

# CONSTRUCTING A CONTOUR MAP

**GRADES:** 6-12

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**SUBJECT:** Social Studies, Geography

**TIME REQUIRED:** One to two class periods

## OBJECTIVES:

1. Learn to distinguish between levels of elevation.
2. Understand physical maps.
3. Compare the elevations of the highest peaks in North Korea, South Korea and Montana.
4. Create a topographic map with contour lines.

## MATERIALS REQUIRED:

- Clay
- Color crayons or pencils
- Dental floss and toothpicks
- Paper on which to draw map
- Poster or overhead transparency of Handout 1: Contour Map

## BACKGROUND:

One of the skills of geography education is learning to read and create topographic maps. This lesson is designed to acquaint students with the similarities and differences in the geography of the Korean Peninsula and Montana. Montana is named for the Spanish word for “mountain.” The Rocky Mountain Range extends the length of the state in the west, from north to south. In Korea, the Taebaksan Range extends the length of the country. The highest peak in North Korea is Mount Paekdusan (2,744 meters), in South Korea Mount Hallasan (1,901 meters), and in Montana Granite Peak (3,901 meters) in the Beartooth Range of the Rockies.

## PROCEDURE:

1. Introduce the Lesson: Display maps of the U.S., Montana and a topographic map of the Beartooth Range. Explain that the highest peak in Montana is Granite Peak and point out its location in the south central region of the state. Show pictures of the peak around Mystic Lake in view of the peak. Explain that the purpose of this lesson is to develop contour line maps showing elevation. Use the following questions to start a discussion:
  - a. What is a contour line? (A contour line is a line on a map connecting points on a land surface that mark the same elevation.)
  - b. Why do we use them? (Contour lines are useful because they allow us to show the shape of the land surface—topography—on a map.)
  - c. What are topographic maps used for? (A common use for a topographic map is to determine the elevation at a specific point.)
  - d. Who needs to understand contour maps? (Topographic maps are important tools for studying the earth’s surface, not only for geologists, but for engineers, foresters, land use planners, hikers and anyone who travels outdoors.)

- e. How are contour maps developed? (see Handout 1, demonstrating the process used to convert a photograph of a mountain to a topographic map with contour lines.)
2. Student Activity: Divide the class into groups of three students, demonstrate the project, then have groups work to create a map.
- a. Use clay to create a mountain.
  - b. Use a toothpick to draw three horizontal lines dividing the mountain into four equal parts.
  - c. Using the lines as guides slice the mountains with dental floss, starting with top line.
  - d. Separate the pieces of the mountain.
  - e. Trace outline of bottom section on piece of paper.
  - f. Center second piece within the outline of the first and trace.
  - g. Repeat process with the remaining pieces.
  - h. Give each student a copy of the tracings.
  - i. Label the outer line 0 meters, the next line 500 meters, 1000 meters and 1,500 meters.
  - j. Color each band a different color.
  - k. Create a key in one of the corners of the paper with four boxes and label the boxes in the key: 500 to 1,000, 1,000 to 1,500 and 1,500 to 2,000meters.
  - l. Label the map with the name of a mountain (e.g. Mount Halla-san).

### EVALUATION:

Student Name	<b>4-point score Outstanding Demonstrates thorough understanding of content. Excellent group participation.</b>	<b>3-point score Good Shows adequate understanding of content. Works well with other members of group.</b>	<b>2-point score Limited Partial understanding of content. Limited participation with other members of group.</b>	<b>1-point score Little or no understanding of content occurred. Was only an observer in the group, little or no participation.</b>

### RESOURCES:

About Korea: Great general information on all topics, easy to read for middle school students

<http://www.koreaaward.com/korea.htm>

Contour Map Example

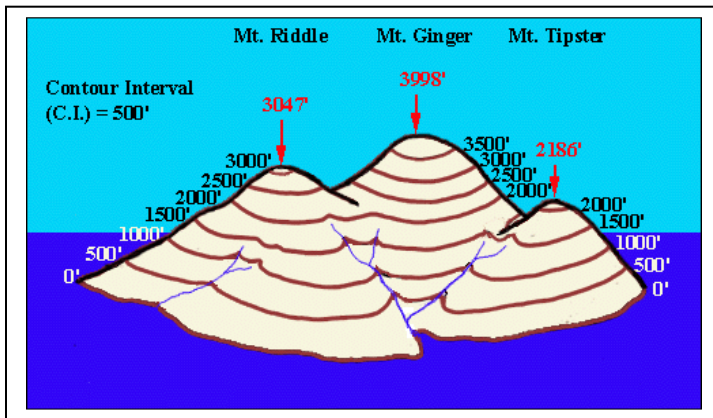
<http://academic.brooklyn.cuny.edu/geology/leveson/core/linksa/elevation.html>

Geography of Korea

[http://www.koreaaward.com/korea/GeographyPeople\\_Geography.htm](http://www.koreaaward.com/korea/GeographyPeople_Geography.htm)

## HANDOUT 1: CONTOUR MAP

(An example of three mountains similar to the three described above)



The contour map of these three mountains would look similar to the following map. (The peaks would occur at the smallest rings on the map.)

