

Science and a Sense of Place: Watershed Education

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A Sense of Scale and Interconnectedness Using Topo Maps

Background:

Objective: Students will learn how to read topographic maps, how to recognize drainage basins on maps, a sense of scale of drainage basins, and a sense of the interconnectedness of drainage basins.

Materials:

Topographic maps (A) of Bryn Mawr area

Colored pencils

Time: two hours

Steps:

Work in pairs. Each pair gets one copy of the full Norristown quadrangle (A); each person gets a copy of the printout of the southern part of the Norristown quadrangle (B). Use map A to answer questions about topographic maps in general. Use map B to draw the boundary of the pond's drainage basin using a colored pencil. In a different color, draw the boundary of Mill Creek's drainage basin.

Map A: Topographic map of Bryn Mawr

Get familiar with topographic maps

1. What is the scale of this map (a ratio of 1:x)? How much real-life distance does one inch represent on the map?

2. What is the latitude along the northern border of the map? What is the latitude along the southern border of the map? What is the difference in latitude between the northern and southern borders of the map?

3. What is the longitude along the western border of the map? What is the longitude along the eastern border of the map? What is the difference in longitude between the western and eastern borders of the map?

4. When was the latest revision of the map? List one feature that is present in today's landscape but is not on the map.

5. The *contour lines* are lines of constant elevation. The *contour interval* is the vertical spacing between contour lines. What is the contour interval on this map?

6. What is the lowest elevation on the map and where is it found? How can you find this lowest point by using your knowledge of drainage basin shapes?

Map B: Print-out of 1992 Norristown Quadrangle

Explore the Bryn Mawr College area

7. Using a colored pencil, make a dot where the Bryn Mawr College pond is located. Why is the pond not plotted on the map?

8. Draw the boundary of the pond's drainage basin.
9. What topographic feature forms the drainage divide (i.e., how would you recognize the divide in real life)?

10. What is the size of the pond's drainage basin?

11. Is the drainage basin urban or rural?

12. Into which creek does the pond drain? Which river does this creek flow into?

13. Using a new color, draw a dot at the confluence of this creek and river.

14. Draw the boundary of the creek's drainage basin.

15. What is the size of this drainage basin?