Aquatics Section Training Activities

1. **Aquatic Macroinvertebrate Bioblitz** – Download iNaturalist (maybe create an account for your School/Team) and get out to a local stream. Start turning over rocks and looking for critters, put them into your specimen container and take a good photo. Upload to iNaturalist and see if you can get an ID from the app or from other users. See if you can get 50 different individual bugs. Note how many different species you found and count up the total number of individuals for each species.

2. **Topo Map Interpretation** – Use the USGS topoBuilder (available here) to identify and download the 25k or 7.5 minute topographic map that includes your school location (or local library). Complete the following activities:
    a. Contributing Area: Using the edges of your school grounds (or those of your local library), delineate the watershed that could drain down toward your school.
        i. What aspects of the map made this process easy or difficult to accomplish?
    b. Downstream Impacts: Using the middle of your school grounds (or those of your local library), trace a line that demonstrates where runoff from your school would flow until it goes off the map.
        i. What are the named streams or waterbodies that runoff from your school or library has an influence on?
    c. Local Relief: Identify the highest elevation in your topo map. Now, identify the lowest elevation on your topo map. The difference between the two represents the local relief. More rugged areas will have greater relief and flatter areas will have lower relief.
    d. Stream Order: Are there any mapped streams in your school's watershed? If so, identify the stream order for each stream segment.

3. **Water Quality Data Exploration** – Pull up the Vermont Agency of Natural Resources Atlas (search for "VT ANR Atlas") online and make sure the "Water Quality Monitoring" layers are turned on under the "Watershed Management" layer group. You can turn off all the other layers if you want. Zoom into a stream or other body of water that you are interested in. Are there any indicators that the state has collected water quality data on any portion of that water body? If so, answer the following questions:
    a. What water quality parameters have been collected?
    b. Are there multiple sample sites in or along the waterbody? If so, what differences do you see about the location description and what data have been collected at the different sites?
    c. When was the most recent available data collected? When was the earliest data collected? Do you see any differences in how frequently data for different indicators are collected?
    d. If there are multiple years' worth of data, do you see any clear trends? Is water quality improving, deteriorating, or is there no clear trend?

4. **Low Impact Development Assessment** – Using the Vermont Low Impact Development Guide (available here), complete an assessment of stormwater management at your school grounds (or those of your local library). Take a look around property and answer the following questions:
    a. Where does rainwater and snowmelt from the property flow? Does it eventually flow directly into a stream? Or does it flow into a storm drain?
    b. Were any low impact development practices used? How do they help mitigate stormwater runoff concerns?
    c. Are there any low impact development practices that could be added to the site? How would they improve stormwater management?
    d. Consider writing a letter to those responsible for the maintenance of the property describing any potential low impact development improvements that should be considered.