Conservation Choices

Students confront a variety of water conservation dilemmas and choose courses of action to deal with them. In the process, they face ethical, financial, and practical issues.

Grade Level
Middle

Time Frame
Approximately 50 minutes

Learning Objectives	Vocabulary	Science TEKS	Materials
Students will: • Evaluate the merits of various responses to water conservation dilemmas • Discuss and examine their own values/priorities when it comes to water conservation	*Conservation, Drought, Dilemma, Values, Xeriscape, convenient*	6.7(A),(B) 7.8(C)	Conservation Choice Cards, (1 set per group)

Background
A dilemma is a problematic situation that requires a person to choose from two or more alternatives, each of which can produced desirable or undesirable effects. Making water conservation choices can create dilemmas, with conflicts developing between what one wants to do versus what one believes should be done. For example, taking a long, hot shower is relaxing, but a short, warm shower – though less comforting – conserves resources.

The purpose of this lesson is to enable students to full understand and apply water conservation methods. Students will understand that they are stewards of our water system and act responsibly for future water users.

People use various strategies to determine a course of action when confronted with a dilemma. These range from flipping a coin to conducting extensive research. One method of decision making consists of listing the alternatives, identifying the pros and cons for each and projecting possible outcomes. Factors to consider include costs (monetary and environmental), time, energy, citizen who will be directly affected, personal values, etc. Emotions and instincts also influence which alternative is chosen.

In confronting dilemmas, considering options, and finally selecting a course of action, individuals within the group may come into conflict. Why?

Finding, proposing, and implement alternatives requires an understanding of values. When this understanding is lacking, attempts to resolve the dilemma often meet with resistance.

5E Instructional Model

Engage

1. In confronting dilemmas, considering options, and finally selecting a course of action, individuals within a group may come into conflict. Ask students why.
    a. Finding, proposing and implementing alternatives requires an understanding of values. When this understanding is lacking, attempts to resolve the dilemma often meets with resistance.
2. *What is a Dilemma?*

    - Allow students to brainstorm different types of dilemmas.
    - Then explain them what dilemma is: a situation in which a difficult choice has to be made between two or more alternatives, especially equally undesirable ones.
        - *Sample scenario: You and your friends are playing baseball one afternoon. One of you hits a long fly ball that breaks a garage window in a nearby home. Most of the groups wants to run home and escape the consequences of the act, but several of you think it would be best to confess and deal with the mess.*

Explore

3. Split the class into small groups of four to six students and hand out one set of *Conservation Choice Cards* to each group. Pile the cards face down in the middle of the night.
4. One at a time, students pick a card. They should read the dilemma silently and take a minute to think through the situatioon and their response.
    a. Tell them to be realistic about what they would do, even if they know it might now be the most admirable response.
5. When time is up, students should read the dilemma and the list of choices out loud, then explain which choice they made, briefly defending their course of action.
6. The other students in the group should score the individual responses on a scale of 1-10, with one being complete agreement with the response and ten being complete disagreement.
    a. Total the group scores for each situation. The lower the total, the greater the level of group consensus on the chosen course of action.
7. Continue until all students have had a turn.

Elaborate

8. Have each group decide which dilemma was their most difficult or controversial one.
9. Read it aloud to the class and allow a brief discussion of the choices and the problems they bring up.
10. Ask students if the exercise heightened their awareness of conservation dilemmas that face us in everyday life.

Evaluate

11. Do they think they'll approach these choices differently as a result of this exercise?

12. Have student groups make up new sets of Conservation Choice Cards, swap them and repeat lesson with new cards.
13. What are some ways students can help conserve water?
    - Wash your cars at a commercial carwash that handles waste water properly. Do not wash your car at home on the driveway or other paved surfaces. Waste water from washing your car may contain oil, grease, road grime, and detergents.
    - Don't pour anything down a storm drain.
    - Use fertilizers and pesticides according to the directions. Do not over apply and do not apply to paved areas.
    - Follow the watering schedule and check the sprinklers often and adjust so only the lawn is watered and not the sidewalk or street.
    - Turn the water off when you shampoo your hair, then turn it back on to rinse.
    - Turn the water off when brushing your teeth.
    - Ask students to give examples of *pollution* to *groundwater*.
    - Use mulch around plants to reduce evaporation.
    - Take five minute showers.
    - Throw trash in a trash can and do not flush it down the toilet.
    - Run the washing machine or dishwasher only when the loads are full.
    - If washing by hand, don't let the water run while washing and rinsing. Fill one sink with wash water and one with rinse water.
    - Solicit other ideas from the students.

Useful websites
EPA Water Facts sheet: www.epa.gov/environmental-topics/water-topics
El Paso Water Conservation: www.epwater.org/conservation
World Water Council: www.worldwatercouncil.org/en

Video

Why Care About Water? www.youtube.com/watch?v=Fvkzjt3b-dU National Geographic
EPA WaterSense for Kids: www.epa.gov/watersense/watersense-kids

1. a group of your friends have invited you to join them on a shopping trip. You want to wear your favorite pants, but they are dirty. You have time to wash and dry them, but there is no other dirty laundry to make up a load.

You could:

A. Throw them in alone and wash them on the small load setting

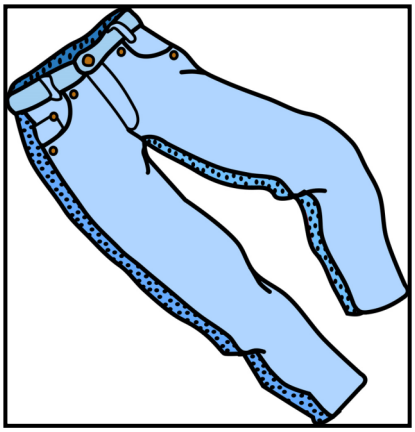
B. See if you can scrounge up sheets, towels or other dirty laundry to make at least a small load.

C. Decide you can do without your favorite pants, even if you won't fit in with the group.

D. Decline the invitation.

E. Put your pants on dirty and wear them anyway

F. Other.



Conservation choice cards

2. An older friend of your drives a really nice car and sometimes invites you along for a ride. He is a fanatic about keeping the car spotlessly clean and washes it at least once a week. Every time he washes the car, he leaves the hose running thought the entire process.

You could:

A. Point out the wastefulness of his habit and hope he takes the hint.

B. Do some simple math to illustrate how much water he wastes every month and share the results

C. Figure it's his business and leave it at that

D. Bing up the point that he'll save money on the water bill by shutting off the hose

E. Decide that you don't want to risk losing his friendship (*and the rides) and keep quiet

F. Other.

3. Your family has just bought a home in subdivision. Part of the yard is not landscaped, and the developer has suggested putting in sod and grass to extend the lawn. Your family is discussing options at dinner one night.

Which option would you advocate:

A. Go with the developers suggestion, despite the need for maintenance and extra watering's

B. Investigate more adaptable grasses that might be more expensive initially, but wouldn't need much water.

C. Choose to use ground cover instead of grass, through, by doing so , you remove the part of the property from being a good play/ activity area

D. Organize a neighborhood educational campaign to raise consciousness about landscaping and water use

E. Stay out of the discussion because it's your parents'' decision

F. other

Conservation choice cards

4. Your family has inherited a farm from an uncle. It has several fields that grow alfalfa and wheat under flood irrigation. Before he died, your uncle was considering investing capital to install a more efficient irrigation system. The funds to make that transition are part of his estate, but now you have to decide whether to go through with the plan or not.

You could:

A. Take the money and invest it in a college fund for the kids

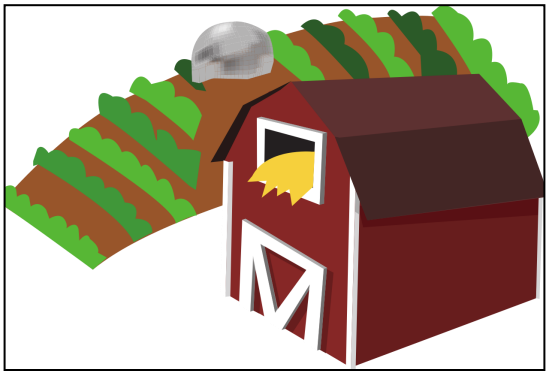
B. go ahead with your uncles plans to develop more efficient irrigation

C. Stop irrigating altogether and let the farm return to a more natural, wild state.

D. Keep using flood irrigation and save the money for a rainy day.

E. Sell the farm with the stipulation that the new owners install more efficient irrigation systems.

F. Other.



5. On your way home from school on a hot June afternoon, you come across a group of kids playing in water spurting from a fire hydrant that they found a way to turn on. You know that this wastes a tremendous amount of water and that the city water supply has been taxed n recent years, but it is awfully hot and the kids are having great time.

You could:

A. Keep walking home an d forget about it

B. Go home and report the incident to the fire department

C. Join in the fun

D. Try to talk to the kids and convince them to turn the water off again

E. other

Conservation choice cards

6. In your family's new apartment, you notice that the shower runs out of hot water after one long shower or two short ones. You are often the third person to take a shower and you're getting tired of the cold water treatment.

You could:

A. Report this fact to the landlord and ask if the hot water heater is adequate.

B. Lobby for a strict three-minute limit on showers.

C. Investigate the type of showerhead fixture you have and see if a low-flow model would help solve the problem.

D. Figure cold water showers are good for you and get used to it.

E. Other.

7. You are helping your older brother change the oil in his car. Suddenly he hands you the pan of dirty oil and tells you to dump it down the storm drain. You hesitate, but he tells you to hurry up because the two of you are going to anew movie that you have been looking forward to all week.

You could:

A. Dump the oil down the storm drain because you don't want to argue with your brother.

B. Quickly explain to your brother that everything from the storm drain flows into the nearby river. You tell him that you can take responsibility for the oil by pouring it into a can, closing it with a lid, and taking it to the proper disposal center.

C. Sneak around the side of the house and hide the open pan of oil in the bushes. "Out of sight, out of mind, " you always say.

D. Pour the oil down the drain of the utility sink in your mom's laundry room.

E. Other

Conservation choice cards

8. During a severe regional drought, you go to a restaurant and are served a glass of water, even though you didn't ask for it.

You could:

A. Make a point of explaining to the waitress the importance of conserving water.

B. Complain to the manager.

C. Leave the glass untouched as a subtle symbol of your disappointment.

D. Figure one glass of water is not a big deal and ignore it.

E. Leave a note on the table.

F. Design a brochure or flyer to distribute to restaurants about not providing water unless patrons ask for it.

G. Other.

9. A drought has plagued your region for months, and your town is facing severe restrictions.

You would advocate:

A. Restricting each household to 50 gallons/person/day.

B. Banning water use for swimming pools, lawn sprinklers, and car washes.

C. Instituting strict guidelines for yard sprinklers, restaurants, industry, golf courses and other major water users.

D. Call for a long term water use plan, that would address everything from landscaping practices to agriculture irrigation

E. Other

Conservation choice cards

10. Your school has announced a contest for the most practical water conservation idea, wit a $50 prize.

You would advocate:

A. Replacing sprinklers with drip irrigation systems.

B. Installing low-volume flush toilets in place of high volume models.

C. Having all faucets spring loaded so they'll turn themselves off

D. Banning water fountains

E. Conducting a school wide audit to identify and fix water leaks

F. Other.