**Lesson:** Topographic Map

**Content Area:** Watersheds

**Grade:** 6-12

**Standards:**

* E & E Standards: Watersheds and Wetlands (4.1); Ecosystems and Their Interactions (4.6); Humans and the Environment (4.8)

**Overview:**

1. Students will identify the features of a watershed.
2. Students will identify how topographic features create and comprise a watershed

**Materials**

* laminated topographic maps of local area; topographic maps can be ordered from the U.S. Geological Survey
* dry-erase markers

**Objective:**

* Students should be able to understand the use of a topographic map
* Students should be able to locate items on a topographic map
* Students should be able to delineate a watershed.
* Students should be able to locate headwater streams

**Set-Up:**

* Obtain laminated topographic maps of your area
* Arrange maps to allow for group work on a flat surface.

**Introduction:**

1. Divide class into three groups (appx. six students per group).
2. Each group is given a topographic map of the local area of the county in which the school is located.

**Procedure**

1. Ask the students to identify/describe what they are looking at.

2. See if anyone can locate our specific location on the maps.

3.After ascertaining the extent of the class's knowledge, ask the students to recall the concept of a topographic map (how it is a two-dimensional representation of the three dimensions of the surface of the land).

4. Referring to the topographic maps, have each group identify the following:

* + a mountain top
	+ a mountain ridge
	+ a steep mountain slope
	+ a gentle slope
	+ a stream
	+ the confluence of two streams
	+ a field or lowland area
	+ cities or towns

5. Have the groups focus in on the specific section of the map that represents the location of the school. Have them locate the stream that flows by the school's property. Trace the stream upstream to determine its origin and also downstream to where it meets up with a larger stream.

6. Challenge the groups to mark the surrounding area that delineates the stream's watershed. Have them mark the laminated maps with dry erase markers to indicate the watershed boundaries.

7. Have the groups share their mappings.

**Closure:**

1. After performing the lesson, students should have an understanding of what a topographic map is, what its uses are, and how to locate areas and objects on a topographic map.

**Evaluation**

* Students will be evaluated based on their ability to answer the questions presented in the lesson.

**Extension/Demonstration:**

* Have students identify on the map where the stream by the school facility leads into a wetland area just prior to where the stream leads into a larger stream. Use this as a springboard to a discussion of or lessons on wetlands. On a future class day arrange for a field lesson when students will travel along the stream to the wetland area where they can explore and identify the various components of the wetland

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