Name_____   Date_____

Comparing U.S. Elevation to the Population Density

In this lesson, you will make a double-bar graph which will compare U.S. population density to the elevation of physical regions of the United States.

Step 1. Do the math problems to figure out the number of blocks or Legos needed to represent the average elevation and population density for these physical regions of the U.S.

Each block/Lego equals 500 feet in elevation above sea level.

Pacific Coast   averages 1000 feet divided by 500 = _____ blocks or Legos
Sierra Nevada/Cascade   averages 3500 feet divided by 500 = _____ blocks or Legos
Mountains
Great Basin   averages 3000 feet divided by 500 = _____ blocks or Legos
Rocky Mountains/Plateaus   averages 4000 feet divided by 500 = _____ blocks or Legos
Great Plains   averages 2000 feet divided by 500 = _____ blocks or Legos
Mississippi River/ Great Lakes   averages 1000 feet divided by 500 = _____ blocks or Legos
Appalachian Mountains.   averages 2000 feet divided by 500 = _____ blocks or Legos
Atlantic Coastal Plains   averages 500 feet divided by 500 = _____ blocks or Legos

Check your math. The total should be **34** blocks or Legos.

Each block/Lego equals 20 people per square mile living in this region.

Hint: You will need to round off your remainders. If the remainder is half or over, you need to round up to the next number.

Pacific Coast   averages 112 people per square mile divided by 500 = _____ blocks/Legos
Sierra Nevada/Cascade   averages 11 people per square mile divided by 500 = _____ blocks/Legos
Mountains
Great Basin   averages 31 people per square mile divided by 500 = _____ blocks/Legos
Rocky Mountains/Plateaus   averages 20 people per square mile divided by 500 = _____ blocks/Legos
Great Plains   averages 40 people per square mile divided by 500 = _____ blocks/Legos
Mississippi River/
Great Lakes   averages 130 people per square mile divided by 500 = _____ blocks/Legos
Appalachian Mountains   averages 140 people per square mile divided by 500 = _____ blocks/Legos
Atlantic Coastal Plains   averages 480 people per square mile divided by 500 = _____ blocks/Legos

Check your math. The total should be **46** blocks or Legos.

Step 2: Use the blocks or Legos to build a double-bar graph. First decide on which color will be which topic: Color in the boxes: Elevation [   ]   Population Density [   ]

Then begin to stack the blocks or Legos according to your information above. For example: Pacific Coast will have 2 blocks or Legos for Elevation and 7 blocks or Legos for People per square mile. Be sure to keep the regions in order from the Pacific to the Atlantic coasts.

Step 3: Use the graph paper and colored pencils or markers to graph your model made with the blocks or the Legos. All graphs must have a title and labels for the horizontal and vertical axis.

Title of Graph_____

Horizontal axis labels: Pacific Coast, Sierra Nevada/Cascade Mountains, Great Basin, Rocky Mountains/Plateaus, Great Plains, Mississippi River/Great Lakes, Appalachian Mountains, Atlantic Coastal Plain should be listed in order (from left to right) at the bottom of the bars.

Vertical axis labels: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, and 24 should be going from the bottom of the bars to the top of the bars.

Make sure you count the squares correctly. Make sure you fill in the color key so that everyone knows what the colors represent. Neatness counts. Spelling counts. When you are done, tear apart your blocks/legos and return all materials to the teacher.

Step 4: Now look at your graph. Answer the following questions.

1. Which of the U.S. regions has the highest elevation but the fewest people?

   Why do you think so few people live there?

2. Which **two** regions have the greatest population density?

   Why do you think so many people want to live there?

3. Why would the Mississippi River/Great Lakes area have so many people?

4. Are the Appalachian Mountains higher or lower than the Rocky Mountains?

5. In which physical region is your state located?

6. Do you live in the most densely populated region of the U.S?

Comparing U.S. Elevation to the Population Density

Each block/Lego equals 500 feet in elevation above sea level.

Pacific Coast	averages 1000 feet divided by 500 = ___2__ blocks or Legos
Sierra Nevada/Cascade Mountains	averages 3500 feet divided by 500 = ___7__ blocks or Legos
Great Basin	averages 3000 feet divided by 500 = ___6__ blocks or Legos
Rocky Mountains/Plateaus	averages 4000 feet divided by 500 = ___8__ blocks or Legos
Great Plains	averages 2000 feet divided by 500 = ___4__ blocks or Legos
Mississippi River/ Great Lakes	averages 1000 feet divided by 500 = ___2__ blocks or Legos
Appalachian Mountains.	averages 2000 feet divided by 500 = ___4__ blocks or Legos
Atlantic Coastal Plains	averages 500 feet divided by 500 = ___1__ blocks or Legos

Each block/Lego equals 20 people per square mile living in this region.

Pacific Coast	averages 112 people per square mile divided by 20 = ___6__ blocks/Legos
Sierra Nevada/Cascade Mountains	averages 11 people per square mile divided by 20 = ___1__ blocks/Legos
Great Basin	averages 31 people per square mile divided by 20 = ___2__ blocks/Legos
Rocky Mountains/Plateaus	averages 20 people per square mile divided by 20 = ___1__ blocks/Legos
Great Plains	averages 40 people per square mile divided by 20 = ___2__ blocks/Legos
Mississippi River/ Great Lakes	averages 131 people per square mile divided by 20 = ___6__ blocks/Legos
Appalachian Mountains	averages 140 people per square mile divided by 20 = ___7__ blocks/Legos
Atlantic Coastal Plains	averages 480 people per square mile divided by 20 = ___24_ blocks/Legos

Answer key for questions

1. Which of the U.S. regions has the highest elevation but the fewest people?
Rocky Mountains
 Why do you think so few people live there? **Answers could include that it is hard to live there, hard to farm, too cold, too far from big cities, not many factories located here, not many jobs because there are not many people, etc.**

2. Which two regions have the greatest population density? **Atlantic Coastal Plains and Pacific Coast**
 Why do you think so many people want to live here? **Answers could include immigration into country from Africa, Asia or Europe; people want to live in large cities; industries developed near oceans because of labor and transportation availablity; good climate; etc.**
3. Why would the Mississippi River/Great Lakes area have so many people?
Transportation on lakes and rivers, factories developed due to water needed in manufacturing; good farmland, some large cities but many smaller ones, etc.

4. Are the Appalachian Mountains higher or lower than the Rocky Mountains? **Lower**

5. In which physical region is your state located? **Answers will vary**

6. Do you live in the most densely populated region of the U.S? **Answers will vary**

Scoring Guide for Ups and Downs Lesson

Student Name_____

Correctness of math on graph (32 pts) _____

Title (10 pts)_____

Correctly labeled regions (8 points) _____

Key to the colors on the graph (10 pts) _____

General neatness (14 pts)_____

Correct spelling (10 pts) _____

Worksheet division problems (16 pts) _____

Total (100 pts) _____

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