

# BE A MATH NINJA

## ACTIVITY INSTRUCTIONS

**Lesson:** **The Path to Enlightenment**

**Tiered For:** **Grade 4** (or additional challenge/review for other grades)

**Objective:** Students will be able to use protractors to measure angles needed to solve a real-world problem.

**Materials:** **Student Worksheet** on next page, protractors, rulers

**1.** Review the following angle vocabulary as necessary:

- Acute: Measuring less than  $90^\circ$
- Right: Measuring exactly  $90^\circ$
- Obtuse: Measuring greater than  $90^\circ$  and less than  $180^\circ$

**2.** Review the concept of map scale as necessary.

**3.** Distribute **Student Worksheet** to the class. For most classes, it would be best to complete the first step or two with the entire class. Then have the rest of the worksheet completed individually or in pairs.

**4.** Ask the class to look at the diagram as though they were standing at the Garden of Selflessness looking north. Point out that to walk to the Cliffs of Contemplation, they have to turn to the right.

**5.** Ask the class to measure the angle of this first turn by placing the hole of the protractor over the "X" and the bottom of the protractor parallel with the bottom of the page. The line segment for the path goes through the 45/135 marking on the protractor, so the turn is  $45^\circ$  to the right.

**6.** Ask the class to measure the distance from the Garden of Selflessness to the Cliffs of Contemplation (1"). Since the scale is  $1'' = .5$  mile, the distance between the two locations is .5 mile.

**7.** Ask the class to complete the worksheet individually or in pairs.

**8.** Review answers as a class.

**Answer Key:**

- 1)**  $45^\circ$  right, .5 mile; **2)**  $90^\circ$  left, 1 mile; **3)**  $45^\circ$  right, .75 mile; **4)**  $90^\circ$  left, 1 mile;  
**5)**  $135^\circ$  left, 1.5 miles

## The Path to Enlightenment

Master Wu summons Lloyd and the other ninjas to a secret meeting. "To reach the next level in your development, you will have to undergo a series of trials designed to overcome your ego," he explains. "Start at the Garden of Selflessness and follow the map until you have overcome all the trials."



**DIRECTIONS:** Use a protractor and ruler to find the route the ninjas must take.

- 1** From the **Garden of Selflessness**, turn 45 degrees right and travel .5 miles to the Cliffs of Contemplation.
- 2** Then, turn \_\_\_\_\_ degrees left and go \_\_\_\_\_ miles to the **Desert of Inner Strength**.
- 3** From there, turn \_\_\_\_\_ degrees right and walk \_\_\_\_\_ miles to the **Peaks of Mindfulness**.
- 4** After that, turn \_\_\_\_\_ degrees left and journey \_\_\_\_\_ miles to the **Pool of Understanding**.
- 5** Finally, turn \_\_\_\_\_ degrees left and travel the last \_\_\_\_\_ miles to attend the **Award Ceremony** to recognize your accomplishment.