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## *The Cache la Poudre River: From Snow to Flow*

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This lesson plan and corresponding activity were created by researchers in [Watershed Science](#) at Colorado State University. It is intended for students in grade levels 6<sup>th</sup> – 8<sup>th</sup>.

### **Summary**

Students will work through an easily navigated ESRI Story Map that educates them on the hydrologic system in the Cache la Poudre Watershed, located in northern Colorado. Throughout the lesson, students will learn about basic hydrologic principals and processes, as well as the different defined snow zones that occur within this watershed. The activity also illustrates how these hydrologic processes relate to drinking water supply, and alludes to how these may be sensitive to climate change.

### **Context for Use**

This activity can be used as an in-class or at-home assignment to educate students on the hydrologic system that supplies water to northern Colorado. This activity is intended to be completed on a computer, with additional printable worksheets also available.

### **Learning Objectives**

- Be able to define hydrology and explain components of the hydrologic cycle
- Know the local watershed in Fort Collins, Colorado
- Be able to identify and describe specific qualities of persistent, transitional, and intermittent snow zones
- Understand how to interpret time series graphs with hydrologic variables including snow depth, soil moisture, and stream discharge

- Be able to explain how snowmelt relates to river flow in a mountain watershed
- Know where water is processed before it is safe to drink

## Teaching Materials

- [Story Map](#) via ESRI
- [Pre-test](#) and [Post-test](#) to assess learning
- [Follow-along worksheet](#) for students
- [PDF of Story Map](#), if computers are not accessible

*Note: all materials listed above can also be accessed through the ESRI story map*

## Lesson Procedure

Although we encourage teachers to be creative with this lesson, we recommend some procedural steps:

1. Have each student use a personal computer, or share computers in groups of 2 or 3
2. Hand out the follow-along worksheet (Note: the follow-along worksheet can be a way for students to receive points and for teachers to assess learning)
3. Have students read the Activity Introduction in the ESRI Story Map and take the Pre-test
4. Next, have students continue with the ESRI Story Map and follow-along worksheet
5. When finished, instruct students to take the Post-test

## Teaching Notes and Tips

According to Colorado Public Schools curriculum, 6<sup>th</sup> graders are required to learn about hydrology. This activity relates to Objective #2 under the Earth Systems Science category for 6<sup>th</sup> grade students in the State of Colorado. This module is not limited to grade levels. The module assumes that students have *some* background knowledge on the water cycle and earth science and is meant to help localize that learning, as well as provide a medium for allowing active scientific research to reach students. We recommend that this module be used in a classroom setting, but it can also be assigned as home work. At the beginning and the end of the story

map, there are links to a pre-test and post-test. These tests are greatly encouraged, and allow the creators of the story map to assess whether or not the information was presented effectively. The story map also includes a section for feedback; we encourage our users to use that space for any questions, comments, or concerns.

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