



Haul It Home

Grade Level:

Upper Elementary

Subject Areas:

Science, Social Studies,
Mathematics, Language
Arts

SD StandardsScience

4.S.1.1

4.S.1.2

Math

4.A.3.1

Social Studies

4.US.1.2

4.G.2.1

Language Arts

4.S.1.1

4.S.2.1

4.L.2.1

Setting:

Outside and classroom

Skills:

Recall, Observation,
Calculation,

Prior Preparation:

Make copies of the Sod House excerpts to hand out to students. Have students read aloud in class each excerpt and hold an in-class discussion of what the pioneers were doing in their lives with their limited water resources. These stories are the “lead-in” to the activities in this unit.

Make copies of the “Haul It Home” math worksheet.

Objective: Students will develop an awareness of how water usage has changed through history and relate how access to water today may encourage wasteful usage.

Materials:

Four 5-gallon Pails (teacher provided)

Two 16-ounce Plastic Cups (teacher provided)

One 1-gallon container (teacher provided)

Access to Water

[Excerpts from The Sod-House Frontier](#) - Laminated

[“Haul It Home”](#) Laminated Worksheet

Background:Today:

The average American family (3 people) uses 200 gallons of water per day. This includes all uses of water, such as bathing, flushing the toilet, washing clothes, etc. It's a fact that using water today is pretty easy. All a person has to do is turn on the faucet. There is little or no work involved. Normally, when a home is hooked up to a municipal or rural water system, the occupants can use as much water as they want provided they are ready and willing to pay the bill for the amount they've used. One exception to this luxury of unlimited water use may occur during times of drought when supplies are low and demand is high. Water system operators will then ask their water users to conserve water.

1890's:

Hauling water was a lot of work. Water was usually hand-pumped or bailed out of a well, pond, or cistern and hauled in buckets to where it was needed. (Note: A five gallon bucket of water weighs about 45 pounds; a 1 gallon bucket of water weighs about 10 pounds - depending on the material the bucket was made from). The well was often located near the barn and the livestock to reduce the hauling distance. Close proximity to the livestock had advantages and disadvantages for the farmer. For the farmer's wife and family, this often meant that hauling water was a chore to be completed many times a day. Children were given this responsibility once he/she was old enough to carry the weight of the water. Hauling water was a process that everyone did as water was needed for the farm animals, the gardens, and household uses.

Procedure:

- Inform your students that the average American family uses 200 gallons of water every day. This includes all uses of water, from bathing to flushing the toilet, drinking, washing clothes, etc.

- Have two of the 5 gallon buckets and the 1 gallon container filled with water. Invite the students to come up and lift the 1 gallon container and then try to lift the 5 gallon container.
- Ask your students if they would use 200 gallons of water a day if they had to haul it. Explain that they would have to haul the 1 gallon container 200 times or the 5 gallon bucket 40 times.
- Have your student guess how much 1 gallon of water weighs (*8.34 pounds per gallon - without the weight of the container included!*)
- How much would 200 gallons weigh? *1,668 pounds*
- You already have two of the 5 gallon buckets filled with water. Now set your other two 5 gallon buckets (empty) a distance away from each of the buckets filled with water.
- Have your students form a line behind each of the full buckets. Give the first student in each line a 16 ounce cup. Have one student stand by each of the empty buckets. These two students will be the counters.
- Have the students imagine their little cup is actually the 1 gallon container (we are using imagination so that we do not waste water for this activity).
- Have the first student in each line fill their cup and then “haul” it to the empty 5 gallon pail and empty it. The student will return to the full bucket and let the next person “haul” water. The counter will count the number of times a cup of water is dumped into the bucket.
- Once all the water has been moved, the counter should be close to 40. Explain to the students that they would have to do this 4 more times to reach 200 hauls. Have them imagine how tired they would be if they had done this with the 1 gallon container 200 times? That would be the realistic amount of water an average family today uses in one day!
- Ask your students again if they would use 200 gallons of water a day if they had to haul it. Your students will be amazed at the amount of time and energy it takes to haul the water.
- Have them brainstorm about what they do at home that could be construed as “wasting” water. Ask for ideas about what the pioneers would have done to save water that is not being done now in their own homes.
- Give a copy of the “Haul It Home” math worksheet to each student. After they have completed the worksheet, review the answers. Hold a discussion with the class about the amount of buckets they would be hauling from the well or pond just to get through the day!

Extension

- Have students calculate their “water footprint” by going to www.h2oconserve.org or www.waterfootprint.org