HOW THE WATER ARRIVES

Discussion Guide and Standards Alignment

The Green Desert · Classroom Module · 8 minutes · Grades 9–12 and community college · Captioned

What this module covers

The module follows the Colorado River from snowmelt in the Rocky Mountains to the Mexican border, naming each place the water is stored, lifted or taken out. It then returns to the two reservoirs that regulate the whole system, Lake Powell and Lake Mead, and to Imperial Dam, where the water that reaches the Imperial and Coachella valleys leaves the river for good. It closes on what depends on that system: 90 percent of southern Nevada's water, roughly a third of southern California's, 60 percent of Arizona's, and some of the most productive farmland in the country.

Learning objectives

By the end of the module, students can:

1. Trace the Colorado River from its headwaters to the border and name its major storage dams, diversion works and aqueducts in order.
2. Distinguish a storage dam from a diversion dam, and explain why water must be pumped uphill at Lake Havasu but not at Imperial Dam.
3. Explain why Lee's Ferry matters, and that it is both a measuring point and a legal boundary.
4. Read government films from 1955 and 1961 as primary sources, and account for the distance between what they claim and what is true today.

Key vocabulary

snowpack · watershed · basin · acre-foot · storage reservoir · diversion dam · aqueduct · pumping plant · de-silting · Upper Basin · Lower Basin · hydroelectric generation · flood control · delta

Before viewing

- Ask students where the water in their tap comes from. Collect answers before anyone looks it up. Most classes will not get past the reservoir or the treatment plant.
- Put a blank map of the Southwest on the board. Ask a volunteer to draw the Colorado River from memory. Leave the drawing up.

During viewing

Tracking task. Give each student a blank outline of the Southwest. As the module plays, have them mark every place the water is stopped, lifted or taken out, and label each one **S** for storage, **D** for diversion, or **P** for pumped. There are eleven such places named. Compare maps afterward; the disagreements are the lesson.

Discussion questions

Checking comprehension

1. Where does roughly 90 percent of the river's water come from?
2. Name the two reservoirs that regulate the system, and the dam that created each.
3. What happens to the water at Lake Havasu that does not happen anywhere upstream of it?
4. What leaves the river at Imperial Dam, and where does it go?
5. What was the original purpose of Hoover Dam, according to the module?

Thinking it through

6. The narration says that at Lake Havasu “gravity gives out.” What does that mean, and what does it cost to overcome? Consider that the Whitsett plant lifts water 291 feet, every day, without stopping.
7. Lee's Ferry is described as a place where “nothing much is there.” Why would anyone choose an empty place as the point that divides a river between seven states?

8. The module says that as Lake Powell falls, Glen Canyon Dam's eight generators produce less power. Explain why, and name one group of people affected by it who do not use the river's water at all.
9. Pat Mulroy says Nevada is “in a much more comfortable position should things go awry” because its intake sits above the dam. What is she describing, and what does it suggest about how states have prepared?

Reading the archival films as primary sources

Two United States Bureau of Reclamation films appear in this module: *The Story of Hoover Dam* (1955) and *Operation Glen Canyon* (1961), made while the dam was under construction.

10. *Operation Glen Canyon* opens, “The Colorado flows to the sea.” The line just before it states that the river has not reliably reached the sea in more than fifty years. Was the 1961 film wrong when it was made? What changed, and when?
11. *Operation Glen Canyon* says the river is “stained with the soil of five states.” The basin covers seven. What might account for the difference, and how would you check?
12. *The Story of Hoover Dam* says that Colorado River waters “that once destroyed man and his property now serve him.” Identify the point of view in that sentence. Who made this film, and what were they asking audiences to believe?
13. Both archival films were made by the same federal agency, six years apart. Compare how each one talks about the river. What does the difference suggest about what the Bureau of Reclamation wanted audiences to understand at each moment?

Taking a position

14. The river supplies 90 percent of southern Nevada's water, about a third of southern California's, and 60 percent of Arizona's. If the supply shrinks, who should take the reduction first, and on what principle? Defend your answer with evidence from the module.
15. A dry riverbed below Morelos Dam is the result of the system working exactly as designed. Is that a failure? Argue either side.

Written extension

- **Explanatory (WHST.11-12.2).** In 500 words, explain to a reader who has never heard of it how water gets from a snowbank in Wyoming to a lettuce field in the Imperial Valley. Name every structure it passes.
- **Source analysis (RH.11-12.1).** In 400 words, compare the archival Bureau of Reclamation footage with the module's own narration. What does each one want you to feel about the river, and how can you tell?

Suggested 50-minute period

Before viewing, 5 min · Screening, 8 min · Comprehension questions, 10 min · Primary-source discussion, 15 min · Map comparison and wrap, 12 min

Teacher notes

- **The eleven places** in the tracking task: Glen Canyon Dam (S), Hoover Dam (S), Whitsett plant at Lake Havasu (P), the Central Arizona lift at Lake Havasu (P), Imperial Dam (D), the All-American Canal (D), the Coachella Branch (D), the Gila Gravity Main (D), Morelos Dam (D), Lake Powell (S) and Lake Mead (S). Students who count differently should be asked to defend their count.
- **On the storage figure.** Pat Mulroy's “almost 60 million acre-feet” reflects the original design capacities of Lake Mead and Lake Powell. Current published figures are lower, because decades of sediment and revised surveys have reduced both. A student who finds a different number online has not caught an error; they have found a good question about how reservoirs age.
- **On “five states.”** There is no settled answer, which is why it makes a good question. The basin drains seven states. Students should be pushed toward checking rather than guessing.
- **Lee's Ferry** is the dividing point set by the Colorado River Compact of 1922. The law itself is the subject of a separate module; here it is enough that students understand the place is a measuring station.

Standards alignment

Standard	Focus	How this module addresses it
EP&C Principle I	People Depend on Natural Systems	The module traces a single natural system supplying water to three states, two countries and 1.25 million irrigated acres.
EP&C Principle II	People Influence Natural Systems	Dams, pumping plants and diversion works alter the river's flow; the dry riverbed below Morelos is the consequence made visible.
EP&C Principle IV	No Permanent Boundaries Prevent Matter From Flowing Between Systems	The Colorado River Aqueduct and the Central Arizona canal move water out of the watershed entirely, into cities in other basins.
NGSS HS-ESS3-1	Earth and Human Activity	Students explain how the availability and location of a natural resource has shaped where and how people live in the Southwest.
NGSS HS-ESS2-5	Earth's Systems: properties of water	Sediment transport, the Grand Canyon, and the de-silting works at Imperial Dam show water acting on Earth materials and engineers responding to it.
NGSS HS-ESS2-2	Feedbacks among Earth systems	A change at one point in the system (storage at Glen Canyon and Hoover) produces effects hundreds of miles downstream, including at the delta.
CCSS RST.11-12.7	Integrate information in diverse formats	Students integrate narration, maps, archival film and expert interview to answer a question no single source answers alone.
CCSS RH.11-12.1	Cite evidence, attending to date and origin	The 1955 and 1961 Bureau of Reclamation sequences are examined as primary sources shaped by their moment and the agency that made them.
CCSS SL.11-12.1	Collaborative discussion	The discussion questions are built for small-group and whole-class use.
CCSS WHST.11-12.2	Informative and explanatory writing	The written extension asks students to explain the system in their own words, using evidence from the module.

Alignment is offered as a starting point and is open to revision by curriculum specialists.

Source film: *The Green Desert*, broadcast nationally on PBS, spring 2025. Archival sequences courtesy of the United States Bureau of Reclamation: *The Story of Hoover Dam* (1955) and *Operation Glen Canyon* (1961). All educational rights retained by the producer.

Leo Zahn · Mirage Films, a division of Picture Palace, Inc. · Rancho Mirage, California
leo@miragefilms.tv · (760) 834-8203 · miragefilms.tv