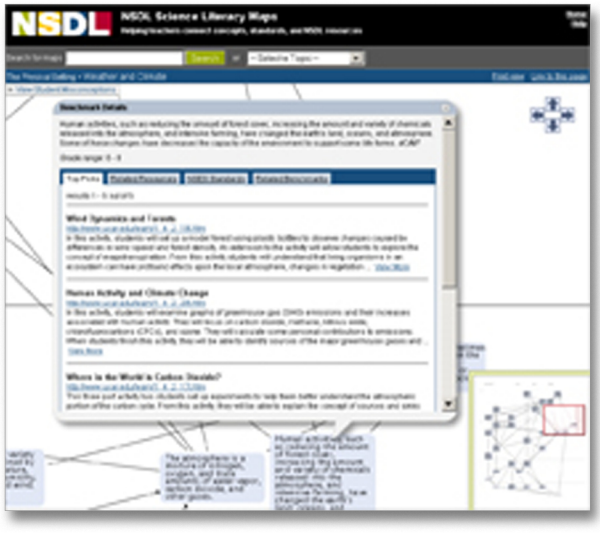
Using Literacy Maps in Instruction

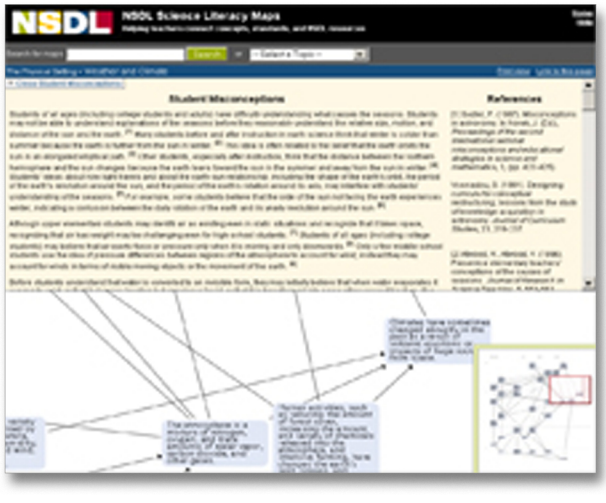
The NSDL *Science Literacy Map Tool* emphasizes the integrated nature of scientific scholarship. For exampl a middle school teacher who is planning a unit on climate for 8th graders may view the Weather and Climate map by selecting it from the Tool's pull-down menu. As the teacher "sees" how eighth grade students understand climate by navigating around the interconnected concept map, she learns that their understanding of the volatile nature of how the Earth's climate can change is critical for students at this grade level.

She zooms in on climate change and finds out that benchmarks indicate students should know that both human activities, such as logging, and natural disasters, such as volcanic eruptions, can cause the climate to change. She sees that it is important for her unit to emphasize that these changes can be abrupt or gradual in order to lay the groundwork for studies of climate patterns in later grades.



By clicking on a science literacy map benchmark users are presented with a list of NSDL resources that help teach a concept.

She clicks on the benchmark about volcanic eruptions and climate change and retrieves NSDL resources that support this learning goal. As she reviews search results, she may wonder about how much her students might need to know about volcanoes prior to starting this unit. She presses the related benchmarks button and is able to view all the pre-requisite and subsequent benchmarks, drawn from across all the science literacy maps, that are related to the volcanic eruption and climate change learning goal. She sees that there are learning goals related to volcanism and plate tectonics that should also be covered. She opens the student misconceptions research box and learns that many students confuse the ozone layer with the greenhouse effect and makes a note to cover it in more detail.



The *Science Literacy Map Tool* also provides one-click access to associated background research on common student misconceptions.

The *NSDL Science Literacy Map Tool* provides teachers with just-in-time streamlined access to online learning resources aligned to specific learning goals and focused on their students' abilities. Give this easy-to-use tool a try at **http://strandmaps.nsdl.org/.**

ACKNOWLEDGEMENTS

The NSDL *Science Literacy Map Tool* is a collaborative initiative of the University of Colorado at Boulder, Digital Learning Sciences, Project 2061 at the American Association for the Advancement of Science (AAAS), and the National Science Digital Library (NSDL). The NSDL *Science Literacy Map Tool* content—concepts and maps—are the Benchmarks and Strand Maps developed by Project 2061: *Benchmarks for Science Literacy–Atlas for Science Literacy.*

This material is based upon work is supported by the National Science Foundation under Grants No. 227648, 424671, and 227888. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.