Teacher name: Kathy Grant

Grade level: Thetford Academy - Grade 7

Unit title: River Study Field Work: Site Maps and Macroinvertebrate Studies, Nature Journals, Classification

GEs/ GSEs:

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Content:
- Water Cycle
- River Vocabulary
- Process:
- Sampling Techniques
- Measuring Water Flow and Volume

Essential Questions:
1. How does a scientist learn about river ecology?
2. What macroinvertebrates live in the stream on our campus and how are they adapted for life there?
3. How does the water in a stream or river fit into the earth’s water cycle?
4. How are these animals classified?

Length of Unit: multiple class periods (54 minutes each) spread throughout the entire school year

Assessments of learning:
1. Students will produce a portfolio of aquatic insect identification cards in the form of a field guide. Each student will research and produce 1 card then share and collect cards from their classmates.
2. Students will complete a site summary sheet with test data.
3. Students will produce a quadrat study diagram.
4. Students will make a journal and learn some basic drawing techniques to sketch from nature.
5. Students will learn to make and use dichotomous keys to classify animals.

Activities to support learning targets: (in no particular order and spread throughout the academic year)

- Read *The Mystery of the Missing Cutthroat* by Jean Craighead George
- Make nature journals
- Learn and practice drawing techniques
- water cycle, river vocabulary review, how to measure current and flow
- lessons on animal classification - making and using dichotomous keys for arthropods
• Electro fishing demonstration to see how biologists sample the salmon population in Vermont
• Site visits - go to the stream in different seasons to see how it changes over time - sketch site, measure TO, dissolved 02. pH, current, and volume
• build kick nets and quadrat frames, select invertebrate for research
• video - "Bugs of the Underworld"
• read nature articles from local newspapers
• Springtime site visit - (with Susan) - use a longer class period to collect, identify, and 
  observe specimens
• research species and produce identification card
• make portfolio to hold card collection
• Site visit #3 - quadrat inventory and sketch
• presentations - finish portfolios and swap the trading cards

Supporting resources:
Susan Sawyer, naturalist

UVLEL unit roadmap 5126/20 10 1. Filkins