



<b>Author(s):</b> Thomas Venezia			<b>Lesson Title:</b> Contours and Hillsides			
<b>Grade Span</b>			<b>ICLE Application Model</b>			
<b>K-4</b>	<b>5-8</b> X	<b>9-12</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b> X

**Instructional Focus:**

**Geometry**

Students apply geometric concepts, properties, and relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

**Measurement**

Students use a variety of tools and techniques of measurement in a problem-solving situation. Students communicate the reasoning used in solving these problems.

**Tools and Technology**

Students use appropriate tools and technologies to model, measure, and apply the results in a problem-solving situation. Students communicate the reasoning used in solving these problems.

**Performance Task**

In this activity, students will convert a contour map into a three-dimensional model of the landform. The activity will reinforce the concept of contour lines, landforms and enlarging by squares. This activity is best accomplished by having students work in groups of two. To accomplish this activity, the teacher should provide each group with a small contour map drawn on 1/8" or 1/4" graph paper. The teacher can create these hypothetical contour maps, preferable a different one for each group.

Procedure

- Using 1/2" or 1" graph paper, enlarge the contour map provided by the teacher.
- Once this enlarged map is complete, each contour line should be cut out using a utility knife or scissors. This will create a series of contours which, when put back together, would re-create the map.
- Trace the outside edge of each contour on a piece of corrugated cardboard or foamboard.
- When you have all of your contours cut out, glue them together, being sure that they are placed in their proper order and proper location. You may need to refer to your original contour map for guidance.

**ICLE Essential Skills**

Use the technique of **dimensional analysis** to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis. (M33)

Describe or measure positions on the earth's surface using coordinate systems (lines of latitude - longitude), and fields of isolines, isobars, and iso-surfaces. (S26)

Observe, measure, and examine various landscape characteristics (e.g., hill slopes, stream patterns, and soil associations), and the relationship of characteristics between landscape regions. (S47)

**Scoring Guide:**

**4 Points** – The contour map is accurately enlarged. The contours are accurately transferred to the building material. The constructed model is highly accurate in representing the landform presented on the contour map. All work is neatly completed.

**3 Points** – The contour map is accurately enlarged. Contours are transferred to the building material to a reasonable degree of accuracy. The constructed model contains only minor inaccuracies in representation. All work is neatly completed.

**2 Points** – The contour map has some inaccuracies in enlargement. Contours are transferred to the building material but do contain inaccuracies. The constructed model, although not accurate, generally represents the contour map. Completed work could be improved in neatness and accuracy.

**1 Point** – The enlargement of the contour map is highly inaccurate. Contours are transferred to the building material but contain significant inaccuracy. As a result, the model is highly inaccurate and is a not a good representation of the contour. Work is neither neat nor accurate.

**Keywords**

<b>English Language Arts</b>	<b>Mathematics</b>	<b>Science</b>
<b>Reading</b>	<b>Algebra</b>	<b>Earth Science</b> Landforms, Models/Constructions,
<b>Writing</b>	<b>Geometry</b> Geometry in Daily Life, Manipulatives, Problem Solving, Three-Dimensional Objects	<b>Life Science</b>
<b>Communications</b>	<b>Statistics</b>	<b>Chemistry</b>
<b>Literature</b>	<b>Calculus</b>	<b>Physics</b>
<b>Other</b>	<b>Trigonometry</b>	<b>Other</b>
	<b>Other</b>	