



# Benjamin Banneker

## Activities & Assignments

### Surveying

Surveying, or land surveying, is the technique, profession, art, and science of determining the terrestrial or three-dimensional positions of points and the distances and angles between them. A land surveying professional is called a land surveyor.

Benjamin Banneker was an accomplished surveyor in a time before GPS and other technological innovations made the task much easier and more precise. Not only this, but he was almost entirely self-taught.

How well could you do with primitive surveying technology?

Imagine you are a surveyor. Your task: "Survey" the area of a room and map it.

Your tools: A two-foot long piece of string, masking tape, graph paper, and pencil.

Your map should include the following information:

1. The perimeter of the room in feet
2. The area of the room in square feet
3. A map key (or legend) that provides a scale and explains any symbols used.
4. Visual representations of furniture and other objects

What sort of equipment would a professional surveyor use today?

### Night Sky Study

Conduct a study of the night sky where you live. What phase is the moon currently in? Is it waxing or waning, full, or new? How can you find out this information, if you aren't sure? Can you identify any objects in the night sky, such as constellations, or even planets? Have you ever seen a shooting star? Draw a picture of the night sky that you observed, marking any objects that you were able to identify. What tools or apps could you use to be able to learn more about astronomy and celestial objects?



## Banneker Math Puzzle

Benjamin Banneker drew great delight from creating math puzzles and solving them.

One of his puzzles is as follows:

*Divide 60 into four such parts that the first being increased by 4, the second decreased by 4, the third multiplied by 4, the fourth divided by 4 such that the sum, the difference, the product, and the quotient shall be one and the same number.*



**The answer to the math puzzle is:**

W=5.6 is the first part

X=13.6 is the second part

Y=2.4 is the third part

Z=38.4 is the fourth part

$$W+X+Y+Z=60$$

$$W+4 = X-4 = Y*4 = Z/4 = 9.6$$

One needs to solve the set of simultaneous equations to get the solution.