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Topographic Maps with Project Interactive

Nate Ruder
The College at Brockport

Nate Ruder
Earth Science

Lesson Plan #1
Web Based Activity

Objective ~ Map interpretation is an important concept within Earth Science. In this lesson students will continue to learn how to draw isolines and how to interpret topographic maps. Students will already have been introduced to both of these topics.

Science Concepts ~

1. Isolines can be used to organize data visually.
2. Contour lines can be interpreted to give information about topography.

Lesson Steps ~

1. Students will have already completed some simple practice with contour lines and map interpretation.

2. We will meet in the library which has enough computers for all students and also has enough tables in the center of the room for all students. The layout of the library offers a unique learning environment in which instruction can easily switch between teacher centered and student centered.

3. First, some teacher directed review will be offered on the rules of contour lines. Students will then be given a worksheet with some practice contour line maps. One of those maps will be a hard copy of a java applet that can be checked using the Smartboard (see worksheet below). Students should complete all the practice maps and then check their java map on the Smartboard when it is available. This will give me an opportunity to assess their map.

4. At the same time students will go to a website that has some excellent visuals and explanation related to the interpretation of contour lines. They will complete these questions on the worksheet below.

5. I will review the tutorial with the students at the end of class. The review is important, because I have found that usually the students need the structured time to get a better idea of what they were seeing when they working on their own. The lesson should be able to fit in a 40 minute period.

6. The lesson could easily be followed up with some homework with some practice regents questions focused on map interpretation. Also, there is a lab that uses the Fairport Quadrangle that could assess the skills that the students gained during this activity.

Name: _____ Period: _____

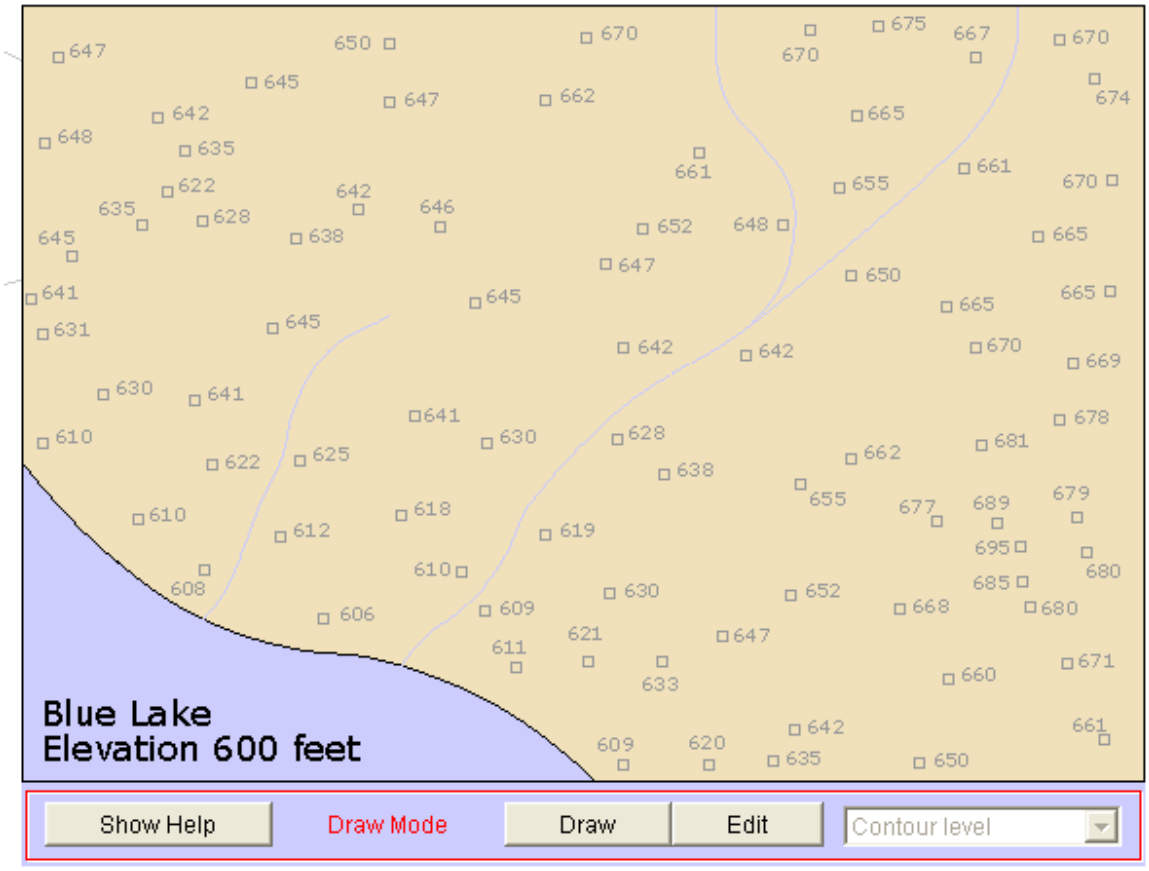
Contour Map Practice

Isoline drawing and Interpretation

Instructions: Please complete the isolines maps below. Remember, you should use pencil!!!

Note: I can get some old regents exam problems for here – they are not available online – so it has to be done the old fashioned way.

Please draw contour lines starting at 610 feet and continue with a Contour Interval of 10 feet. When you and your partner are done with your map, check it using the SmartBoard in the front of the room. Mr. Ruder will be there to get you started.



Interpretation of Contour Maps

Online tutorial

PLEASE GO TO:

http://www.classzone.com/books/earth_science/terc/content/investigations/es0307/es0307page01.cfm

Follow along in the tutorial and record your answers below. The question number follows the order of the tutorial.

1. Write a detailed description of the topography that you encounter during this flyby.

2. Compare the photo to the topographic map. Describe the pattern of the contour lines around features on the photo.

3. Which part of this land is the last to flood as the water rises?

4. What is the elevation of the points marked A, B, and C?

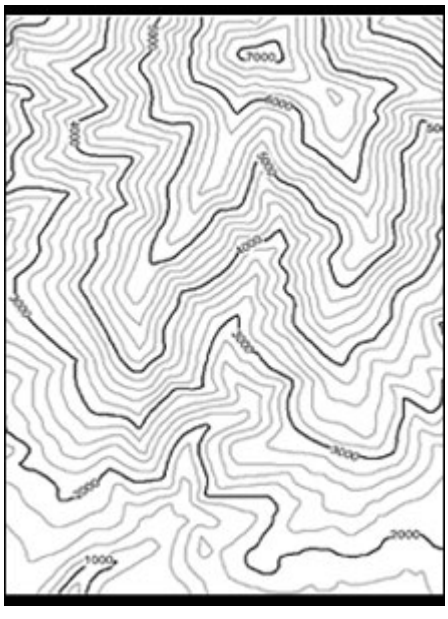
5. Describe the overall shape of the landscape.

6. What do closely spaced contour lines indicate about the shape of a feature? In other words, when the lines are close together, does the feature have gentle slopes or steep sides?

7. What is the pattern of the contour lines around a simple hill?

8. Draw an arrow to indicate the direction in which water flows across the lines.

Put your answer over here, buddy.



9. What landform feature does the model show, and what do hachures on contour lines indicate?

10. Describe the structure inside the box on the map.

11. Identify the features marked at A and B. Where is the elevation highest on this map? Where is it lowest?

12. Which of the landforms was easiest to recognize from its topographic map?

13. How are topographic maps useful to us? (note: this is not a question found directly from the tutorial)