Water Wonders

Activity:

- Survival: Quick Draw
- All About Water
- Journey of a Water Droplet
- What's a Watershed?
- Wholly Habitat

Description:

In this unit, students will discover the importance of the element water. Additionally, students will travel through the water cycle and marvel about watersheds. The activities will introduce new vocabulary and concepts, and take it from an abstract to a concrete understanding. Students will end the unit creating their own environmental action and become stewards of the land.

All activities include reading, writing and/or speaking elements for all students, including English Language Learners, to deepen their English language acquisition.

Students will create their own journals for reference and as a personal graphic organizer. Journals will be turned in for evaluation after completing all activities and will be graded on the rubric found on page 22. Daily participation will be evaluated on the rubric found on page 23.

Teacher's Notes

Before teaching these activities, reference the CCSS at the end of this Unit plan. This way, you can guide the students into mastery of the standards, focusing specifically on your students' needs. Guiding questions can be modified and scaffolded to previous learnings. Depending on the preceding and following units, other standards could be addressed. Also, language standards can be threaded throughout these activities.

Activity #1

Survival: Quick Draw

Estimated time: 20 mins

Description

This quick game is to get students excited and learn about human survival. The game introduces the five basic survival needs of humans, including water.

Objectives

1. Students will be able to list the five basic survival needs of humans.
2. Students will create (or add to) a journal. This journal will be used throughout the unit.

Materials

- A fun, energetic attitude
- Students' journals

Class Discussion

Before the activity, ask with the students what we need for survival. Record their answers on the board. As they respond, narrow the focus to our five basic survival needs (oxygen, water, food, shelter, sleep...add in 'community' if you're currently working on teamwork).

Action

1. Have students line up shoulder to shoulder (go outside if there isn't enough space in the classroom).
2. Together, review the five basic survival needs.
3. Create a symbol with the body, or charade, for each human need. For example, "shelter" could have the hands over head, fingertips touching at the top, creating a house like shelter.

4. Explain the rules: The students will turn their backs to the teacher, who will also turn around so they are back-to-back. The teacher will shout "Quick Draw" upon which, everyone will spin around, face the center of the two lines and act out one of the human needs. Students displaying the same symbol as the teacher will come join the teacher's line. Remember: No Cheating! Once a student turns around and display their symbol, they cannot change.
   For the next rounds, the teacher will choose a symbol for all the students on her side to

do in tandem (don't forget to keep it a secret from the other team). The goal is for the teacher to collect all the students to his or her line.

5. Play the game! And repeat as desired.

Culturally Responsive Teaching

Engage more of your students by having them teach the class these survival needs in their home language.

Wrap-up

After playing a few rounds of the game, bring the students back to their desks and have them journal. Prompt them to write down all five (or six) human survival needs and draw a picture that represents each one. Allow time for students to discuss their experience and/or share their drawings.

Evaluation

- Teacher will walk around the room and observe journaling to see if students can express each need through drawing.
- Evaluate students' participation with the Daily Participation Rubric, see page 23.
- Journals will be collected at the end of the activity to evaluate understanding of all activities.

Digging Deeper

This activity is meant to be the 'hook'. After completing the Water Wonders Unit, the teacher could continue with activity on the other survival needs. The following activities are to support students' understanding of the essential element water.

Activity #2

All About Water

Video from El Dorado Ag in the Classroom Virtual Field Trip Video Series
Estimated time: 1 hour

Description

In this short video, students will learn all about water. Following the video, students will discuss their findings and complete a Word Frames activity.

Objectives

1. Students will be able to explain the importance of water.
2. Students will identify key vocabulary words related to water, the water cycle and agriculture.
3. Students will be able to determine the main ideas and supporting details of the information presented in the video.

Materials

- Flip board paper for K/W/L chart, or preferred paper/whiteboard/smartboard
- Sticky notes in 3 different colors, enough for each student to have 1 of each color
- El Dorado Ag in the Classroom video "Water" found at http://agintheclass-edc.org/programs-resources/video-series/ or https://vimeo.com/137991439
- Video Projector/smartboard – a way to watch the video
- Word Frames handout, see pages 6-7
- Video script for teacher's reference and modification ideas, see pages 8-9
- Students' journals

Class Discussion

Before the activity begins, start a K/W/L chart with the students. Pass around one color sticky note and have each student write down one thing they already know about water. Then pass around a second colored sticky note and have the students write one thing they are wondering about, and would like to know, about water. When they are finished, they can place their sticky note under the correct sections on the K/W/L chart.

Action

1. Prompt the students on what to watch and listen for in the video. Remind them that you will watch the video at least two times (possibly three or more times, as needed).
2. Read through the Word Frames handout. Answer any questions.
3. Watch the "Water" video from El Dorado County Ag in the Classroom. Have students watch carefully, without taking notes.
4. Pass out the Word Frames handout. Have the students work in pairs or table groups to complete as much of the handout as possible. Give approximately 15 minutes to work.
5. Watch the video a second time, having students check their work and take notes on any unfinished answers.
6. Give the students 10 minutes to complete the rest of their handout with their group.
7. If needed, watch the video a third time.
8. Review vocabulary words found on page 7. Ask students to describe them in their own words and relate them to something that they have experienced.
9. Have students write in their journals a summary of, or to paraphrase, the video. Encourage them to include one thing they have learned during this activity and one thing they are still confused about. Attach Word Frames handout to journals.

Wrap-up

Debrief the activity using the "What? So What? Now What?" model. Ask the students to explain to the class: what have we done, what does it mean, and what can we do with this information. They can also ask questions or share their answers, ideas, and stories. Encourage discussion around ways to save water during times of drought.

The final section on the K/W/L chart will be filled out at the end of the entire unit.

Evaluation

- Students will be evaluated on participation during the video viewing, group work and classroom share. See grading rubric on page 23.
- Students will be evaluated on their journals at the end of the whole unit.

Digging Deeper

Ask students to go home and ask their parents/guardians if they get water from a well or the EID. How much does it cost to have clean drinking water in their house?

Water - Word Frames Activity

Water. It is the essential element for life _____. Without water there would be no plants, no animals. The Earth would be nothing but _____.

But fortunately, the Earth does have water and the way humans use it has shaped the course of our civilization.

Its chemical formula is _____, which means it's made up of two molecules of hydrogen and one molecule of oxygen.

Of all the water on Earth, 97 percent is _____ and not useable for drinking or crops. Of the 3 percent of freshwater, two thirds is frozen in _____ and glaciers. The remaining one third is what's available for us to use.

In our own bodies, the water we drink is used to _____ _____. In fact, on average, 65 percent of the human body is made up of water.

So where does our water come from? Well, much of it comes from precipitation in the form of _____. That precipitation then flows through natural waterways such as _____ until it reaches a lake or the ocean.

Some water, however, seeps down through the surface and into large underground bodies of water know as aquifers. This ground water is what we tap into when we dig a well. Some plants and trees with deep root systems can access _____ and survive on that alone.

Agriculture uses a process of _____ water called irrigation and it's the foundation of growing food crops around the world. The way we water crops has changed a lot in the many thousands of years since humans first learned to farm.

In El Dorado County, ditches and canals were first dug during the _____ so miners could use water for the gold mining process. For years after, those same ditches were used to water the various orchards and gardens that sprung up around the county. Today, many get their water from a government agency called EID:_____ _____. The EID takes water from reservoirs, cleans it and then pumps it all around the county. EL Dorado County _____ are irrigated with both well water and water from the EID.

Sometimes there is far less _____ than usual. When that happens for _____ we call that a drought. Weather data and tree

rings show that drought is a normal part of California's climate pattern. There have been _____ droughts in the last 100 years in California. But 2014 was the _____.

Eventually, during drought, _____, _____, and _____ _____ dissipates. Since California produces much of the Nation's food and since food needs water to grow, drought here is a big problem. When water is more expensive for farmers, the food they grow is more expensive when you buy it in the store. Often during times in a drought, less acres are planted and many farm workers lose their jobs.

Even though we cannot control the _____, that doesn't mean we are helpless. We can all help with the drought by conserving water. That means paying attention to where and when we use water and being careful not to waste any.

It is everybody's responsibility to conserve water and there are many simple ways to do it. So lets help our planet and each other by protecting this important _____.

Key Vocabulary Words:

Precipitation - noun - rain, snow, sleet, or hail that falls to the ground.

Waterway - noun - a river, canal, or other route for travel by water.

Aquifer - noun - a body of permeable rock that can contain or transmit groundwater.

Groundwater - noun - water held underground in the soil or in pores and crevices in rock.

Agriculture - noun - the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.

Irrigate - verb- supply water to (land or crops) to help growth, typically by means of channels.

Miners - noun - a person who works in a mine. Specifically in this video: gold miners.

Drought - noun - a prolonged period of abnormally low rainfall; a shortage of water resulting from this.

Dissipate - verb - to cause to break up and disappear

"Water"

Full video script for teacher's reference

Water. It is the essential element for life on this planet. Without water there would be no plants, no animals. The Earth would be nothing but an expanse of rock and dust.

But fortunately, the Earth does have water and the way humans use it has shaped the course of our civilization.

Its chemical formula is H 2 O, which means it's made up of two molecules of hydrogen and one molecule of oxygen.

Of all the water on Earth, 97 percent is salty ocean water and not useable for drinking or crops. Of the 3 percent of freshwater, two thirds is frozen in polar ice caps and glaciers. The remaining one third is what's available for us to use.

In our own bodies, the water we drink is used to deliver oxygen to cells, regulate temperature, digest food, flush waste and to grow and repair cells. In fact, on average, 65 percent of the human body is made up of water.

So where does our water come from? Well, much of it comes from precipitation in the form of rain and snow. That precipitation then flows through natural waterways such as streams and rivers until it reaches a lake or the ocean.

Some water, however, seeps down through the surface and into large underground bodies of water know as aquifers. This ground water is what we tap into when we dig a well. Some plants and trees with deep root systems can access groundwater and survive on that alone.

Agriculture uses a process of distributing and using water called irrigation and it's the foundation of growing food crops around the world. The way we water crops has changed a lot in the many thousands of years since humans first learned to farm.

In El Dorado County, ditches and canals were first dug during the gold rush so miners could use water for the gold mining process. For years after, those same ditches were used to water the various orchards and gardens that sprung up around the county. Today, many get their water from a government agency called EID: the El Dorado Irrigation District. The EID takes water from reservoirs, cleans it and then pumps it all around the

county. EL Dorado County speciality crops are irrigated with both well water and water from the EID.

Sometimes there is far less snow and rain than usual. When that happens for an extended period of time we call that a drought. Weather data and tree rings show that drought is a normal part of California's climate pattern. There have been 13 droughts in the last 100 years in California. But 2014 was the worst.

Eventually, during drought, rivers stop flowing, lakes dry up and ground water dissipates. Since California produces much of the Nation's food and since food needs water to grow, drought here is a big problem. When water is more expensive for farmers, the food they grow is more expensive when you buy it in the store. Often during times in a drought, less acres are planted and many farm workers lose their jobs.

Even though we cannot control the climate, that doesn't mean we are helpless. We can all help with the drought by conserving water. That means paying attention to where and when we use water and being careful not to waste any.

It is everybody's responsibility to conserve water and there are many simple ways to do it. So lets help our planet and each other by protecting this important resource.

Responsive Teaching

Modify Word Frames handout as needed.

- Shorten the script or add in more of the missing information for beginning readers, ELLs or lower grades.
- Add important vocabulary words to the board for reference.
- Take out more of the script for higher levels.
- Change the Word Frames completely to be independent of the script all together. This will activate more critical thinking skills.
- The teacher can check for understanding by observing and interpreting student reactions (active interest, boredom). Adjust instruction as needed and watch again as necessary.

Activity #3

Journey of a Water Droplet

Adapted from Project Learning Tree

Estimated time 1 hour

Description

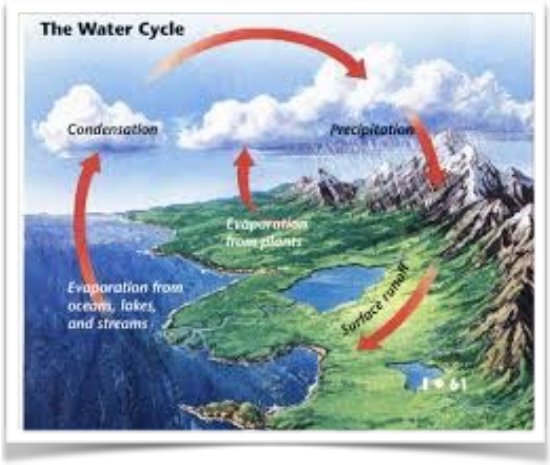
Students will learn about and simulate the path that water takes in the water cycle.

Objectives

1. Students will be able to completely explain the water cycle.
2. Students will know how to identify the important components in the water cycle .
3. Students will be able to model the cycle of water, both physically and in drawing form.

Materials

- Printed and cut strips, from pages 12-13
- Seven envelopes
- Labels for each station, see page 14
- Score Cards, see page 15
- Stopwatch or watch
- Students' journals



Class Discussion

In this activity, students will be physically modeling the water cycle. First, reflect on previous learnings. Discussion prompts: What are the five components humans need for survival? Why do we need water? What is water's chemical formula? What do we know about water?

Then, have students think/pair/share with the prompts: What is a cycle? What needs water to live? If every living thing needs so much water, how come we still have water on Earth? When a puddle dries up, where does the water go? Where does rain and snow come from?

After the students share, take the time to have students ask questions. Leave some of them unanswered so there is space for discovery. Students can also share about their Digging Deeper findings.

Action

1. On the board, draw a sketch of the water cycle. Cover key vocabulary terms: evaporation, groundwater, and condensation.
2. Describe the water cycle again, but this time from the perspective of a single water droplet. Excite students by revealing to them that they will be performing a game simulating the different paths of the water droplets.
3. Divide students into seven groups and have each group go to a labeled station.
4. Have each student pick a strip from the envelope, read it and and record on their score card. After, students return their strip to the envelope. Finally, teacher calls out "CYCLE" and students move to their next station as determined by their strip.
5. Repeat step 4 until each student has passed through the cloud station a few times.
6. Have students return to their desks. In their journals, write a short story from the point of view of their water droplet's journey. Remind students to use relative pronouns, relative adverbs and progressive verb tenses. Students should choose words and phrases to convey ideas precisely and choose punctuation for effect.

Responsive Teaching

The interactive nature of this activity lends itself easily to responsive teaching. Additionally, the activity creates space for asking questions. Inquiry-based learning helps lead the teacher to areas of interest and need for the students. If students are still struggling, make the journey of the water droplets a paired journey.

Wrap-up

Ask students to share all the different ways they got to the cloud. To help the students visualize this, write each of the seven stations on the board. Then, draw arrows to from the students' responses to the Cloud. Repeat with all the other stations.

Have students think/pair/share again, with some of the following prompts: What are some similarities and differences of the individual water droplet's paths? Were there any stations that were visited more frequently during the simulation, and why? What makes water move through the cycle?

Finally, students will journal about one thing they have learned during this activity and one thing they are still confused about. Affix their "score cards" into their journals.

Evaluation

- Students will be evaluated on participation of game and class discussion.

- Students will be evaluated on their journals at the end of the unit.

Digging Deeper

Ask students to go home, and when they brush their teeth that night…wonder where the water comes from, and how does it come out of the faucet?

Water Droplets' Paths

Station 1 - Cloud	Station 2 - Mountain
You fall as rain onto a mountain. Go to Mountain.	You evaporate into the air. Go to Cloud
You fall as snow onto a mountain. Go to a Mountain.	You soak into the ground and become part of the groundwater. Go to Groundwater.
You fall as rain onto a stream. Go to Stream.	You soak into the ground and get absorbed by plant's roots. Go to Plant.
You fall as rain onto an ocean. Go to Ocean.	You roll downhill and become part to a stream. Go to a Stream
You fall as snow onto an ocean. Go to Ocean.	You roll downhill and become part of a stream. Go to Stream
You fall as rain onto a parking lot. Go to Stream.	You get frozen in ice and stay there. Say at Mountain.
Station 3 - Ocean	**Station 4 - Stream**
You are one of countless water molecules in an ocean and you stay there. Stay at Ocean.	You evaporate into the air. Go to Cloud.
You are one of countless water molecules in an ocean and you stay there. Stay at Ocean.	You evaporate into the air. Go to Cloud.
You evaporate into the air. Go to Cloud.	An animal comes to the stream and licks you up. Go to Animal
You evaporate into the air. Go to Cloud.	You continue rolling downhill and become part of an ocean. Go to Ocean.
A kelp plant takes you in, releases you through it's leaf and transpires you into the air. Go to Cloud.	You continue rolling downhill and become part of an ocean. Go to Ocean.
Go to Plant, but do not draw a card. Then go directly to Cloud.	

Station 5 - Groundwater	Station 6 - Animal
You move slowly underground and eventually flow into an ocean. Go to Ocean.	After using you to process food, the animal urinates and you end up on the ground. Go to Mountain.
You move slowly underground and eventually flow into an ocean. Go to Ocean.	After using you to process food, the animal urinates and you end up on the ground. Go to Mountain.
You move slowly underground between grains of sediment and eventually flow downward into a wetland and from there into a stream. Go to Stream.	You are exhaled from a human's lungs into the air as vapor. Go to Cloud.
You move slowly underground between grains of sediment and eventually flow downward into a wetland and from there into a stream. Go to Stream.	You are exhaled from a human's lungs into the air as vapor. Go to Cloud.
A plant takes you in through its roots. Go to Plant.	A person uses you for brushing his or her teeth. Go to stream.
You are pumped out of the ground from a well to irrigate a farm. Go to Plant.	

Station 7 - Plant
The plant transpires you through its leaves into the air as vapor. Go to Cloud.
The plant transpires you through its leaves into the air as vapor. Go to Cloud.
The plant transpires you through its leaves into the air as vapor. Go to Cloud.
The plant uses you to grow. Stay at plant.
The plant stores you in its edible fruit. Go to Animal.

PLANT

OCEAN

CLOUD

STREAM

GROUNDWATER

MOUNTAIN

ANIMAL

Water Droplet Score Card

Student's name:

	Station	What's happened?	Destination
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Activity #4

What's a Watershed?

Adapted from National Agriculture in the Classroom

Estimated time 1 hour

Description

Students will create a visual representation of a watershed. Through this, students will know how the actions of everyone - farmers, homeowners, business people, etc. - can impact the water resources. Students discuss actions that they can take to protect our water supply.

Objectives

1. Students will be able to understand the basic geography of a watershed.
2. Students will identify key features in a watershed.
3. Students will know how water flows through the system.
4. Students will learn how people impact the quality of our water.

Materials

- One sheet of paper for each student
- 5 different colors of ***water soluble*** markers for each table group
- One spray bottle filled with water for each table group, or groups can share

Class Discussion

Scaffold learning by reflecting on previous activities in the unit. Ask students to review their journals. Discuss some of their favorite learnings, as well as questions that are still unanswered. Make sure to reflect as a class the five (or six) basic survival needs of humans.

Pass around a sheet of paper for each student. Have them crumple the paper as tight as they would like. Then, have them open the paper up but not all the way. Tell students that this is going to represent a watershed. Based on what they know about water so far, have them look at their paper and think about what a watershed could be. Have them share their thoughts with a partner. As a class, discuss their ideas about watersheds.

Give them the definition of a watershed - A watershed is the area of land where all of the water that falls in it and drains off of it goes into the same place. *Or wait until the activity is complete to define the term, allowing for personal discovery.*

Action

1. Demonstrate with a crumpled and loosely opened piece of paper how the high points of the paper represent mountains, the middle points are hills and the lowest areas are valleys.

2. With one color, mark the tops of the mountains. Discuss the elevation of the town, and its relationship to the mountains and ocean. Here, in El Dorado County, we are in the foothills of the Sierra Nevada mountain range. Do the students know how far it is to go skiing? Or to visit the ocean? Has anyone climbed to the top of a mountain peak in the Sierra Nevada Mountains? Has anyone ever hiked another mountain? What's the highest elevation in the Sierra's?

3. With another color, preferably a shade of blue, mark out some bodies of water. Where would the rivers, creeks and lakes be? In our beautiful area, there are many rivers and lakes. Have the students think about times they have been to visit a fresh water resource. Ask the students to pair up and describe what it looked like in and around their water adventure.

4. With your third color, preferably a different shade of blue, mark around the lowest and outer most areas to represent the ocean. Has anyone visited the ocean before? What lives in the ocean? How did it feel to visit?

5. Reflect again on the basic survival needs of humans. Then, discuss what kind of additional things bring us ease and comfort (big houses, shopping centers, factories, grocery stores, schools, amusement parks, etc). Do we live in a city? What is the biggest and closest city to us? Why is this city important to California? With a fourth color, mark a few areas that represent human settlements. Ask the students how they think these buildings will affect the waterways? Remind students of lawn irrigation and fertilizers, swimming pools and chlorine, sewage, the EID, etc.

6. With the fifth color, mark a few agriculture areas where crops can grow and animals can be raised. What do animals need for survival? What do plants need to grow? How might the animals impact the waterways?

7. If the students are mature enough, and supplies allow, each table can have one water bottle. If students are not ready for this task, the teacher can be in charge of the spraying.
   Lightly spray each paper, which represents rain falling from the clouds. What is happening as the water travels through the system? What are the students observing? Reflect on previous learning; what is the big, fancy word for rainfall? Precipitation.

8. Have students pair up again, and discuss some of the following questions:
   Where did the water flow? Were your human settlements or agriculture areas in danger

of flooding? Are they in danger of not getting enough water? What happened to the low points on the map? What else did you notice?

Responsive Teaching

This activity is interactive and hands on lending itself perfectly to responsive teaching. Additionally, it's inquiry-based which helps lead the teacher to areas of interest and need for the students.

Wrap-up

Open up, or reopen, a discussion on the meaning of a watershed. What is a watershed? How does your map represent a watershed?

Further debrief the activity using the "What? So What? Now What?" model. What did we just do? Why did we do this? Now what do we want to do with this information? If time is running out, have students pair/share.

Students can also share about their pondering on the Digging Deeper question.

Have each student journal about their experience doing this activity. Include one thing they learned and one thing they are still confused about. Also, students need to include one idea about how to keep the waterways cleaner. Students should choose words and phrases to convey ideas precisely and choose punctuation for effect.

Evaluation

- Students will be evaluated on their participation during the activity.
- Students will be evaluated on their journals at the end of the unit.

Digging Deeper

When students go home, have them ask their parent(s)/guardians if they can help them put their idea into action. Can students and their families implement their cleaner waterway idea?

Activity #5

Wholly Habitat

Estimated time 1 hour

Description

Groups will design and draw their own city. Each group will include essential elements for survival in today's world.

Objectives

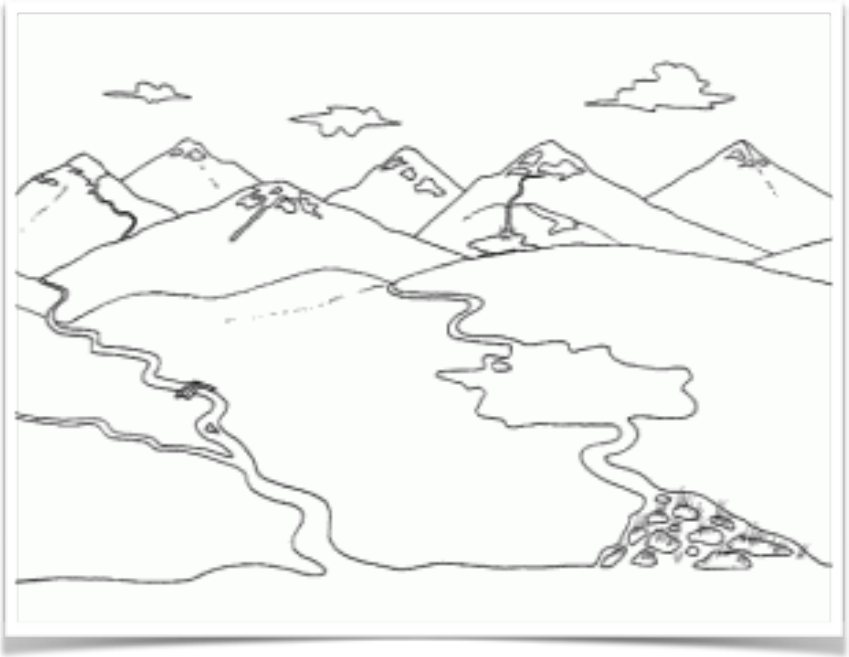
1. Students will understand how everything is interrelated.
2. Students will learn how their actions affect others.
3. Students will identify environmental problems and discuss solutions.
4. Students will complete the Unit, understanding water, water cycles and watersheds.

Materials

- One piece of poster board
- One sharpie, one pencil, one pair of scissors
- Drawing materials for each table group (crayons, markers, colored pencils, etc)
- Tape

Teacher Preparation

On the poster board, with the pencil, lightly draw grid lines creating as many squares as you have student groups. Then, with the sharpie, draw a basic landscape including mountains, hills, water, and trees. Make sure each section has water. Then cut the poster board along your grid lines. The pieces will be put back together, so label inconspicuously if needed.



simple landscape drawing example

Class Discussion

Scaffold learning by reflecting on previous activities in the unit. Ask students to discuss some of their favorite learnings, as well as questions that are still unanswered.

Has anyone been able to put their "clean waterway" idea into action?

Action

1. Get the students excited for the activity, by broadcasting to them that they are about to be mega city planners.
2. Show the class some of the landscape squares. Tell them that all the squares have water, but none of them are the same. (Do not let them in on the secret that these will be joined together at the end).
3. Tell them what needs to be included in their city. They are to design a shelter or dwelling, a food source, a drinkable water source, power source, and septic system. They can also include any additional buildings, man-made necessities (or wants) and/or recreational spaces. What are the things you use daily? What stores or places to do you go frequently? What are your favorite things to do?
4. Divide the students into groups. Have the groups begin discussing what they would like to include in their city. As they start their discussions, pass out the landscape squares. Once the teams are ready, they can begin drawing their city. Give students approximately 30 minutes to plan and draw.
5. When the drawings are complete, have one representative from each group share their drawing. Have them discuss all aspects of their city.
6. After each group has shared, ask for one drawing. Tape it to the board/wall. Ask for the next drawing. Tape it to the correct place in the puzzle. Keep doing this until all the cities are connected.
7. Investigate how each neighbor is affecting the other. Have students share their concerns. Any river dams? Sewage contamination? Air pollution? Can any of these problems be solved?

Responsive Teaching

The teacher can check for understanding by observing and interpreting student reactions (active interest, boredom). Adjust instruction as needed. Spend extra time sharing during the wrap-up to make sure students understand the key points. Reflect/scaffold to previous learnings. Reteach as necessary.

Wrap-up

Debrief the activity using the "What? So What? Now What?" model. What did we just do? Why did we do this? Now what do we want to do with this information?

Have students journal about how this activity made them feel.

Finally, complete the activity with a whole unit debrief. Make sure students feel confident in their understanding of water, its necessity and how we can protect the precious resource. Help students discover the answers to any remaining questions. Then, pass around the final color of sticky notes. Have students write down one thing they learned during the Water Wonders Unit. Place sticky notes on the K/W/L chart under the "L" section. Review the chart with the class.

The last journal entry for the class will be a write up of an "Environmental Action." We just reviewed the unit's learning, so they should be well prepared to dive into this journal entry. If needed, reiterate the interconnection of all things as seen in all the activities. Journal prompt: You have learned a lot about water in this unit, including its preciousness. How can you make sure there will be enough clean water in the future for the survival of plants, animals and humans?

Students must introduce their topic, state an opinion, and explain their intended action. Students should provide reasons for their action, including facts or details. The journal entry shall end with a strong concluding statement. As time allows, have students plan, revise and edit their writing.

Evaluation

- Students will be evaluated on their participation of the city building and class discussion.
- Students will be evaluated on their journals, see rubric on page 22.

Digging Deeper

Connect this unit with other related topics. Visit El Dorado County Ag in the Classroom for a Virtual Field Trip Video Series and additional lesson plans.

http://agintheclass-edc.org/programs-resources/video-series/

Journal Grading Rubric

	Outstanding! 4	Good Work! 3	Learning 2	Novice 1	Score
Content Quality	Entries are detailed and expressed clearly.	Most entries are detailed and show that you are trying to express complex ideas.	Some entries are detailed and use expressive language.	Entries lack details and expression of ideas.	
Critical Thinking	Entries demonstrate analysis, synthesis and evaluation.	Entries go beyond content and include original ideas.	Entries include accurate information but do not include original ideas.	Entries are not accurate or follow the journaling prompts.	
Writing handwriting, spelling punctuation	Handwriting is easy to read. There are minimal spelling and punctuation errors.	Handwriting is clear. There are some spelling and punctuation errors.	Handwriting is readable but not completely clear. There are spelling and punctuation errors.	Handwriting is not your best. There are spelling and punctuation errors.	
Creativity Unique Delivery	Journal design displays thought and care. It is very unique, creative and interesting.	Journal design displays thought and care. It is creative.	Journal design displays some thought. It has a standard outline.	Journal design is not thought out. It does not have any unique features.	

Review the journaling rubric with students before the unit. This will prepare them for your expectations of their journals. Change the rubric as needed to fit your class, students and goals.

Daily Participation Rubric

	Outstanding! 4	Good Work! 3	Learning 2	Novice 1	Score
Listening	Student always listen attentively and follows directions the first time.	Student listens attentively and follows directions.	Student listens sometimes and only follows directions after being asked more than once.	Student fails to listen and rarely follows directions.	
Active in Discussions	Student is active in discussions, sharing original ideas. Student also knows when to listen to others. Student encourages others to share too.	Student is active in discussions. Student encourages other students to participate.	Student sometimes participates in discussions.	Student fails to participate in discussions.	
Group Cooperation	Student displays excellent teamwork. Student fulfills his or her group role during activities.	Student displays teamwork. Student participates in his or her group role during activities.	Student sometimes works well with the team. Student shows little interest in his or her group role.	Students does not participate in group work.	

Use this rubric daily to rate students' participation. If possible, give feedback to students regularly. And, use the information to adapt to your teachings. If a student is lacking interest, find a way to gain it. If the student isn't showing improvement, reflect on what can be done to help them.

Survival: Quick Draw

4th Grade - California Common Core Standards

ELA

4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources

4.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

All About Water

4th Grade - California Common Core Standards

ELA

4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources

4.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

4.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

b. Follow agreed-upon rules for discussions and carry out assigned roles.

c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others

d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

4.SL.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

History and Social Science

4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.

4.4 Students explain how California became an agricultural and industrial power, tracing the transformation of the California economy and its political and cultural development since the 1850s.

Journey of a Water Droplet

4th Grade - California Common Core Standards

ELA

4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources

4.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

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c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others

d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

4.SL.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally

4.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

b. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why).

c. Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb tenses.

4.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

b. Use commas and quotation marks to mark direct speech and quotations from a text.

c. Use a comma before a coordinating conjunction in a compound sentence.

d. Spell grade-appropriate words correctly, consulting references as needed.

4.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

a. Choose words and phrases to convey ideas precisely.

b. Choose punctuation for effect.

c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).

4.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

History and Social Science

4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.

What's a Watershed

4th Grade - California Common Core Standards

ELA

4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources

4.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

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a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

b. Follow agreed-upon rules for discussions and carry out assigned roles.

c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others

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d. Spell grade-appropriate words correctly, consulting references as needed.

4.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

a. Choose words and phrases to convey ideas precisely.

History and Social Science

4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.

4.1.3 Identify the state capital and describe the various regions of California, including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity.

4.4 Students explain how California became an agricultural and industrial power, tracing the transformation of the California economy and its political and cultural development since the 1850s.

4.4.7 Trace the evolution of California's water system into a network of dams, aqueducts, and reservoirs.

Wholly Habitat

4th Grade - California Common Core Standards

ELA

4.W.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
b. Provide reasons that are supported by facts and details.
c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).
d. Provide a concluding statement or section related to the opinion presented.

4.W.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.

4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources.

4.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

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a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
b. Follow agreed-upon rules for discussions and carry out assigned roles.
c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others
d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

4.SL.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

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a. Choose words and phrases to convey ideas precisely.
b. Choose punctuation for effect.
c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).

4.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

History and Social Science

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