Teacher's Guide: How many NYLAs from Kalamazoo to Timbuktu?

Overview: measuring distance is a basic geographical skill, because distance is a key influence on human activity in a place.

Measuring distance is also an essential step in math readiness. The human brain processes the concept of distance in exactly the same place it later uses for mathematical analysis. Grade: 1-3

Related Discipline: Math

CC Standard: 5.OA-3

Time: occasional short times

Preparation: Find a 12-inch globe for every group of students. If possible, use a permanent marker to mark 15-20 important cities with distinctive symbols and their initials – suggested cities include your home town, New York, Los Angeles, Honolulu, Fairbanks, Mexico City, Rio de Janeiro, Paris, Rome, Moscow, Tokyo, Shanghai or Hong Kong, Mumbai (Bombay) or Kolkata (Calcutta), Sydney, Capetown – and Timbuktu. This lesson is not about memorizing the locations of cities, nor is it about finding important cities amid the clutter on a typical classroom globe, but incidental learning of the locations of important cities is a worthwhile byproduct. So make finding them as easy as possible!

Cut 19-inch pieces of ribbon or string, one for each globe plus some spares for demo. Use a permanent marker to make marks every 3-3/4 inches – these marks are 1 NYLA apart on the globe (about 2500 miles, or one-tenth of the circumference of the globe).

CAUTION: You need to make NYLAs and strings to fit your globes if they are not the standard 12 inches in diameter (37.7 inches around). A 16-inch globe has a circumference of 50 inches and a NYLA of 5 inches. A 9-inch globe has a circumference of 28.3 inches and a NYLA of 2.8 inches. For globes of other sizes, measure the circumference and make the NYLA one tenth as long.

Setup: Tell students that we are going to learn how to measure distances on a globe. We will use a special unit of measurement, called the NYLA. A NYLA is the distance from New York (NY) to Los Angeles (LA), about 2500 miles, or one-tenth of the distance all the way around the earth.

NYLAs are easier to use than miles or kilometers on a globe, because the numbers are smaller. They can therefore be counted, which is an important step in making a mental link between concrete length and abstract number. This activity is therefore a way to teach some geography while reinforcing math.

- **Procedure:** The worksheet is self-explanatory, but teachers should think of several ways to diagnose class readiness and provide assistance in finding places and making measurements.
- Answers: Hawai'i to Shanghai, 2 NYLAs Capetown to Mumbai, 3 NYLAs Going all the way around the earth, 10 NYLAs
- **Debrief:** Later, we will learn how to measure distance with rulers, which are more accurate but a little harder to use, especially on a globe.
- **Vocabulary:** distance measurement unit length continent city circumference?
- **Extension:** Measure distance on a flat map (e.g., of the local community or home state) with a ruler. Students in one of our classes in Harlem "invented" another unit of measurement called a "scholar." It is equal to one child with arms outstretched. Students had a good time measuring rooms in the school, lining up with arms outstretched and fingers touching in order to compare their classroom with the lavatory, science room, cafeteria, hallway, and so forth. Linking those measurements with ruler measurements on a map of the school was an "Aha" moment for many students (it helps to draw a "scholar" to scale on the school map). This was part of a long series of short activities about making maps of their classroom, school, playground, etc. See the "Representing our Earth" packet on the CD and Activity 8E in *Teaching Geography*.