

ESSENTIAL QUESTION: How does the White River affect the health of our Community?

ENDURING UNDERSTANDING: Students will develop a deeper understanding why a healthy river is vital to a community's sustainability.

Introductory Lesson Healthy v. Unhealthy River

In the beginning, explore the students' involvement with the river. The class will develop a journal that list what a healthy river looks like versus an unhealthy river. Explore the differences and show unhealthy rivers vs. healthy ones. This lesson will also look to explore the definition of sustainability and ask students to write examples of the definition in their journals.

Formative Lesson Ideas (#2-9)

River Talk. What are the different ways the river communicates with the town? What ways do people interact with the river? Outcome: Better understand the different usages the river holds.

River Perspective: What do healthy rivers need, if our river could talk what would it say? Create a narrative from the rivers perspective using details to support any statements made about the overall health of the river. Outcome: gain better understanding of the requirements to ensure a healthy river. **History of our river:** Pictures over time that show changes to our river both physically and usage demands that have changed. Outcome: Understand that solutions and environmental issues change over time. **Farmers' perspective:** Students ask questions and record information. Outcome: to use for demonstrating through writing how people use information about watershed to protect resources. **Vermont Fish and Wildlife Hatchery:** Discover ways in which an agency helps shape our watershed. Outcome: Understand the ways in which science ideas can protect our resources and how the hydrosphere, in particular interacts within our ecosystem. **Lessons 6-8:** Students will use kits to monitor the actual health of the river. Outcome: To help students understand how environmental groups and agencies obtain information to protect a resource. **Story Book:** Informational will help illustrate the importance of a healthy river. Outcome: help to celebrate healthy water for our community to use and appreciate the findings at a community picture sharing. **Planning for the Culminating Activity:** Research peer critique of work and go overrules to follow. Allow class to discuss best way to present findings to the White River Partnership, school and community.

3 History of our river. Discuss the human impact on our river, and provide stories of how the river has shaped our community over time. Explore local geography and examine how the river has changed over time by nature and from people's usage. (Incorporate the Landscape Change Program) (VT Fish Hatchery) The VT Fish Hatchery presents information on tropical storm Irene and how it impacted our local economy.

4 Guest speaker's perspective on the role the river play's on the comm unity's sustainability. Invite local farmer who works along the banks of the white river. Have students prepare questions to ask and

responses up in a journal log to use for material during their culminating activity.

5 Healthy Water Healthy People (testing kit manual) for introduction in learning and becoming familiar with river testing and terminology involved in river testing. Use science journals to look up and learn new words involved in this testing kit material.

6 River Keepers: Guest Presentation by the White River Partnership or another stewardship group. How can people take care of their rivers and how can healthy rivers help a community? Outcome: begin to plan what these answers will look like and introduce test kits to the students and provide lessons (modeling how to use kits).

8 Students will utilize river kits to gather information, record results and analyze data. This material will be used to help provide detailed support for their informational essay.

9 Picture/Story book to educate younger students on findings: This event could be held at an assembly, through a classroom exchange or by a community event after school inviting the whole community.

10 Planning for the Culminating Activity: Students critique peers work and findings in preparation for final draft of paper. Pair share and present to class how our findings should be presented to ensure the most effective delivery of the findings and how to involve community moving forward so we may gain stewards for the river.

Lesson # 10 CULMINATING ACTMTY: Summative Assessment to Essential Question

Event: Students share research, invite community/authentic audience to hear findings of whether the White River is healthy and how the river benefits our community. What ways can we ensure the river is better protected for future generations? How might our local community get involved in helping the river?

RESEARCH SUMMARY: Students record, compile, interpret and present their findings to community members, along with representatives from the White River Partnership/Vermont Fish and Wildlife Agency.

Outcome: Community Action Plan.

PERSONAL RESPONSE: Student Reflection: Informational essay on the health of the river and whether or not it is vital to the sustainability of our community?

FINAL OUTCOME: Students will process their findings from data observation, river monitoring and historical research of the White River to our school, White River Partnership and community, along with suggestions for improving our river's health. Students will distribute a petition for concerned community members to sign to offer support and help with following findings students uncover to help promote a healthy river.

EVENT: Students will donate or offer their story books for loan to the town library as a way to celebrate the importance of a healthy river, but at the same time educating the community about the river's significance. The local citizens may leave comments for individual books. I will use these comments as a way to honor each student's contributions for investigating the connection between the health of the river and the town's people.