchmarks you used.
    B. Round the population of Florida to the nearest million. What two benchmarks did you use?

Homework

2012 State Populations Table 2

State	Nickname	Population
Georgia	Peach State	9,919,945
Hawaii	Aloha State	1,392,313
Idaho	Gem State	1,595,728
Illinois	Prairie State	12,875,255
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Kansas	Sunflower State	2,885,905
Kentucky	Blue Grass State	4,380,415
Louisiana	Pelican State	4,601,893

**Use the 2012 State Population Table 2 to answer Questions 1–5.**

1. **A.** Read each number aloud.
   B. Put the populations of Georgia, Hawaii, Idaho, Illinois, and Indiana in order from the smallest to the largest.
2. Use expanded form to write the numbers that have a 3 or 8 in the 10,000 place.
3. Use word form to write the numbers for the two states that have the reported populations closest to 3 million.
4. Is the population of Kansas closer to 2,800,000 or 2,900,000?

Student Guide - Page 127

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5. Is the population of Illinois closer to 12,876,000 or 12,875,000?
6. Maine has a population of one-million, three-hundred twenty-nine thousand, one hundred ninety-two. Write that number in standard form.
7. Use a ruler to draw a number line starting at 0 counting by 5,000,000 up to 50,000,000.
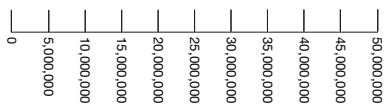
8. Use a ruler to draw a number line starting at 50,000,000 and counting by 50,000,000 up to 550,000,000.
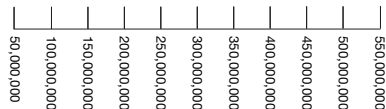
9. Compare the population facts for a fifth-grade student at the Tarver School in the United States and the Karachi American School in Pakistan. Use the two number lines you drew in Questions 7 and 8 and place the population numbers on the appropriate number line for each school.
   A. city
   B. state or province
   C. country

Name of Your School: Tarver
City: Phoenix   **State:** Arizona   **Country:** United States

Class	5TH Grade	School	City	State	Country
25	130	772	1,593,659	6,553,255	313,914,040

Name of Your School: Karachi American School
City: Karachi   **Province:** Sindh   **Country:** Pakistan

Class	5TH Grade	School	City	Province	Country
32	32	357	23,500,000	35,764,539	190,291,129

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Homework (SG pp. 127–128)
Questions 1–9

1. Hawaii –1,392,313; Idaho – 1,595,728; Indiana – 6,537,334; Georgia – 9,919,945; Illinois – 12,875,255

2. Indiana – 6,537,334 = 6,000,000 + 500,000 + 30,000 + 7,000 + 300 + 30 + 4

   Kansas – 2,885,905 = 2,000,000 + 800,000 + 80,000 + 5,000 + 900 + 5

   Kentucky – 4,380,415 = 4,000,000 + 300,000 + 80,000 + 400 + 10 + 5

3. Iowa – three million, seventy-four thousand, one hundred eighty-six

   Kansas – two million, eight hundred eighty-five thousand, nine hundred five

4. 2,900,000

5. 12,875,000

6. 1,329,192

7.

8.

9.
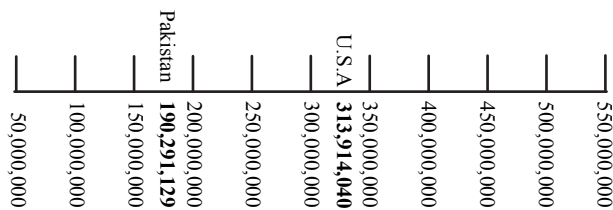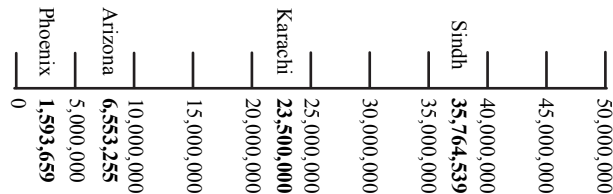
Student Activity Book
*Write Big Numbers (SAB p. 115)

Standard Form	Expanded Form	Word Form
33,128	$30,000 + 3000 + 100 + 20 + 8$	Thirty-three thousand, one hundred twenty-eight
1,355,227	$1,000,000 + 300,000 + 50,000 + 5000 + 200 + 20 + 7$	one million, three hundred fifty-five thousand, two hundred twenty-seven
22,418,965	$20,000,000 + 2,000,000 + 400,000 + 10,000 + 8000 + 900 + 60 + 5$	twenty-two million, four hundred eighteen thousand, nine hundred sixty-five
57,214,000	$50,000,000 + 7,000,000 + 200,000 + 10,000 + 4000$	Fifty-seven million, two hundred fourteen thousand
165,998,247	$100,000,000 + 60,000,000 + 5,000,000 + 900,000 + 90,000 + 8000 + 200 + 40 + 7$	one hundred sixty-five million, nine hundred ninety-eight thousand, two hundred forty-seven
29,273,998,105	$20,000,000,000 + 9,000,000,000 + 200,000,000 + 70,000,000 + 3,000,000 + 900,000 + 90,000 + 8000 + 100 + 5$	Twenty-nine billion, two hundred seventy-three million, nine hundred ninety-eight thousand, one hundred five

Name _____ Date _____

Write Big Numbers

Complete the table. An example is shown.

Standard Form	Expanded Form	Word Form
33,128	$30,000 + 3000 + 100 + 20 + 8$	Thirty-three thousand, one hundred twenty-eight
1,355,227		
	$20,000,000 + 2,000,000 + 400,000 + 18,000 + 900 + 60 + 5$	
		Fifty-seven million, two hundred fourteen thousand
165,998,247		
		Twenty-nine billion, two hundred seventy-three million, nine hundred ninety-eight thousand, one hundred five

Show Big Numbers   SAB · Grade 5 · Unit 3 · Lesson 1 **115**

Student Activity Book - **Page 115**

*Answers and/or discussion are included in the lesson.

Problem Solver: I don't think so, but now I remember, **standard form** is just the regular way to write a number using digits, 365.

Not Sure: Now I remember another term on that list! **Word form** just means that the digits are written in words, three hundred sixty-five.

Problem Solver: There's another problem-solving strategy that can help us. Find a pattern. That way you don't have to remember so many rules. There is a pattern in reading and writing larger numbers, and it has something to do with knowing the **periods.**

Remembers Rules: There's a rule about that: Read the number in each period and say the name of each period. A **period** is a group of three places in a large number. If you can read three-digit numbers, and you know the names of the periods, reading big numbers is easy. We need this rule on our study notes.

Study Notes:
• There are ten **digits** in our number system:

  0 1 2 3 4 5 6 7 8 9

• The value of each **digit** is determined by its position or **place.**

• Read the number in each **period** and say the name of each **period.**

Not Sure: I guess I need to get a better picture of the periods in my head.

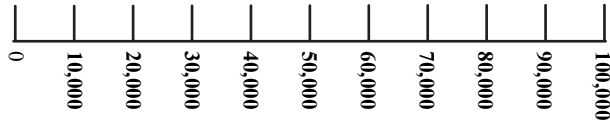**Problem Solver:** Okay. Let's go back to the place value chart.

Show Big Numbers   SG · Grade 5 · Unit 3 · Lesson 1 **123**

Student Activity Book - **Page 123**
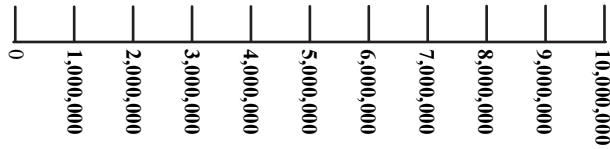
Population Lines (SAB p. 123)

1.*
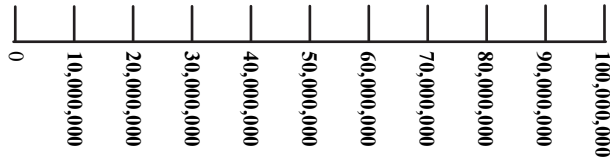

2.*
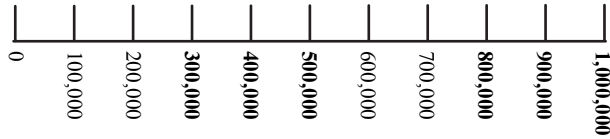
3.

4.

*Answers and/or discussion are included in the lesson.

Teacher Guide

Problem Solving with U.S. Population Numbers (TG p. 1–2)
Questions 1–2

1. Answers will vary. Students should use rounding to see that in 1972 the population was about 200,000,000 and in 2012 it was about 300,000,000. So there are about 100,000,000 more people in 2012 than in 2013.

2.* Answers will vary. In the forty years from 1972 to 2012, the population of the U.S. increased by about 100,000,000. The population still has to increase by about another 100,000,000 to reach four hundred million. At the same rate of growth, it will take about another 40 years to increase by another 100,000,000. Forty years after 2012 is 2052.

Note: These populations were estimated by the U.S. Census as of July 1, 2012.

Name _____ Date _____

Problem Solving with U.S. Population Numbers

1. The population of the United States as reported in 1972 was 209,896,021 people and in 2012 reported as 313,914,040 people. About how many more people were there in the United States in 2012 than in 1972? Show or tell how you solved this problem.

2. If the U.S. continues to grow at this rate, estimate the year in which the population goes over four hundred million. Explain how you decided.

TG · Grade 5 · Unit 3 · Lesson 1   Assessment Master

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Teacher Guide - Page 1

Name _____ Date _____

Problem Solving with U.S. Population Numbers
Feedback Box

	Expec- tation	Check In	Comments
Read and write large numbers.	E1		
Compare and order large numbers.	E2		
Round large numbers.	E3		
MPE2. Find a strategy. I choose good tools and an efficient strategy for solving the problem.			
MPE4. Check my calculations. If I make mistakes, I correct them.			
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking.			

Yes… | Yes, but… | No, but… | No…

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Assessment Master   TG · Grade 5 · Unit 3 · Lesson 1   2

Teacher Guide - Page 2

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*Answers and/or discussion are included in the lesson.