

Upper Valley Linkages for Environmental Literacy (UVLEL)

Unit Roadmap

Teacher name: Annemarie Stout
Grade level: Third (easily adapted to any level)

Unit title: *Tracks and Traces in the Upper Valley Ecosystem*

Length of Unit (days/periods) Flexible – 2 or 3 periods for each activity, 8 activities

Timeline Touching on each season is ideal, however, make it flexible to classroom needs. I threaded this theme throughout the year to make connections to daily life now and in the past.

Goal(s) of this unit *To help students learn to “look” and observe nature and changes around them. How can they help to preserve the wonderful things we have. ☺*

Ultimately; to tie together the Social Studies and Science unit from our district curriculum, NH State Standards, and Next Gen SS including: Native Americans, forest ecosystem, food chains, and the Colonial period.

My concept is to connect Native Americans, the Upper Connecticut River Valley, riverbanks, Abenaki, agriculture, forest ecosystem, river ecosystem, Indian villages, and Native American housing of this local area through observation, nature journaling, and experiential projects.

Essential questions addressed (worded in student-friendly format)

What do you see today? What did local peoples see hundreds, even thousands, of years ago? How did they survive? What are your needs today, what were the needs of peoples of long ago? Have they changed and how?

S:LS3:4:3.2 Recognize that for any particular environment, some kinds of animals and plants survive well, some less well, and some cannot survive at all.

How are Humans similar to animals? (needs, eyes, ears, etc.)

S:LS4:4:3.1 Identify what the physical structures of humans do (e.g., sense organs– eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals. [LS4(K-4)FAF-8]

NEXT GEN Science Standards: *3.Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms (additional: 2.Interdependent Relationships in Ecosystems; 3.Inheritance and Variation of Traits: Life Cycles and Traits; 5.Matter and Energy in Organisms and Ecosystems)*

NH State Science Standards

LS3– Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).LS4– Humans are similar to other species in many ways, and yet are unique among Earth’s life forms.

Students will know and understand:

- About Native Americans now and then
- About Nature and how we interact with it
- Hierarchy of needs, then & now, of people, plants, and animals
- Food chains/food webs
- Habitats, specifically forest
- River, forest & field ecosystems and how they are similar and different

Students will be able to:

- Observe nature and draw basic illustrations with labels in nature journals
- Explain what they see and their inter-connections with the world around them
- Research and write about their learning
- Present about their learning or discuss in a general class setting

Activities to support learning targets (See resources and the internet for endless ideas, but be sure to GET OUTSIDE!!)

Suggested lessons/activities:

- Visit **Kearsarge Indian Museum**
 - After having done some general Native American studies, see websites, local libraries, etc.
 - Take photos at the museum of each display
 - Have each child write a description of the photo and tape them reading the description, make a video, slideshow, or movie
 - Later in year, after animal studies, Native American studies, habitat, etc, culminating event will include gathering supplies for food, fire, & shelter, showing changes for survival over the centuries.
- **Visit Fort #4**
 - After general research of 1600-1800's studies, including Native American and "white"man interactions
- **Nature Journaling**
 - Throughout the school year, entries in a basic journal, dates, labels, sketches of observations inside or outside the classroom, keep track of learning
- **Animal Research Book Report**
 - Report
 - Haiku
 - Outdoor (and inside to start) observations of tracks each season
- **Food Chain & Food Web** general lessons – local, find on websites, or other
- **Owl/predator/forest habitat**
 - Owl research, made into an OWL shape book
 - Owl Hand Print Posters and found Owl "pellets".
 - Mike Clough, **VT Natural History Museum** – live presentation
- **Who Am I**
 - Poster or pop-up book- of local mammals
 - Animal picture- under a cover page, the cover page has pop-up questions or pieces of information

- For example: I use my eyes to catch ____ for dinner. Native Americans used my hide for clothing. Etc.
- Connect animal studies to human eyes, ears, sight, sound research
- **Animal Tracking**
 - General in-class studies
 - Practice animal strides/"walk" like in or outside classroom
 - See websites- do a nature walk each season or multiple times in a season
 - Practice in a sandbox
 - Observe books / sketches / molds/casts
 - "My Animal Signs Field Guide" website below
- **POSSIBLE FINAL CULMINATING EVENT: SEE BOTTOM**
- Could extend each lesson to compare each topic, for example owls and/or forest habitat and food sources (hierarchy of needs) at each of the four seasons. *(revisit the topic throughout the year, briefly- entries of research or observations into a nature journal) (changes over time/seasons, or compare over centuries,(how man has used the animals or forest), etc)*

Assessments of learning - which NGSS PE does this unit build toward?

How are students going to show that they understand, know and can do the above things? Consider formative assessments, summative assessments, and performance-based assessments.

KWL Chart

Research Projects

Nature Journal

Final Portfolio

"Forest Days" or something similar

Supporting resources (websites, book titles, videos, human resources, etc.)

Human Resources:

Four Winds Nature Institute Staff

Susan Sawyer- Naturalist, Four Winds <http://www.fwni.org/staff.html>

Mike Clough- Naturals, presenter extraordinaire <http://www.fwni.org/staff.html> or http://www.vermontmuseum.org/museum_003.htm

Cindy Siegler's Abenaki unit

ONLINE / website Resources

TRACKS:

**** <http://www.fws.gov/uploadedFiles/Animal%20Signs%20Guide.pdf>

*** http://files.dnr.state.mn.us/education_safety/education/project_wild/animal-tracks.pdf

<http://dnr.wi.gov/eek/cool/trackQuizLVLone.htm>

<http://dnr.wi.gov/org/caer/ce/eek/nature/track.htm>

<http://maine.gov/sos/kids/about/tracks.htm>

<http://maine.gov/sos/kids/about/wildlife.htm>

http://www.biokids.umich.edu/guides/tracks_and_sign/

<http://nationalzoo.si.edu/Education/ClassroomScience/AnimalTracks/Teacher/>

<http://www.almanac.com/content/animal-tracks-identification-critter-pictures>

<http://www.dgif.virginia.gov/wildlifemapping/handouts/animal-tracks.pdf>

http://www.chicagochildrensmuseum.org/CCMBIH_AnimalTracks.pdf

NH & VT Animals & habitats:

<http://www.wildlife.state.nh.us/pubs/kids.html>

http://www.wildlife.state.nh.us/Wildlife/wildlife_profiles.htm

<http://www.wildlife.state.nh.us/Kids/kids.htm>

<http://www.vtfishandwildlife.com/vtcritters/wildlife.cfm>

NH & VT Native Americans

http://www.nh.gov/folklife/learning/traditions_native_americans.htm

http://www.flowofhistory.org/themes/movement_settlement/abenaki.php

<http://www.indianmuseum.org/>

<http://www.fortat4.org/>

Habitats (Forest and beyond)

<http://www.fcps.edu/AldrinES/websites/HabitatWebsites.pdf>

<http://www.brainpopjr.com/science/habitats/forests/preview.weml>

<http://pbskids.org/wildkratts/habitats/north-american-forest/>

ProjectWild, etc.

http://www.nhplt.org/resources/focus_on_nh_forests/

<http://www.projectwild.org/>

Books:

Mammal Tracks and Scats by Lynn Levine

Animal Tracks, A Pocket Naturalist Guide (other titles also available)

Petersons Guides

CULMINATING EVENT:

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Year Long Study: *Tracks and Traces in the Upper Valley Ecosystem*

Tie-to-District Curriculum: Native Americans, animals, forest habitat, space (spatial awareness and outer space (sun, moon, stars)), environmental awareness

NEEDS: food, shelter, clothing- changes over time

OVERALL: helping students with observational skills “learn to look” and understand what they are seeing

- **Observation** and **tracking** is integral to activities for both days.
- **Identification** of wildlife (tracks, birds flying, holes in nuts, broken branches, “see what is going on”, evidence of wildlife, etc.)

Final Event:

Forest Field Trip(for example, Storr’s Hill Lebanon, NH; Billings/Marsh NPS, Woodstock, VT; school forests, town forests, etc..)

Day 1:

1. Introduction

- a. Tarps & tables- outdoor classrooms (use a wood shed, tent, picnic table, whatever area that can be organized and fun)
- b. Review Schedule & Safety Briefing

2. Environmental & Archeological Orientation

- a. Identify and Catalogue (list & drawings) of this environmental and archeological site from thousands of years ago to present (educator, study a little history of your site ☺)

3. Mapping

- a. Journaling

4. Develop **terrain model**

- a. Designate project locations, natural materials, moss, sticks, label (craft sticks?)

5. Additional Map & **compass** work

Day 2:

- a. **Review** previous day
 - i. Establish priorities

b. Forage

- i. Continue gathering if needed
- ii. Meal preparation
- iii. Gather firewood

c. Shelter

- i. Design plans for a shelter
- ii. Gather materials for wiki-up
- iii. Build shelter

d. Conclusion

- a. Just like in a State Park or as Native Americans have always done
“Pack in- Pack out”
- b. Clean-up after yourself
- c. Discussion
 - i. How have human’s **needs** changed? (haven’t- food, water, shelter, clothing)

What has changed in order to **meet** those needs?