



Soil and Water
Conservation Education
Grades 4 – 6

Conservation Across America

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United States Department of Agriculture



Natural Resources Conservation Service



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Dear Teacher:

This workbook was created to help children understand and value our natural resources--soil, water, animals, plants, air and humans. We hope to help raise a generation of children who have learned about the natural world and value and care for all aspects of the environment.

Children retain little of what is only talked about, but a great deal of what is touched, explored, and experienced. Through this tactile experience children will broaden their vocabulary and enhance their problem solving skills. It is the adults' job not to lead, but to facilitate these activities. The adult is there to provide ideas, materials, vocabulary, and safety. The children will provide the imagination, observation and direction.

The material in this book is primarily for students in fourth through sixth grade. The materials may be reproduced in sufficient quantities so that each student can participate in the exercises.

For additional information, call your local NRCS office or visit our website at www.tx.nrcs.usda.gov.

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Soils

Soil Resources

Soil is basic to all life. Soil may be considered a factory where everything is made to feed plants, animals and human beings. Although you can't see them, about one million bacteria, protozoan, algae and fungi live in one (1) gram of soil. These creatures contribute to the ecosystem by refining and improving the soil

Soil Formation

Soil is formed from rock after going through numerous physical and chemical processes over thousands of years. A process called mechanical weathering is produced by temperature and climate changes, the freezing and thawing of water, roots reaching down into cracks, or worms and other burrowing animals break rocks into smaller pieces. This allows the process of chemical weathering--oxidation, hydration and carbonation--to work on the rock, breaking it down. Finally, soil fertility is built by organisms living in the soil.

Soil Properties

Soil has many properties and are classified accordingly. Soil is made up of four distinguishable components--air, water, organic materials, and minerals. The average soils composition is 45% minerals, 25% water, 25% air, and 5% organic matter.

Another soil property is texture. Soil texture is classified by the size of the mineral particles measured in millimeters. A soil's texture affects its stability and susceptibility to erosion and water absorbing and holding capabilities as well as other properties.

Sand	2.0 - 0.05
Silt	0.05 - 0.002
Clay	Less than 0.002 mm (requires a microscope to see)

Soil Horizons

Soils have layers called horizons. The O horizon consists of leaf litter or other organic material lying on the soils surface. Topsoil, the A horizon, usually contains humus and is darker in color than subsoil. The B horizon, or subsoil, is finer in texture than topsoil and lighter in color. Parent material, the C horizon, is the rock from which soil is made. Topsoil is the most fertile and most productive because it contains decayed and decaying plants and animals, and micro-organisms. Most of the soil that erodes away into streams, lakes, and oceans is topsoil. This is why it's so important that we protect our topsoil.

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What to do:

1. Two days before presenting the activity, fill 1 jar about 1/3 full of soil. Add enough water to fill the jar. Shake the mixture thoroughly and set aside to “settle out.”
2. Using the other jar and more soil, repeat the experiment for the benefit of the class. The first jar will illustrate which soil particles settle first. Most of the heavier and larger sand particles will settle in about six hours. The fine clay particles take several days and may stay in suspension indefinitely depending on the chemistry of the solution.

Sample Questions:

- How many layers are there?
- Is there a distinct division of layers?
- Which layers settled out first?

Notes:

- Best effect if you have large amount of sand, but not just sand.
- To make sedimentation work faster add a pinch of alum. (Found in spice section of grocery store)
- Need loose soil, not a “clod.”
- Can use 12 or 20 ounce soda bottles with labels

Materials Needed

- 2 fruit jars
- soil
- magnifying glass

Vocabulary Words to Introduce

organic material
minerals
texture
millimeters
stability
erosion

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What to do:

1. Read “Soil Formation.” Give each student two rocks (same kind) and a sheet of colored paper.
2. Set a 2-minute limit. Tell them to rub the two rocks together over the paper.
3. At the end of the time limit, combine the particles of dust and spread over a large sheet of paper.
4. Discuss the time required to build up a soil layers

More Ideas:

- Have the students pretend they are part of a large rock formation on a mountain. Ask them to write a short story about what happens to them on their way to becoming soil.
- Produce an art object using natural materials from the school site. You will need white glue, white paper, soil from the school site.

Materials Needed

- 2 limestones
- sandstone
- shale or granite
- rock

***Vocabulary Words
to Introduce***

algae
bacteria
carbonation
fungi
hydration
mechanical
weathering
oxidation

The World's Apple

One of the most important natural resources that covers much of the earth's land surface is soil. All living things depend on it as a source of food, either directly or indirectly.

Our food producing land remains the same, yet the world population continues to grow. Consequently, each person's food portion becomes smaller and smaller. It is the responsibility of each generation to use the soil wisely to insure the future. The following demonstration will show how little of the earth's surface is actually used for food production as compared to growing populations.

What to do:

1. Cut the apple into 4 equal parts. Three parts represent the oceans of the world. The fourth part represents the land area.
2. Cut the land section in half lengthwise. Now you have two 1/8th pieces. One section represents land such as deserts, swamps, Antarctic, arctic, and mountain regions. The other 1/8th section represents land where man can live but may not grow food.
3. Slice this 1/8th section crosswise into four equal parts. Three of these 1/32nd sections represent the areas of the world which are too rocky, too wet, too hot or where soils are too poor for production, as well as areas developed by man.
4. Carefully peel the last 1/32nd section. This small bit of peeling represents the soil of our earth on which mankind depends for food production!

Materials Needed

- one large apple
- paring knife

Vocabulary Words to Introduce

deserts
swamps
Antarctic
arctic
mountain regions

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What to do:

1. Divide the class into groups of six.
2. Have each group propose solutions to the problems listed on the activity page.
3. “Give each group an opportunity to present their solutions. Allow time for questions, discussions and debate.
4. Have the students organize the proposed solutions into categories of soil conservation methods.
(Prevents wind erosion, decreases speed of water runoff, covers bare soil)
5. Have students write an essay on the importance of being concerned about soil conservation.

Materials Needed

- Activity page

Vocabulary Words to Introduce

soil conservation
fertilizer
erosion
topsoil
subsoil
weathering

Name _____

Being a Soil Doctor	Matching Exercise Activity Lesson #4
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Read each of the soil problems below. Propose a possible solution to each of the situations.

Problems (Disease)	Solution (Cure)
Farmer Jones has a bare hillside that loses lots of soil during every rainstorm.	
Farmer Smith plants corn in the same field every year for seven years. He notices that he must add expensive fertilizer to keep production high.	
Farmer Silo grazes his cows in the same pasture all year long. What might a soil conservation employee suggest?	
A forest fire destroys the trees and ground cover leaving the animals without food and shelter and the soil exposed to the elements.	
Cindy City's hilly backyard has small gullies which get larger after each rain. The runoff water floods her basement and carries in mud.	

Name _____

Soils Exercise

Matching Activity Lesson #5

Refer to “Soil Information” page. Let’s see what you have learned!!

1. _____ Topsoil
 2. _____ Subsoil
 3. _____ Weathering
 4. _____ Erosion
 5. _____ Texture
 6. _____ Sand
 7. _____ Clay
 8. _____ 25%
 9. _____ 45%
- a. The amount of water and air in soil.
 - b. The removal of soil by wind and water
 - c. The amount of minerals in soil
 - d. Largest soil particles
 - e. The B horizon
 - f. Smallest soil particles
 - g. The A horizon
 - h. Determined by the amount of sand, silt and clay in the the soil
 - i. The breaking up of rock by the elements.

Answers: 1. G; 2. E; 3. I; 4. B; 5. H; 6. D; 7. F;

8. A; 9. C

What to do:

1. Have students complete the student page.
2. Discuss the activity by having students draw other “soil chains” on the chalkboard.
3. Have students list ways to increase society’s awareness of the importance of soil conservation.

More Ideas:

1. Research the production of paper, furniture, clothing, of medicine. Do these products require different kinds of soils?
2. Make a mobile of the “soil chains” using pictures cut out of magazines/catalogs and glued onto cardboard and hung from a small branch.

Materials Needed

Student’s Page

People use soil in their lives every day, directly and indirectly. Unscramble the letters at the end of each "soil chain" to find something we use often. Find the word in the puzzle.

A. Soiled Dinner

soil-----> grass----->cow----->*kilm*
 -----> chicken -----> *eirdf hkienc*
 -----> potatoes -----> *aeshdm ooeslptta*
 -----> corn -----> *nroc lio*
 -----> wheat ----->flour-----> *iiucssbt*
 -----> lettuce -----> *sseodt ldsaa*
 -----> peas -----> *aesp*

B. Soiled Clothing

soil-----> cotton -----> *eeaurrdw*
 -----> *irtsh*
 -----> *aensj*
 ---->grass-->sheep-->wool-->*sscko*

C. Soiled House

soil--> pine tree ---> *sked*
 --->pulp ---> *ppear*
 acorn --->oak--->*raich*
 ---> *bed*
 cherry pit--->tree--->*sserrd*
 cedar -----> *stech*
 -----> *dgiins*
 cotton -----> *lbtelchtoa*
 -----> *swoelt*
 grains--->pig--->lard---->*aosp*

Find the words you unscrambled in the above activity!

Y	O	T	C	O	R	M	D	R	E	S	S	E	R	L
T	O	W	E	L	S	A	E	G	S	U	L	Y	R	P
Y	D	M	S	T	O	S	S	E	D	S	A	L	A	D
F	R	I	E	D	C	H	I	C	K	E	N	E	C	S
U	N	L	I	M	Y	E	H	O	S	R	O	S	Y	I
N	T	K	A	L	E	D	C	R	J	H	E	S	O	D
D	P	A	P	E	R	P	I	N	E	R	E	L	T	I
E	E	H	B	E	D	O	B	O	A	E	O	L	L	N
R	T	S	N	L	R	T	E	I	N	M	G	I	F	G
W	H	A	K	I	E	A	U	L	S	O	C	K	S	Z
E	P	I	A	L	O	T	G	S	O	C	M	O	W	I
A	J	H	B	O	B	O	A	O	A	K	U	V	O	M
R	C	H	E	S	T	E	Q	D	P	V	X	I	T	A
A	E	N	C	I	P	S	H	I	R	T	J	R	T	I
T	A	B	L	E	C	L	O	T	H	N	A	E	N	S

Scramble Answers:

A. Soiled Dinner

- Milk
- Fried Chicken
- Mashed Potatoes
- Corn Oil
- Biscuits
- Tossed Salad
- Peas

B. Soiled Clothing

- Underwear
- Shirt
- Jeans
- Socks

C. Soiled House

- Desk
- Paper
- Chair
- Bed
- Dresser
- Chest
- Siding
- Towels
- Tablecloth
- Soap

Y O T C O R M D R E S S E R L
 T O W E L S A E G S U L Y R P
 Y D M S T O S S E D S A L A D
 F R I E D C H I C K E N E C S
 U N L I M Y E H O S R O S Y I
 N T K A L E D C R J H E S O D
 D P A P E R P I N E R E L T I
 E E H B E D O B O A E O L L N
 R T S N L R T E I N M G I F G
 W H A K I E A U L S O C K S Z
 E P I A L O T G S O C M O W I
 A J H B O B O A O A K U V O M
 R C H E S T E Q D P V X I T A
 A E N C I P S H I R T J R T I
 T A B L E C L O T H N A E N S

Water

Water Resources

Like soil, water is essential for the survival of both plants and animals. In fact, about 90% of your body weight is water and most actively growing plants or plant parts contain more water than solids, about one-half their weight. Deserts are proof that most plants cannot grow without water and you might live only about 5 days without it. Plants, animals and other organisms need nutrients. Water contained in every organism dissolves some of the nutrients and carries them to different parts of the organism. Then, some of the nutrients are converted into energy or materials that the organism need to grow, develop and repair itself.

Water We Use

Most of us give little thought to the importance of water in producing our food, clothing, shelter and many of the luxuries of our lives. We take for granted the water that comes from our faucets. We think of it as unlimited. About 136 gallons of water are used to produce a loaf of bread and 2,300 gallons to grow and transport the pound of beef it takes to make three or four hamburgers. Seven to ten gallons of water are necessary to produce a gallon of gasoline and processing one copy of a large city's Sunday newspaper takes about 1,280 gallons. Manufacturing the family automobile takes about 100,000 gallons. When we add the water used for recreation and for cooling the huge amounts used for food production and industry, we reach a grand total of about 1,500 gallons per person per day.

Water Cycle

But water doesn't disappear with our use of it in irrigation, manufacturing or consumption. The water we have now is the water we had at the beginning of time. Water forms, dissipates, and forms again in a cycle called the hydrologic or water cycle. Being a cycle, there is no beginning or ending. But for illustration, let's begin with the waters of the oceans, which cover about three-fourths of the earth.

Water from the surface of the oceans evaporates into the atmosphere. That moisture in turn is lifted, eventually condensed, and falls back to the earth's surface as precipitation. Precipitation that falls as rain, hail, dew, snow or sleet is important to people and agriculture.

Abuse of Water Use

Although it's true that our water doesn't disappear, it can be misused or abused. Human influence can't stop the hydrologic cycle, but we can interfere with it so that fresh surface water and ground water becomes unusable. As our use of water has increased, we have become more dependent on this limited natural resource. We can no longer think of it as plentiful, pure and free.

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What to do:

1. Ask the students to list all the ways they can think of that water is used. Then ask, "Is it lost forever?" Explain that there is no more or no less water than in the age of the dinosaurs.
2. Carefully dry and fill the quart jar with ice cubes or ice and water. Let it stand for a few minutes. Soon, the outside will be wet unless there is very low humidity. If this is the case, let a few students breathe gently on the jar. Their breath's water vapor will condense as dew. Dew will form only when an object is cooler than the air. Explain that dew is liquid water that forms water vapor in the air.
3. Melt the same ice in the pan over the hot plate. Bring it to a steaming boil. Be very careful not to touch the pan or put hands in steam coming from pan!

More Ideas:

- Ask the students to keep a record of all the ways they use water during the day. Discuss how life would be if we only had 4 quarts of water per person per day.

Materials Needed

- hot plate
- ice
- pan
- water
- quart jar

Vocabulary Words to Introduce

dew
vapor
condensation
humidity
evaporation

What to do:

1. On the day of the activity read the story “Diary of a Raindrop.” Ask the students what they think would happen to the little raindrop if it had fallen on a rock. Then ask what would happen if the little raindrop fell on a sponge.
2. With the sponge in the plastic plate, let each child pour a little water over it slowly until the sponge can hold no more. What happens? The sponge becomes saturated and the water runs off into the plate. Tell the students that soil is like a sponge. When raindrops fall, they soak into the soil.
3. What is the difference between the rock and the soil? How is rainfall in the city different from rainfall in the country? When the soil becomes saturated like the sponge, what happens? Explain that runoff collects in streams, rivers and lakes. When the runoff becomes more than the river and lake can hold, it spreads out over the land and causes flooding.

More Ideas:

- Ask the students to make up their own story of a raindrop and illustrate it with pictures.

Materials Needed

- plastic disposable plate
- sponge
- quart of soil
- milk carton
- water
- rocks brought from home

Vocabulary Words to Introduce

water cycle
humus
topsoil
reservoir

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Diary of a Raindrop

I am a raindrop and I have a story to tell. My earliest memory is when I melted out of an iceberg and dripped into the ocean. After floating in the salty sea, the sun's rays warmed the water enough to evaporate me. I rose into the atmosphere where I hit cool air and helped form a cloud. I floated high above the earth and then fell with other raindrops all the way back down and hit the land. I eventually evaporated and rose to help form another cloud, then condensed again and landed on the ground. I repeated this water cycle many times, and each time I fell to the earth my experience was different. Some of my experiences were enjoyable and fulfilling, and others painful and wasteful.

The first time I fell out of a cloud, I landed in a forest. I struck a tree leaf which kind of felt like a trampoline absorbing the shock of my fall. I dripped onto the forest floor, which was covered with a blanket of humus that acted like a sponge and absorbed me immediately. I traveled through the ground and came out of a crystal clear spring where I was soon drunk by a fawn. Fellow raindrops landed on that same forest watershed. They trickled down the hillside and helped replenish a clear lake, as still other drops were taken up by trees and plants and transpired into the atmosphere.

My next experience was different. I fell into a cotton field. I struck the hard, bare earth, and boy, what an impact! I imagine it would be like a human being falling off the Empire State Building and hitting 5th Avenue flat on his face! I struck with such force that I dislodged many soil particles and became very dirty.

I began flowing with my fellow raindrops and we united to form a strong and angry team running down the hillside. Nothing was there to stop us! The faster we flowed, the stronger we became and the more earth we moved (and being filled with soil particles was very uncomfortable!). Together, we carried nearly a ton of topsoil into the river below making it very muddy. I could hear fish and other living things crying for help as they were choked by the sediment.

My next cycle, I fell in a corn field and again landed on the soil. This time, however, my experience was much better because the surface contained organic residue, which helped absorb the shock of my fall. I didn't dislodge many soil particles nor flow far before I was absorbed into the soil. A grassed waterway safely and cleanly stopped some of my fellow raindrops from flowing away. The next day I was taken up by the nearest corn plant and helped form the sweet juice of a kernel. Before long I was eaten and enjoyed by a human just like you.

The last time I fell to earth, I landed in a reservoir destined for "human consumption." I felt disappointed when, after much preparation of being cleaned and piped and pumped a long distance, I came out a leaky faucet and went down the drain unused. What a waste!

As an active raindrop, I felt I was important because I affected the earth and all living things in so many ways. Without water, nothing could survive! Humans seem to be in control of much of the earth's surface nowadays, so I feel it is up to you to take good care of us raindrops and other forms of water we make. As for myself, the last time I rose into the atmosphere I crystallized into a snowflake, so I decided to go north where I'm now happily retired inside a glacier. Who knows, maybe some day I'll be reborn.

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What to do:

1. Write the equation, WATER=LIFE on the board.
2. Have students discuss the relationship between water and life. (**Water is necessary for the survival of all forms of life.**)
3. Have students list ways water can be polluted. (Chemicals, soil erosion, industrial and sewage wastes, acid rain, drainage from mines, thermal pollution from using water as a coolant in industrial processes.)
4. Discuss ways to properly manage resources so that water pollution is reduced or eliminated:
 - a. Watershed Management: Includes the control of soil erosion by forest and plant cover to prevent sediments, fertilizers and pesticides, from entering streams.
 - b. Sewage Treatment: Involves filtration, settling, bacterial treatment before water is returned to the stream.
 - c. Controlling air pollution: Reduces the chemicals in the air which contribute to acid rain.
 - d. Land Reclamation: Reclaims land as the mining process is underway and reduces erosion and leaching of minerals into streams.
 - e. Cooling Ponds and Towers: Allows water that has been used to cool industrial products and power generating equipment to cool industrial products and power generating equipment to cool in a pond before returning to the stream.
 - f. Careful Use of Chemicals: Reduces the amount of chemical fertilizers, industrial wastes, pesticides, etc.
5. Have students complete the word chart. Have reference material available to help them think of words to use.

Materials Needed

- Chart provided

Vocabulary Words to Introduce

soil erosion
industrial waste
sewage waste
acid rain
thermal pollution

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Name _____

A Lot of Wet Words

**Word Exercise
Activity Lesson #9**

For each letter in the word WATER, list one thing whose name begins with that letter or includes the letter in the number under the different categories.

	W	A	T	E	R
Ways people use water					recreation
Ways people waste water					
Ways water can be polluted					
Ways water is managed properly	sewage treatment				
Factors that increase or decrease the water supply					
Plants and animals found in water					

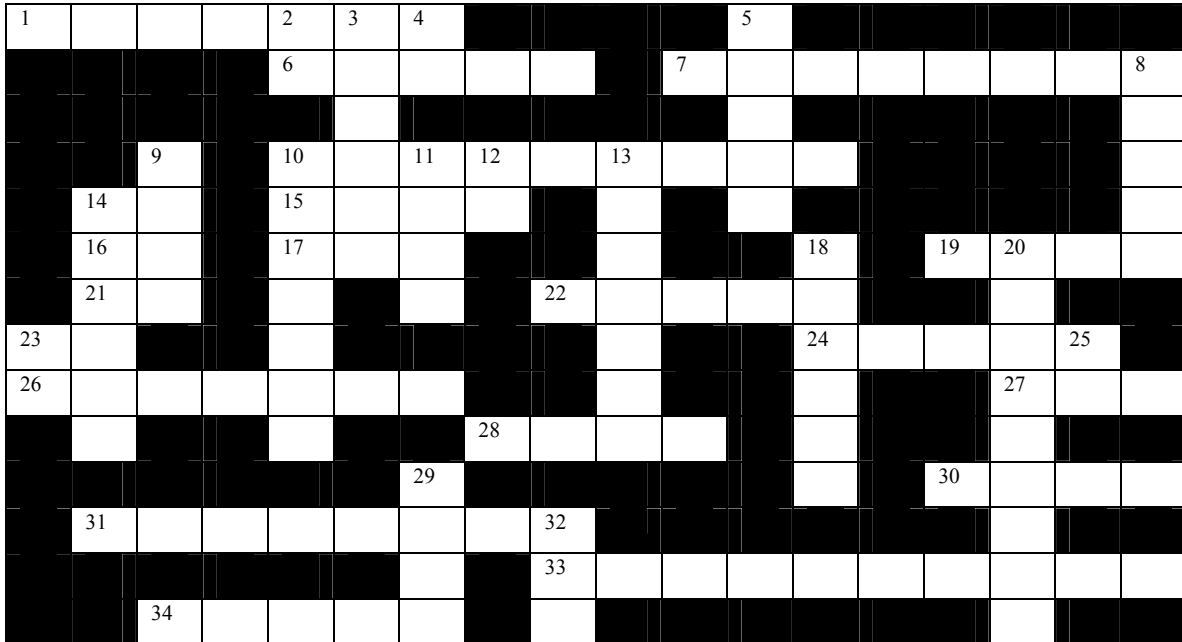
Write a paragraph about the importance of water.

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Name _____

Water Puzzle

Activity Lesson #10



Across:

- immature frog
- most important liquid
- tall plants at water's edge
- contamination of nature
- abbreviation for Michigan
- well traveled path
- who is responsible for pollution
- writing fluid
- part of the pond where water meets land
- slang for "be quiet"
- Texas is one
- lives, exists
- not dirty
- national government
- long-nosed armored fish
- largemouth or smallmouth game fish
- winter precipitation
- microscopic decomposers
- fruit that is 97% water
- single-celled water plants

Down:

- Ouch
- a small pond or waste-water lake
- extra-terrestrial (abbreviation)
- short for "alligator"
- reptile with no arms or legs
- finned animal in water
- the first three grades
- large body of fresh water
- abbreviation for learning disability
- reptiles with hard shells
- clam-like invertebrate
- runner-up, _____ place
- large insect found near water
- supposing that
- North America (abbreviation)
- one of the Great Lakes
- feeling inspired by a waterfall

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Water Puzzle

Answers to Activity #10

1T	A	D	P	2O	3L	4E					5G						
				6W	A	T	E	R		7C	A	T	T	A	I	L	8S
					G						T						N
		9F		10P	O	11L	12L	U	13T	I	O	N					A
	14M	I		15R	O	A	D		U		R						K
	16U	S		17I	N	K			R			18S		19E	20D	G	E
	21S	H		M		E		22S	T	A	T	E			R		
23I	S			A					L			24C	L	E	A	N ₂ 5	
26F	E	D	E	R	A	L			E			O			27G	A	R
	L			Y			28B	A	S	S		N			O		
						29E						D		30S	N	O	W
	31B	A	C	T	E	R	I	32A							F		
						I		33W	A	T	E	R	M	E	L	O	N
		34A	L	G	A	E		E							Y		

1. Tell the students that 99.4% of the world's water is in the oceans and polar ice caps, and the remaining 0.6% is the water on land.
2. Demonstrate by placing 100 teaspoons of water in a glass container labeled "Total Water of the World." Remove 1/2 teaspoon of water and put it into a second container labeled "Total Land Water."
3. Have the students write down their reaction to the demonstration.
4. Demonstrate a similar situation by displaying the total amount of land water used by people:
 - a. Pour water in the "Total Land Water" container.
 - b. Remove 1 teaspoon of water and put it into a third glass container labeled "Freshwater Lakes and Rivers."
 - c. After the pupils compare the amounts, tell them that most of the people in the world get their water from rivers. Where is the rest of the total land water? (1% in salt lakes, almost 98% in the water tables, remainder in soil and air moisture and rain) What happens if the rivers are polluted?
5. Discuss the following:
 - a. Can all plants and animals live in salty water?
 - b. Where do other wild animals and aquatic plants get their water? (lakes, ponds, streams and other surface land water)
 - c. How much water is on the earth now compared to 1,000 years ago? (Answer: The same)
6. Have students complete the activity page. Discuss the answers in class. Focus on why people need water for health purposes. (prevent dehydration, perform bodily functions)

Materials Needed

- three glass jars
- teaspoon
- water
- measuring cup

Vocabulary Words to Introduce

polar ice caps
salt lakes
water tables

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Name _____

Water Math

Activity Lesson #12

Calculate the answer of each of the following problems. Show your work.

Background Information

Baby's weight = $\frac{3}{4}$ water

Grown person's weight = $\frac{1}{2}$ water

1 liter of water weighs 1 kilogram

- Charlie is Sally's baby brother. He weighs 8 kilograms.
 - What percentage of his weight is water?
 - How many kilograms is water?
- Sally's father said, "My body has 40 liters of water according to my weight." How much does he weigh?
- The school nurse told 11-year old Sally that she weighs 30 kilograms and that 18 kilograms of that is water.
 - How many kilograms of that is water?
 - Why isn't Sally's total number of kilograms in water, 15 kilograms?
- If Laura has 10 kilograms of water in her body, then ...
 - What is her total weight if she is a baby?
 - What is her total weight if she is a full grown woman?

- Answers: 1. a. 75% b. 6 kg ($\frac{3}{4} \times 8$ kg)
2. 80 kg (40 liters $\times 1$ kg/liters = $\frac{1}{2}$)
3. a. 12 kg b. Because Sally is not full grown
4. a. 13 $\frac{1}{3}$ kg ($10 \frac{3}{1} = 13\frac{1}{3}$ kg)
b. 20 kg ($10 \frac{1}{2} = 20$ kg)

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Name _____

Water and Aquatic Life

Activity Lesson #13

1. What percent of the world's water is in lakes and rivers?
 - a. 99%
 - b. less than 1%
 - c. 75%
 - d. 50%

2. Seventy-five percent of baby's weight is:
 - a. muscle
 - b. bone
 - c. blood
 - d. water

3. All of the following contribute to water pollution except:
 - a. reclaiming mined land
 - b. soil erosion
 - c. air pollution
 - d. industrial and sewage wastes

4. List three ways to reduce water pollution.

Answers: 1. a 2. d 3. a 4. Answers are limitless

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Just

For

Fun

Name _____

Wildlife by Any Other Name

Just for Fun Activity #1

Circle the letter of the correct answer from the multiple choice list.

1. A group of geese is called a ... a. skein b. troop c. spring
2. A group of herons is called a ... a. shoal b. sloth c. seige
3. A group of pheasants is called a ... a. congregation b. bouquet c. skulk
4. A group of toads is called a knot ... a. knot b. colony c. troop
5. A group of bass is called a ... a. spring b. shoal c. leap
6. A group of ducks on the water is called a ... a. raft b. padding c. flock
7. A group of owls is called a ... a. colony b. parliament c. mummeration
8. A group of peacocks is called a ... a. ostentation b. congregation c. troop
9. A group of locusts is called a ... a. watch b. skulk c. plague
10. A group of snipe is called a ... a. wisp b. skein c. richness
11. A group of crows is called a ... a. flock b. murder c. colony

Answers: 1. a 7. b
 2. c 8. a
 3. b 9. c
 4. a 10. a
 5. b 11. b
 6. a

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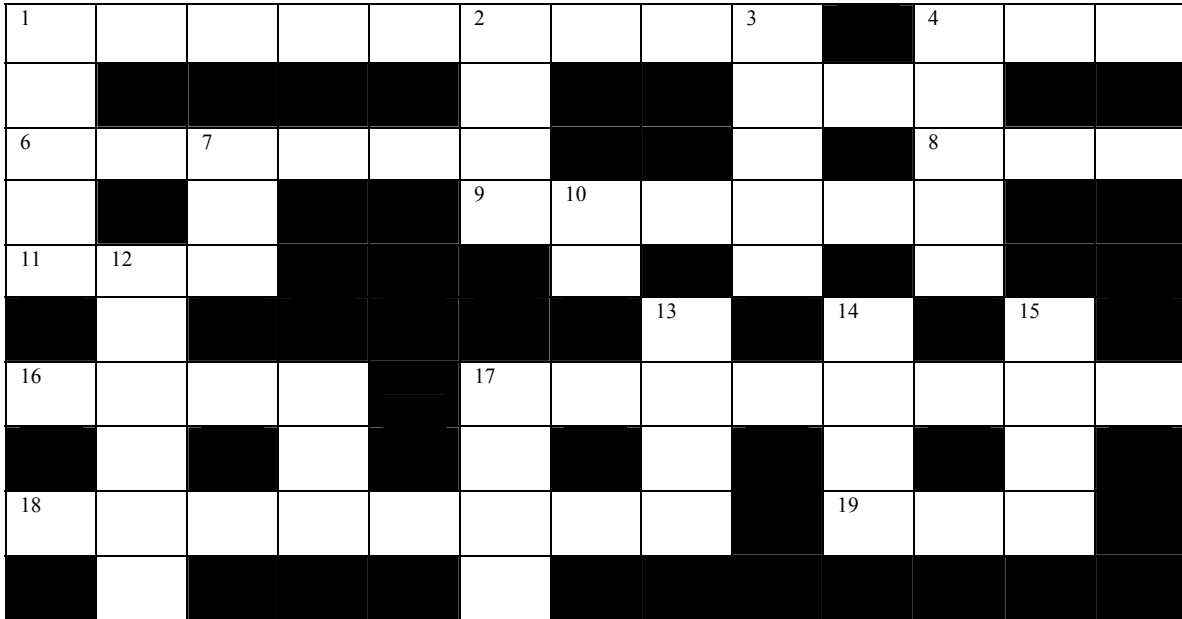
Name _____

A Chain of Events

Just for Fun Activity #2

Use the words listed below to fill in the crossword puzzle.

snake cats leaves sit turtle six eat acorns predator bass
 next pets roots owl sleep oak up sad feathers prey



Across:

1. Animal that feeds on dead bodies of animals which they did not kill
4. Number of legs an insect has
5. Animal that does give a hoot
6. Nuts produced by oak trees and eaten by deer, turkeys, and squirrels
8. What animals do with their mouths
9. Reptile that carries its home on its back
11. Large deer-like animal
16. Houst pets related to mountain lions
17. What we call an animal that captures and eats another animal
18. Outer covering of birds
19. What we would be if there were no animals in Texas

Down:

1. Reptile without legs
2. Birds lay eggs in this
3. Part of tree below ground
4. What people and animals do at night
7. Type of tree that produces acorns
10. Opposite of down
12. The green parts of a tree that make oxygen
13. Dogs and cats make good ____, but wild animals do not
14. Type of fish that eats bluegills and rhymes with pass
15. Something animals and people must have to live
17. What we call an animals that is captured and eaten by another animal www.tx.nrcs.usda.gov

A Chain of Events

Answers: Activity Lesson #2

¹ S	C	A	V	E	² N	G	E	³ R		⁴ S	I	X
N					E			O	W	L		
⁶ A	C	⁷ O	R	N	S			O		⁸ E	A	T
K		A			⁹ T	¹⁰ U	R	T	L	E		
¹¹ E	¹² L	k				P		S		P		
	E						¹³ P		¹⁴ B		¹⁵ F	
¹⁶ C	A	T	S		¹⁷ P	R	E	D	A	T	O	R
	V		I		R		T		S		O	
¹⁸ F	E	A	T	H	E	R	S		¹⁹ S	A	D	
	S				Y							

Taxonomy is the study of animal and plant classification.

1. Putting Animals into groups to make study easier is called
 - a) Phylum
 - b) cold-blooded
 - c) classification
 - d) herbivore

2. Animals with backbones are
 - a) invertebrates
 - b) vertebrates
 - c) characteristics
 - d) mammals

3. The five main groups of vertebrates are
 - a) mammals, birds, reptiles, amphibians, and fishes
 - b) mammals, insects, birds, amphibians, and fishes
 - c) mollusks, mammals, reptiles, fishes, and insects
 - d) reptiles, spiders, fishes, mammals, and birds

4. Animals that maintain a constant body temperature are
 - a) amphibians
 - b) cold-blooded
 - c) reptiles
 - d) warm-blooded

5. Herbivores are
 - a) hungry
 - b) plant-eaters
 - c) meat-eaters
 - d) eat both plants and meat

6. Animals that change body temperature to match their surroundings are
 - a) cold-blooded
 - b) mammals
 - c) vertebrates
 - d) eat both plants and meat

7. Reptiles breathe with
 - a) air pockets
 - b) gills
 - c) lungs
 - d) both gills and lungs

8. Omnivores eat
 - a) plants
 - b) animals
 - c) both plants and animals
 - d) fish

Answers: 1. c; 2. b; 3. a; 4. d; 5. b; 6. a; 7. c; 8. c
From "Nature's Notebook" Kansas Fish and Game Commission