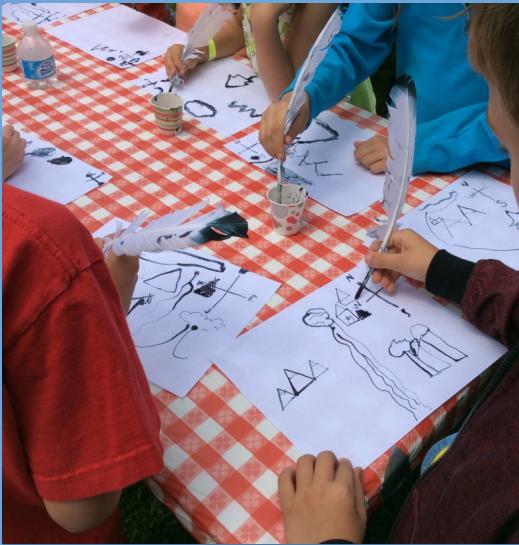




water in northern colorado

A HISTORY LESSON IN 10 PAGES OR LESS
and the colorado-
big thompson
water project



A HISTORY LESSON IN 10 PAGES OR LESS

The City of Loveland Cultural Services Department strives to enrich lives and connect our community through diverse arts and history experiences.

The Loveland Museum has created a series of quick lessons designed to provide basics on a topic important to our local history. These lessons have

been compiled by staff and volunteers at the Loveland Museum. Suggested activities give ideas for hands-on learning and are not intended to be all-inclusive. Other resource links may also be provided in some sections for additional online learning.

ACTIVITY ONE

Water!!!

Water is needed for many things. Of course we all need water to drink to live, but water is used for so much more, making it one of the most important natural resources available. There may be many, more uses for water than you may realize.

How many uses can you think of for water?

Get a piece of paper and list all of the ways you can think of to use water. Now take your list and hide it away so that you can't see it until the end of this lesson.



Parent or Educator Note: Some answers may include drinking, bathing, cooking, watering, giving to animals (pets or ranching), irrigation, running things like toilets, dishwashers, clothes washers, watering our grass, recreation, hydropower, trapping, find certain animals or plant life, fishing, mining and more.

Parent or Educator Note

Have the student use a new piece of paper for activities

2

3

&

4

ACTIVITY TWO

Historical uses of water

Parent or Educator... read this section aloud and have the student listen carefully.

Colorado has been inhabited by many people through the years ... Native Americans, explorers, mountain men, pioneers, homesteaders and miners. They all used water in different ways. Rivers were like roads that led into the wilderness. Animals find and follow the water to drink and all of the people listed above followed water to follow the animals, or find their way through the land.

The main Native American tribes in this area of Colorado were the Arapaho on the plains and the Ute in the mountains. They drank water from rivers, lakes and streams but they also used the water to cook and wash. The water was also important because they were hunters and gatherers. The water would be where animals and plants would be found.

Explorers and Mountain Men would follow rivers and streams like trails. Mountain men, who at one time made a living from trapping beaver, stayed close to the water to find these animals. Miners needed the water from the streams to pan or sluice for gold and other ores, separating the precious metals from sand and silt.

Homesteaders and pioneers would use water to cook, wash, water their fields, and more. Ranchers would need it to keep their livestock alive.

Ask the student to write at least one example of how each of these people used water, other than for drinking:

Person	Later, you can compare their answers to these:
Native American	Find animals to hunt, wash clothes, cook
Mountain man	Trap beaver
Miner	Pan for gold
Explorer	Find the way in or out of a canyon
Homesteader	Crops, wash, cook
Rancher	Give to animals to keep them alive

Water for Farming

ACTIVITY THREE

Many crops have been grown in Colorado since the first homesteaders began farming here. Can you name some of the grains, vegetables and fruits grown now or in the past, here in Colorado? Think of some of the food you eat or see at your grocery store, or farms you might notice along I-25 when you drive to Denver or along I-70 on the western slope of Colorado.

Older students: make a list, research some of the crops that were grown here in the past, but perhaps not grown here now

Younger students: draw pictures of the crops listed below



*Image from the
Loveland Museum Collection*

Parent or Educator, some sample answers:

Potatoes • Alfalfa • Cabbage • Cantaloupe • Lettuce • Corn •
Onion • Wheat • Sugar Beets • Hay • Carrots • Barley • Cherries • Pears • Peaches •
Grapes • Apples • Pumpkins

ACTIVITY FOUR

Water for Fun



Water is a popular base for recreation in Colorado. What is your favorite water sport? Be sure to think outside the box ... water comes in many forms in Colorado!

Older students: make a list and then write about your favorite water-activity.

Younger students: draw pictures and explain your favorite water activity.

Parent or Educator, some sample answers:

Fishing • Boating • Swimming • Skiing • Water skiing • Rafting • Tubing • Paddle boarding •
Snowboard • Sled • Canoeing • Kayaking • Water balloons •

Learn More

Bureau of Reclamation

Established in 1902 under President Theodore Roosevelt, the Bureau of Reclamation is best known for the dams, powerplants, and canals it constructed in the 17 western states (see map). These water projects led to homesteading and promoted the economic development of the West. Reclamation has constructed more than 600 dams and reservoirs including Hoover Dam on the Colorado River and Grand Coulee on the Columbia River. Today, they are



the largest "wholesaler" of water in the country. They bring water to more than 31 million people. Reclamation is also the second largest producer of hydroelectric power in the United States. 53 powerplants annually provide more than 40 billion kilowatt hours generating enough electricity to serve 3.5 million homes. *Source: Usbr.gov*

Colorado-Big Thompson Water Project

The Colorado-Big Thompson Water Project is exactly what the title says ... A project that takes water from the Colorado River system and puts it into the Big Thompson River system.

"Homesteaders in the Colorado Territory quickly learned that water was a precious resource in this semi-arid climate and irrigation would be a necessity in order to consistently grow crops on their newly acquired land. In 1937, the tunnel project (CBT project) was approved by President Roosevelt. Drilling began in 1940 and was completed in 1944. The tunnel was bored from both sides, and when the two sections met up, they were off by less than the width of a penny".

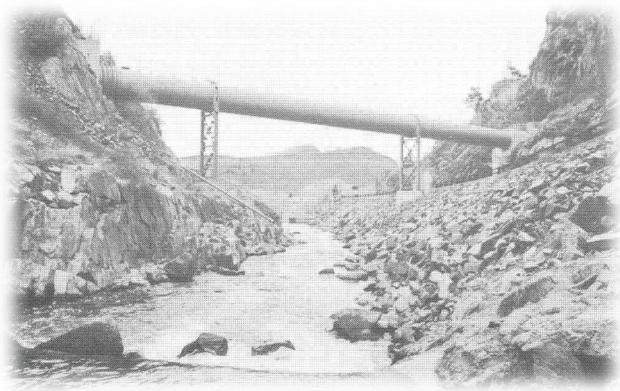
-Meg Dunn, 2016, Agricultural History of Loveland

<https://www.northerncoloradohistory.com/>

*Image from the
Loveland Museum Collection*

According to the Bureau of Reclamation more than 80% of Colorado's precipitation falls on the western slope. But 80-90% of the state's population lives on the eastern slope.

Aren't we glad there were "forward thinking" engineers in the 1930s? This project today would cost billions of dollars.



Understanding the CBT

ACTIVITY FIVE

(Activity for older students)

What does the CBT stand for? _____

Some CBT Facts and Stats

- Western Slope Reservoirs and Lakes: Willow Creek, Shadow Mountain, Lake Grandby, Grand Lake
- Western Slope Main River: Colorado
- Eastern Slope Reservoirs and Lakes: Mary's Lake, Lake Estes, Flatiron, Pinewood, Horsetooth, Carter Lake
- Eastern Slope Rivers: Big Thompson, Little Thompson, N. Platte, S. Platte
- The Alva B. Adams Tunnel is 13 miles and runs under Rocky Mountain National Park
- Six hydroelectric plants
- 12 total reservoirs
- 80% CBT water comes from snowmelt
- Two main forces of nature: snowmelt and gravity
- CBT water goes to about 925,000 people

*Horsetooth Reservoir
Usbr.gov*

Look up these sources and learn more. Draw a map or write a report on what you have learned about the CBT.



<https://www.northernwater.org>

<https://usbr.gov/>

<https://www.usbr.gov/projects/index.php?id=432>

<https://www.northerncoloradohistory.com/>

<https://www.lovelandhistorical.org/>

ACTIVITY FIVE

DIG!

(Activity for younger students)

Younger students, with permission, start with a pile of sand in your sandbox or dirt from the garden. Make the pile large enough that you can dig a tunnel underneath. Recall the quote from Meg Dunn, "The tunnel was bore from both sides, and when the two sections met up, they were off by less than the width of a penny". Dig from each side of your pile and see if you have them meet up in the middle!



ACTIVITY SEVEN

Buckets, Tunnels and Pipes

In the CBT, west slope lakes and reservoirs are like "buckets" that store the water from snow that melts or rain that falls on the western side of the mountains. Some of this water is released down the Colorado River, but much of it is stored and then pumped under the mountains through a big tunnel. The water is pumped or pushed through the Alva B. Adams tunnel, which runs under Rocky Mountain National Park. On the east side of the mountains, more lakes and reservoirs act as more "buckets" to store the water. This water is then pumped or pushed out along canals, rivers and pipes to deliver water to the Front Range.

It is harder for younger students to visualize this process. At the Museum we have a STEM activity that we can set up, where a ball can travel a series ramps (tunnels, pipes, rivers, streams) and buckets (squares you see in the photo) where the ball will rest in "buckets" like reservoirs and lakes. ***See the photo below.***



Create your own CBT

Using things you can find at home, make your own buckets, tunnels and pipes.

Compare!



Compare your first activity list (***How many uses can you think of for water?***) to your other activity answers. How many new ways to use water did you learn?

ACTIVITY EIGHT