

WATER CONSERVATION

26. Where is most of the treated water used in western cities?
In the landscape.

27. What is xeriscape?
An attractive and water conserving landscape.

28. How much water does the average person in Boulder use in a day inside the home?
66 gallons.

29. What percent of the water treated by public water systems is used for drinking and cooking?
Less than 1%.

30. What room of a house typically has the highest water use?
Bathroom.

WATER TREATMENT

31. Where does the water from lakes and rivers go to be cleaned so that it is safe to drink?
Drinking water treatment plant.

32. Where does all the water and waste from sinks, bathtubs and toilets go to be cleaned before the water is put back into the river?
The sanitary sewer system and then the wastewater treatment plant.

33. At the water treatment plant, which two processes treat water?
Physical (filtration) and chemical (chlorine).

STORMWATER

34. Name the two different types of sewer systems.
Storm sewer and sanitary sewer.

35. Where does storm water runoff from rain and snow go?
The storm drain system and then into creeks and rivers.

36. Why should motor oil, paints or other hazardous materials never be dumped down storm drains?
Storm drains connect to creeks, transporting harmful materials to fish, wildlife and people downstream.

NORTHERN COLORADO WATER CONSERVANCY DISTRICT

37. What is it called when water is diverted from one river basin into another?
Trans-basin diversion.

38. What is the purpose of the Northern Colorado Water Conservancy District?
Water distribution for 30 northern Colorado cities.

39. Water in the Colorado-Big Thompson system originates at the headwaters of the Colorado River in Rocky Mountain National Park. What side of the continental divide does this water come from?
The Western Slope.

40. Name three Front Range storage reservoirs for the Colorado-Big Thompson system water.
Horsetooth Reservoir, Carter Lake and Boulder Reservoir.



Extreme Water Wizards Trivia

(Special Teachers' Guide)



Type of Activity:

Take home study guide
In class activity

Classroom Time:

45 minutes

Printed Materials:

Extreme Water Wizards Trivia
student study guide sheets and
one set of teacher flash cards

Standard 4: Strand 4.3.

Students know major sources of water, its uses, importance, and cyclic patterns of movement through the environment.

Lesson Objectives:

- ◆ Memorize fascinating facts about local watersheds and resources.
- ◆ Engage class in activity with flash cards.
- ◆ Prepare students for Extreme Water Wizards trivia contest at Operation Water Festival.

Activity Procedure:

There are two parts to this activity:

1. Extreme Water Wizards Trivia student study guide.
2. Extreme Water Wizards Trivia teacher flash cards.

Activity Directions:

Hand out Extreme Water Wizards student study guide and have all students use this to prepare over the coming weeks for the Extreme Water Wizards trivia contest at Operation Water Festival by memorizing these water facts.

Use the flash cards to conduct in-class activities to help students memorize the water facts. Teachers may choose to break up the class into groups and/or break up the flash cards by category.

Background Information for Class Discussion:

There will be an Extreme Water Wizards trivia contest at the Operation Water Festival. Students from your school will play against students from another school.

Water Wizards Study Guide

HISTORY/GENERAL

1. What is a watershed?

The area drained by a river or stream and its tributaries.

2. Where does the drinking water for your community come from?

***Choose correct answer for appropriate community. (See Unit 1 for additional water supply information.)**

BOULDER: Silver Lake/Lakewood Watershed and Barker and Boulder Reservoir sources

LONGMONT: St. Vrain Creek Watershed, the Colorado and Fraser Rivers in Grand County, Ralph Price Reservoir (Button Rock Preserve) and Burch Lake

LOUISVILLE: South Boulder Creek and Northern Colorado Water Conservancy District via Carter Lake

SUPERIOR: Lake Granby, Carter Lake and Terminal Reservoirs

ERIE: Carter Lake and Erie, Price, and Thomas Reservoirs

3. Where are the headwaters of the Boulder Creek Watershed?

Indian Peaks Wilderness Area.

4. Where are the headwaters of the St. Vrain Creek Watershed?

Rocky Mountain National Park.

5. What is it called when water is left in a river for aquatic life or recreation?

Minimum stream flows.

FLOOD

6. Why is Boulder prone to flash flooding?

It is located at the mouth of several adjoining canyons.

7. What does a 100-year flood mean?

A very large flood that has a 1% chance of occurring in any year.

8. What should you remember to do in a flood?

Move to higher ground, such as a hill or the top of a building.

GEOGRAPHY/SCIENCE

9. Name the 3 physical forms of water.

Liquid, solid and vapor.

10. How much of the Earth's surface is covered by water?

80%.

11. How much of the water on Earth is usable fresh water?

Less than 1%.

12. What is an acre-foot, and how many gallons are there in an acre-foot of water?

1 acre of water, 1 foot deep; equaling 325,900 gallons.

13. An acre-foot of water is enough to meet the inside-home, lawn watering and industrial needs of how many urban people for one year?

4-5.

14. What is the significance of the Continental Divide to water supplies?

This is where water flows east to the Atlantic or west to the Pacific.

15. Name the four major rivers that originate in Colorado.

Colorado River, South Platte, Arkansas, and the Rio Grande.

16. What major river in Colorado do Boulder and St. Vrain Creeks eventually feed into?

South Platte (South Platte > Missouri River > Mississippi > Gulf of Mexico).

WATER CYCLE

17. Name the process of the water cycle when water changes from a liquid to a vapor.

Evaporation.

18. Name the process of the water cycle where water vapor is transmitted through the pores of leaves into the atmosphere.

Transpiration.

19. What is the name for the portion of the water cycle where solid or liquid water falls to the earth's surface?

Precipitation.

20. Name the process in the water cycle when water changes from a vapor to a liquid or solid state, such as within a cloud.

Condensation.

21. What is the energy source that drives the water cycle?

The sun.

WATER SUPPLY

22. What percent of Colorado's water supply comes from snow pack?

80%.

23. What is Boulder County's average annual precipitation?

18 inches/year.

WATER RIGHTS/ADMINISTRATION

24. Name the system of water allocation in Colorado and explain how it works.

Prior Appropriation Doctrine and it works "first in time, first in right".

25. Where are disagreements over water rights handled?

In water court.

