

**Student Guide**

**Variables and Values (SG p. 334)**

**Questions 1–7**

- 1.\* length; centimeters, meters, inches, feet, yards
- 2.\* area; square feet
- 3.\* volume; cubic inches, cubic feet, cubic centimeters
- 4.\* time; minutes, hours
- 5.\* length; feet, yard, meters
- 6.\* volume; tablespoons, teaspoons, cups, milliliters
- 7.\* mass; grams, ounces, kilograms, pounds

Use Variables and Values



George Washington Carver became the Director of Agriculture Research at Tuskegee Institute. He taught and worked with poor southern farmers for 47 years. In the story George Washington Carver taught his students about variables and standard units that are often used in math and science.

Read each question, decide which variable is appropriate for each situation and suggest at least one possible standard unit that could be used. Be ready to share how you decided.

1. Michael and Nicolas each made a paper airplane. They wanted to see which one could fly the farthest.
2. Shannon is doing a mosaic project on a tabletop. She wants to know how many tiles she will need to cover a table that is 2 feet wide and 4 feet long.
3. Ana wants to know how many juice boxes will fit in her cooler.
4. Frank wants to know how much he has read over the last week.
5. Maya is going to put a wallpaper border up in her room. She wants to know how much border she needs to purchase.
6. Jerome is baking a cake for a party. He needs to add milk to his recipe.
7. Luis and Romesh wanted to know if they could carry \$1000 in pennies.

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Use the variables from the story to complete the *Variables* page in the *Student Activity Book*.

**Student Activity Book**

**Variable (SAB p. 283)  
Questions 1–2**

1. Possible responses:

Variable	Common Use (Example where the variable is used)	Standard Units	Equipment Needed for Measurement
Length	pants size, waist and length	centimeters inches miles	ruler meterstick tape measure
Area	amount of carpet for floor	square in square cm	tiles ruler meterstick
Volume	measures for ingredients for cookies	cubic inches gallons liters	graduated cylinder measuring cup
Mass	used to calculate the amount of fuel for the Space Shuttle	grams	balance
Time	used to measure the duration of an event	seconds minutes years	clock pendulum chronometer
Temperature	to check for a fever	degrees F or C	thermometer
Speed	to know how fast a car is traveling	length/time	speedometer

2. Two variables are listed in the data table as possible answers.

Name \_\_\_\_\_ Date \_\_\_\_\_

**Variables**

✓ **Check-In: Questions 1-2**

1. In the story, George Washington Carver: Man of Measure, Professor Carver names five variables often used in math and science. Use those variables and Carver's discussion to fill in the table below.

Variable	Common Use (Example where the variable is used)	Standard Units	Equipment Needed for Measurement

2. Think of another variable that could be added to Professor Carver's list and add it to the data table.

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