

7.4 Connections	Recognizes that multiple ideas may be connected	Recognizes that connecting multiple ideas may provide deeper meaning	Recognizes connection between multiple ideas, systems or solutions to construct meaning	Connects multiple ideas, systems or solutions that provoke meaning in novel ways (i.e. demonstrating empathy by synthesizing complexity, metaphoric thinking, applying patterns).
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Hydro 11/12 Making Connections

The Question:

How would runoff within the Winooski watershed be of concern to the overall water quality of the Winooski River? What can be done to mitigate the negative effects of runoff?

In your answer, use and make meaning of the terms... solute, solvent, runoff, watershed, polar and non-polar, point and/or non-point source pollution/pollutants.

.... Take your time on this as it is what you will be assessed on for the LE (using key words, making meaning of key words, connecting key words (ideas), clarity).

To prepare for your answer... Find these resources: (*leave them organized in your binder...*)

Geosphere 4 & 5 (Principles of Geology)

Hydrosphere 6 (Solutions... Like Dissolves Like)

Hydrosphere 7 & 8 (Contour Maps and Watersheds)

Hydrosphere 9 (Water Cycle)

Hydrosphere 11&12 (Runoff and Pollution, and Runoff Mediation)

Hydro 11&12 - List of water quality factors (handout)

Practice your answer using the following prompts...

1. Winooski Watershed (Geo 4&5, Hydro 7&8)

define watershed: _____

On the attached cartoon of the Winooski:

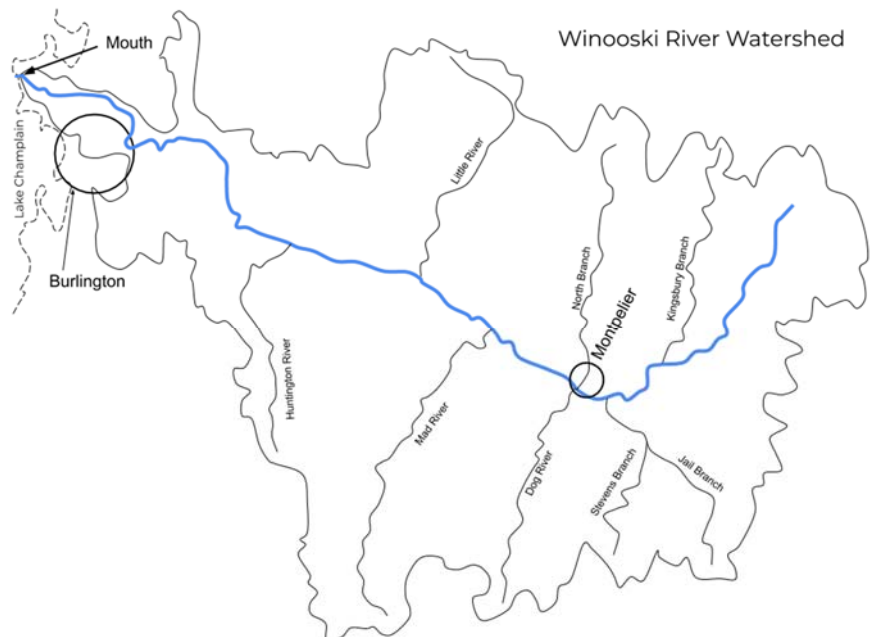
identify the sources (mark with an 'S')

identify the mouth (mark with an 'M')

(redraw/highlight) the rough outline of the watershed boundary

Indicate with arrows:

which way the water would flow with respect to the watershed boundary,
which way the water would flow in the tributaries,
which way the water would flow in the Winooski



2. Fate of Pollutants (Hydro 7, Hydro 11/12)

define pollutant: _____

Prompt: Depending on the nature of the pollutant, it may end up deposited in the river bed, dissolved into the river water, or stay undissolved and get carried downstream.

Using the examples of pollutants given, and others you may come up with, **identify** and **explain** the fate of the pollutants....
...you may group substances that have the same fate...

- | |
|--------------------|
| road salt |
| pesticides |
| herbicides |
| fertilizers |
| gasoline |
| oils |
| animal waste from: |
| livestock |
| wildlife |
| pets |

identify / describe negative consequences of these pollutants

3. Runoff (Hydro 9, Hydro 11/12)

define runoff: _____

(in general) How can runoff be an issue for the water quality of the Winooski River?

What specifically might runoff bring with it into the Winooski River?

include what might be brought in an urban area (like the thriving metropolis of Montpelier),
include what might be brought in a rural area

4. Mitigating Runoff Issues (Hydro 11/12)

Distinguish between **green** and **gray** stormwater infrastructure: _____

Summarize **green** ways to mitigate issues associated with runoff (*there are three*)

1. _____

2. _____

3. _____

Provide a specific runoff issue associated with our “backyard”... somewhere around MHS, or in town, or in your neighborhood.

Describe a green infrastructure solution to the problem that you identified above.
