



What is a Watershed?

Students are introduced to a sample watershed quest to learn what a quest is, what the core components of a quest are, and which products they will be responsible for creating in this unit.

FOCUSING QUESTIONS

What is our watershed?
Where does our water come from?
Where does our water go?

MATERIALS

A topographic map of your community
Two photocopies of this map, enlarged to 11' x 17', then cut into pieces (the number of pieces should equal the number of students). Each student will receive two identical map pieces.
One photocopy of the full map (11' x 17') for each student
Magnifying lenses or loupes (optional)
Colored pencils

TIME

60 minutes

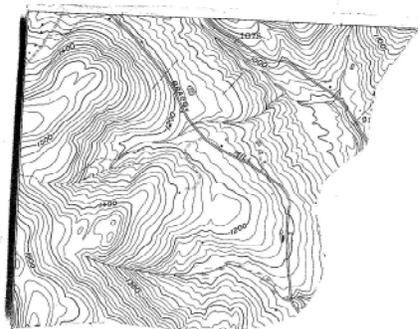


FIG.1

PROCEDURE

1. **Introduction:** Learning to read a topographic map (15 minutes) (see fig.1)

- Hand out the map pieces, giving two of the same pieces to each student. Ask them to set one piece aside.
- Ask them to look carefully at the piece for 30 seconds (silence helps).
- Begin by asking the following questions, allowing students to answer, then encouraging them, via follow-up, to teach each other.

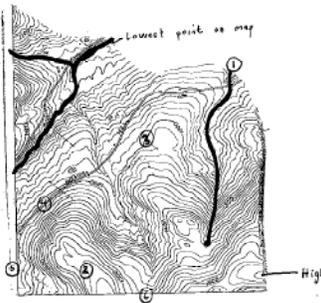
- What are we looking at? *A topographic map*
- How do you know? *Elevation lines*
- What do you see on the map? *Contour lines*
- How can you tell? *Parallel lines, bold and numbers*
- What do the numbers show? *Elevations*
- What do the darker lines indicate? *100' intervals*
- What else do you see? *Roads*
- How can you identify a road? *Paired parallel lines*
- Who has a river or brook? *Ask them to raise hands*
- How can you tell? *A squiggly line moving downhill*
- Can you find a lake or pond?
- Where?
- Can you see water coming into it?
- From where?
- Is water leaving?
- From where?
- Can you find geographic or political boundaries? Town lines? County lines? Parks? Wetlands? What else?

2. When the process outlined in No. 1 is exhausted, ask students to tape or glue one of their map pieces to a sheet of paper and create a key demonstrating their ability to read a topographical map. You (and/or your class) can brainstorm the appropriate categories/elements to include in the key.

Sample student product FIG.2

~ KEY ~

| Symbol | Meaning |
|---|------------------------------------|
| ①  | blue Water |
| ②  | brown contour line |
| ③  | dark brown, numbers 1000' interval |
| ④  | paved road |
| ⑤  | unpaved road |
| ⑥  | trail |



3. Students demonstrate their map-reading ability by creating a key. (15 minutes) (see fig.2)
4. Seeing the community as a whole (20 minutes)
 - a. When students have completed their keys, ask, "Who thinks they have the bottom of the map?" "Who thinks they have the top?" Then invite them to put the puzzle together in silence. Watch the community and local watershed emerge as a whole.
 - b. Next hand out the 11" x 17" maps to your students, one map for each student. Brainstorm your list of key features (water courses, major geological features, etc.) and have students annotate and/or trace using colored pencils (or crayons). The students can color-code features of the watershed: ridgelines and mountains in green, water in blue, and so on.
5. Drawing conclusions (10 minutes)
 - a. So what is the name of our watershed?
 - b. Are there main branches that feed the watershed?
 - c. Where does this water come from? Where does it go?
 - d. How does our community rely on the watershed?
6. Students complete the key and the color-coded map.

ASSESSMENT

1. Students have produced clearly colored and labeled keys.
2. Students have produced colored and annotated watershed maps.

Evaluation Rubric

| PRODUCT | Unacceptable | Beginning to progress | Getting closer | Meets standard | Exemplary |
|-----------------------|---|------------------------------------|---|--|--|
| Key | Key is both sloppy and incomplete | Key is either sloppy or incomplete | Key is neat and clear, but still incomplete | Key is neat and complete | Meets standard, plus is well executed and rich in detail |
| Watershed maps | Map does not annotate or trace all features | Map traces some watershed features | Map traces most watershed features | Map clearly notes ridge lines, basin and water courses | Meets standard, plus is well executed and rich in detail |

FURTHER REFERENCES

Additional educator resources for **Jean-Michel Cousteau Ocean Adventures** can be found at pbs.org/oceanadventures.

For further information on questing, see *Questing: A Guide to Creating Community Treasure Hunts*, by Delia Clark and Steven Glazer (Hanover, NH: University Press of New England, 2004).

Quests have been published in *Valley Quest: 89 Treasure Hunts in the Upper Valley* (White River Junction, VT: Vital Communities, 2001) and *Valley Quest II: 75 More Treasure Hunts in the Upper Valley* (White River Junction, VT: Vital Communities, 2004).

AUTHOR

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CREDITS

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