4H ESM 11

Earth Connections I

UF | IFAS Extension
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Acknowledgements...

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Earth Trek... Exploring Your Environment, April, 1987, Environmental Protection Agency, Washington, D.C.: Office of Public Affairs OPA-87-004.

Medlicott, J. (1989) *Soil and Water in North Carolina: Activity Book for 4-H'er and Family*, Raleigh, N.C.: The North Carolina Agricultural Extension Service.

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Sevebeck, K.P., Birch, S.K. and Pettus, A. M. *Be Water-Wise. (1983),* Blacksburg, VA: Virginia Resources Research Center, Virginia Tech.

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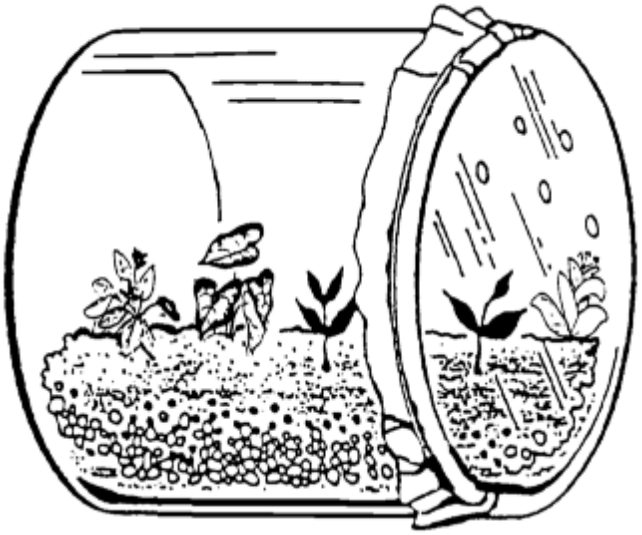
A CHAIN OF LIFE EXPERIMENT!

Lesson 1 Earth Connections

5-8 YEAR OLDS

What you will need:



2 jars or 2-liter soda bottles, with tops cut off

Bean seeds

Sand, soil, pebbles
Water

Plastic wrap, rubber band

What you do:

- Place a layer of pebbles in bottom of jar.
- Place a layer of soil or sand next.
- Moisten the soil with water.
- Plant the seeds.
- Cover the container tightly with plastic wrap.
- After the seeds sprout, punch holes in plastic wrap.
- Prepare 1 jar and put in dark place.
- Prepare 1 jar and put in sunny place (not direct sunlight or direct heat).

What happens?

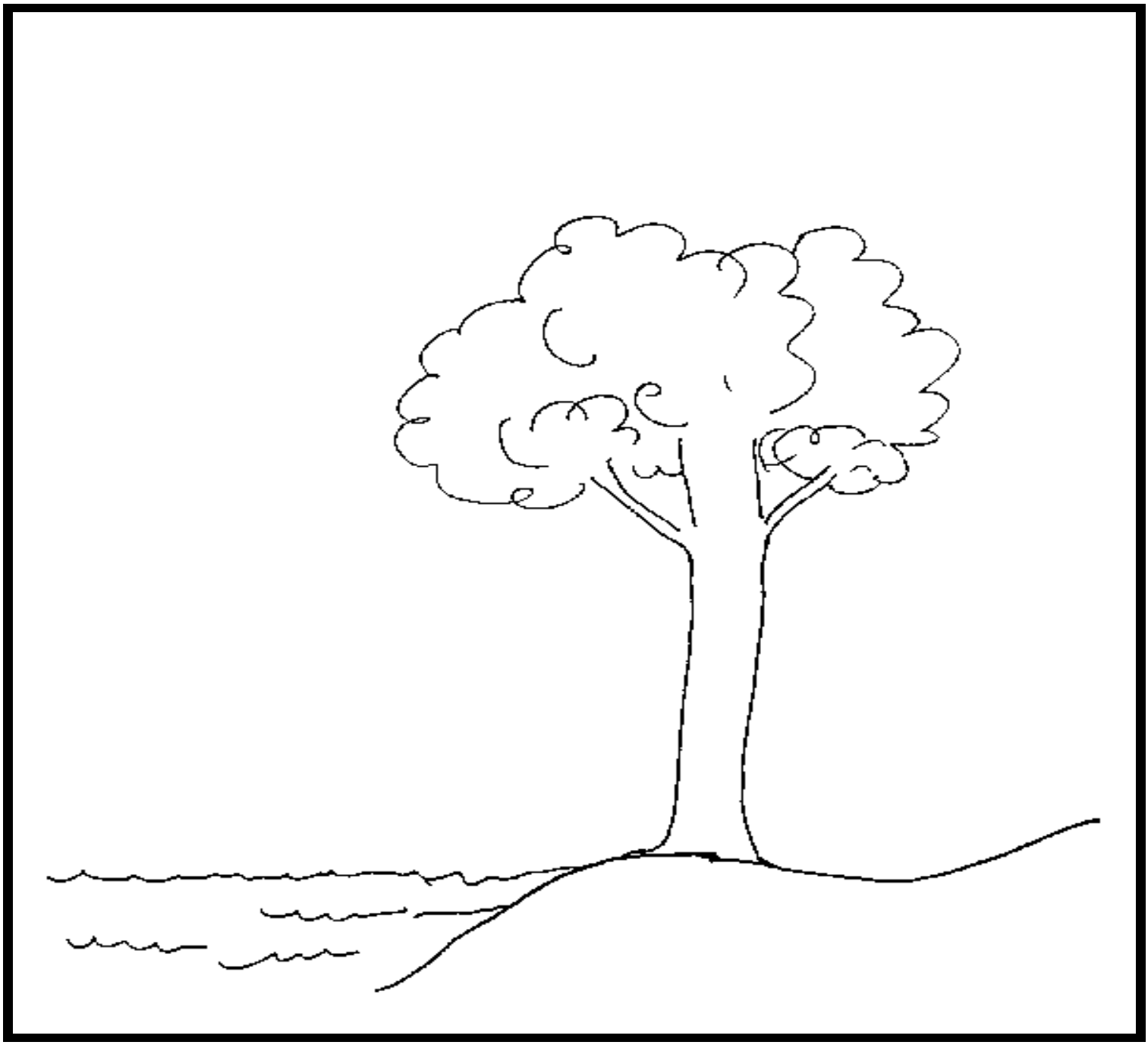
Day 3_____

Day 5_____

COMPLETE THE PICTURE...

Draw a picture of where large animals and plants live, and what they need.

Ecosystem is living and nonliving things within a specific area.



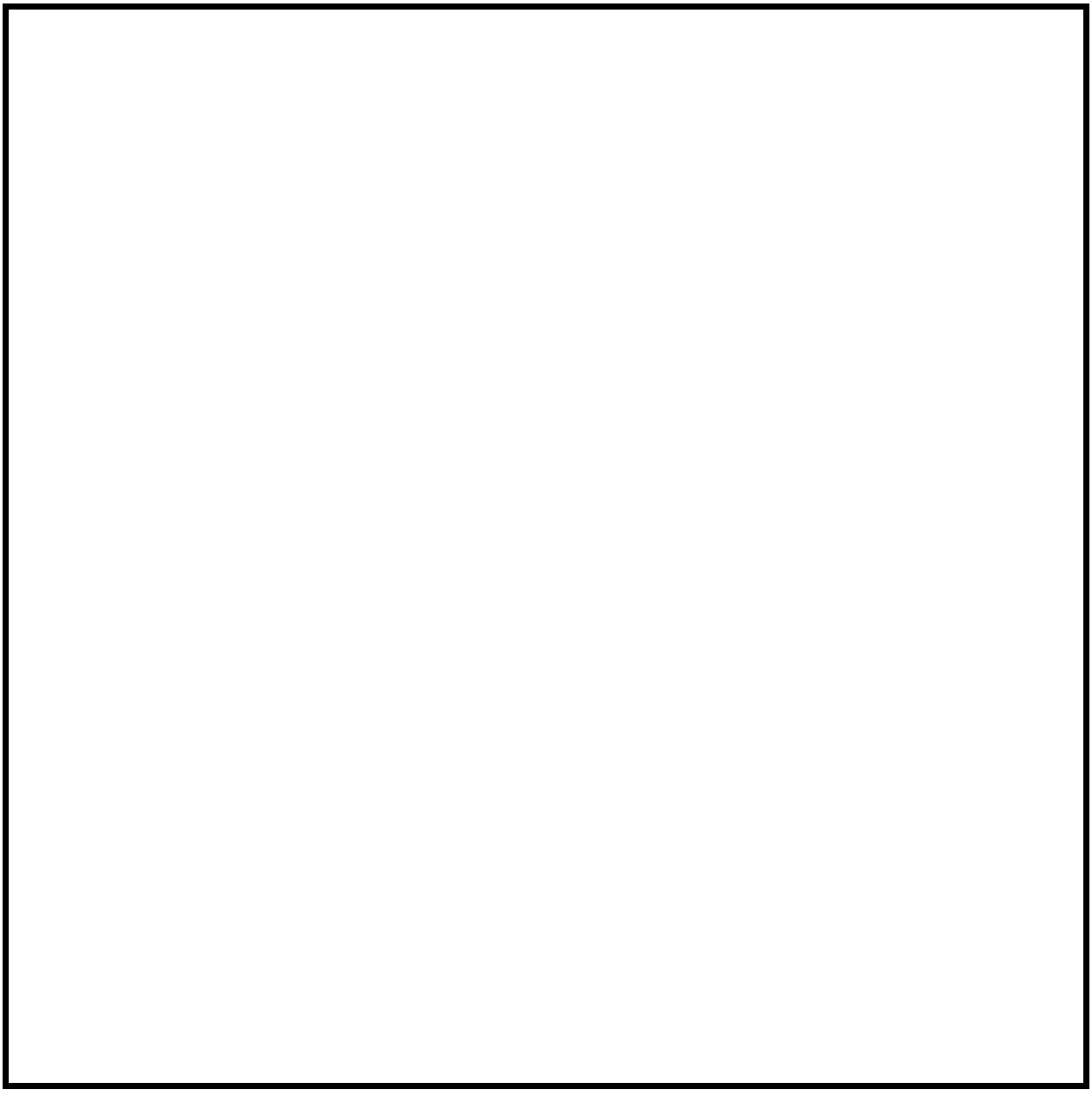
FIND THE ECOSYSTEMS

Forests
Desert
Prairies
Ocean
Lake
River
Swamp

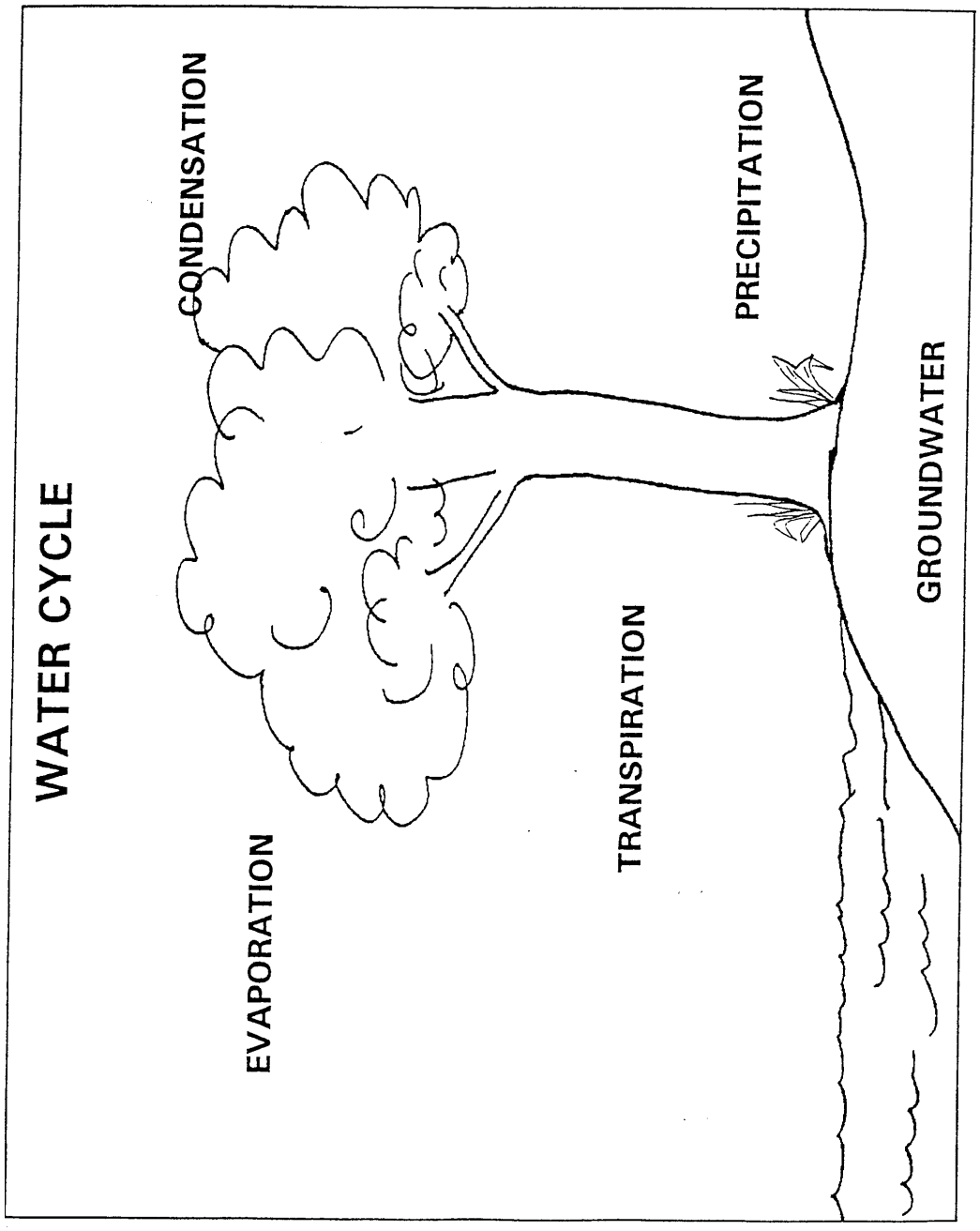
A	L	O	F	J	I	B	C	Q	D
F	N	B	O	C	E	A	N	F	E
P	C	W	R	I	T	L	P	O	S
L	A	K	E	B	M	M	A	W	E
D	E	S	S	T	A	Z	E	V	R
R	P	I	T	W	I	M	Q	P	T
T	R	M	S	F	R	I	V	E	R
K	W	P	R	A	I	R	I	E	S

Circle the different natural ecosystems you can find.

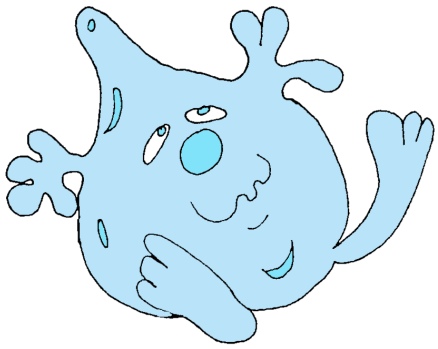
Where is the water?



Draw a map of your town…include lakes, rivers, streams or other places you see lots of water.



Complete the picture of a water cycle to show how water moves on earth.



Lesson 2 Water

5-8 YEAR OLDS

WATER USES

Place a picture or draw a picture of how water is used and how it can be conserved.

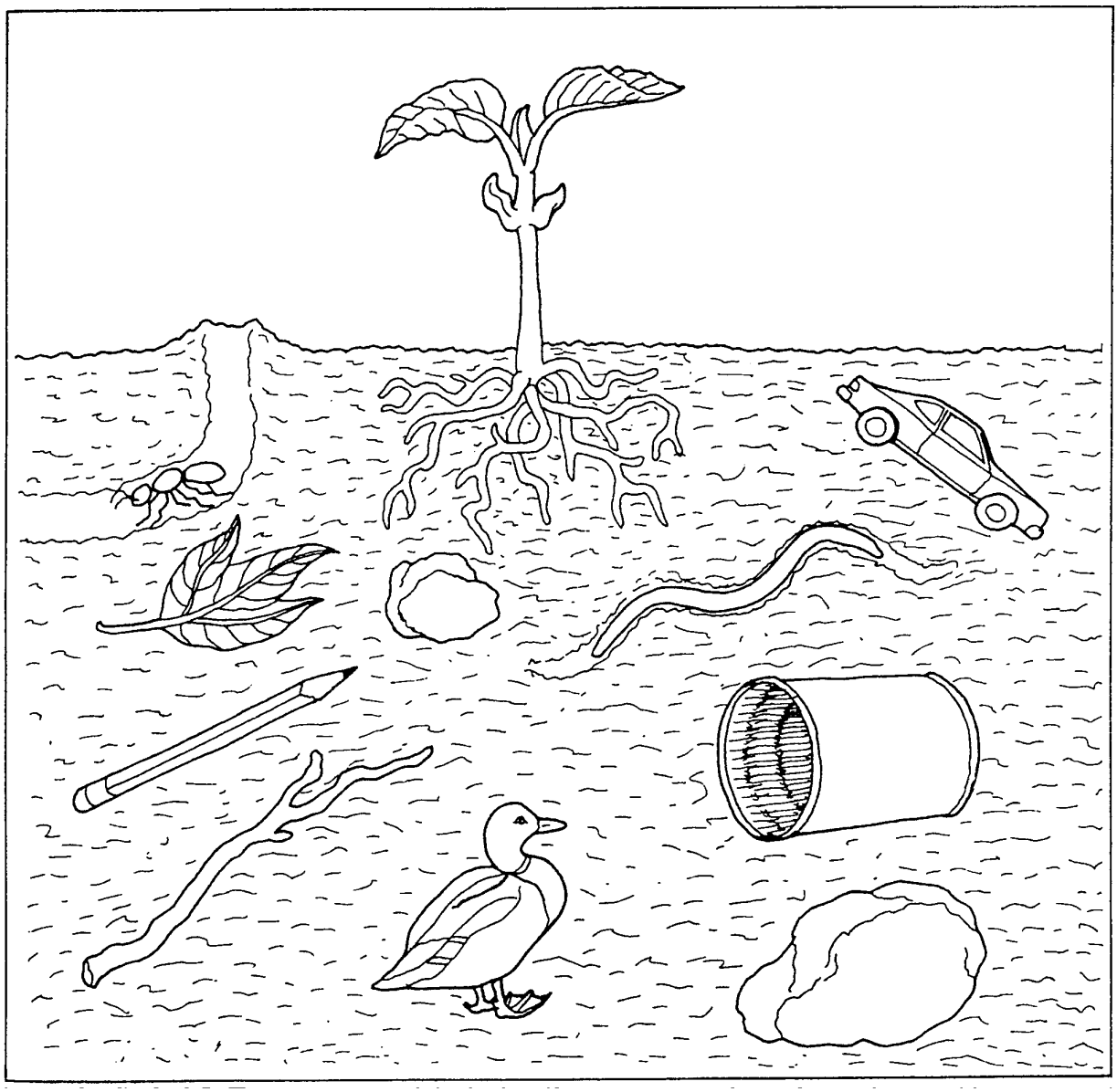
AT HOME

FOR FUN and PLAY

FOR JOBS

FOR OTHER THINGS

COLOR THE PICTURES



Sorting Through Soil

You Will Need:

- A small cup of soil
- Magnifying Glass
- Newspapers or large container to spread you soil sample

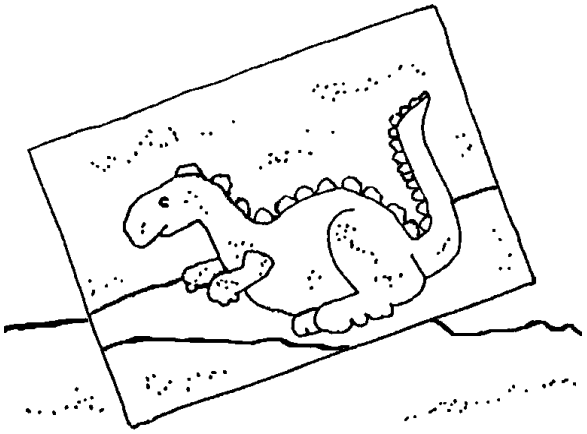
What To Do:

- Look at the soil.
- Circle the things in the picture you found, that belong in the soil.
- Put an X on the things in the picture that don't belong in the soil

Soil, Terrific Soil

You Will Need:

- cardboard, heavy paper
- different types of soil
- pencils
- glue
- plastic spoons



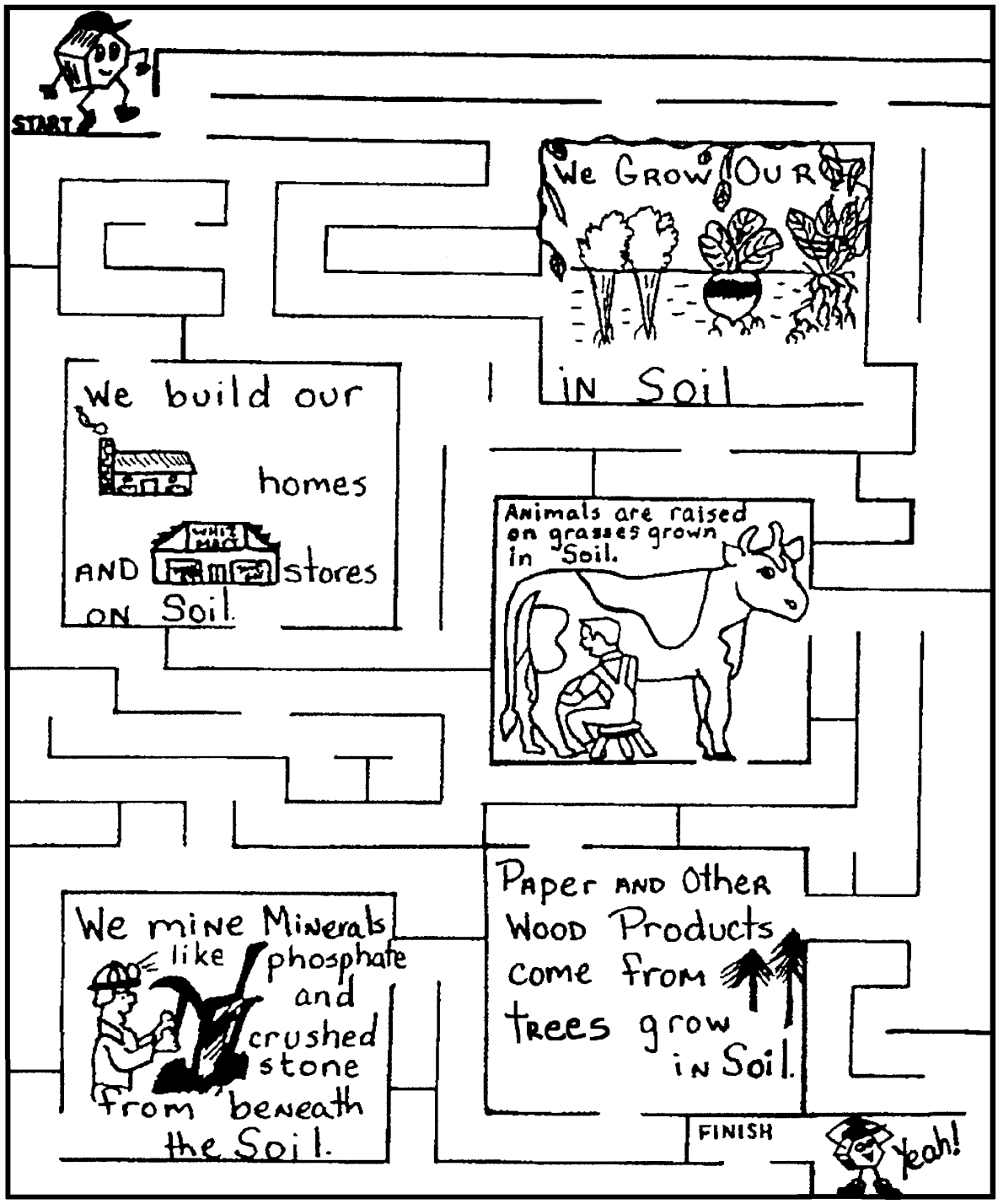
What To Do:

- Draw a picture on your paper.
- Put glue on picture parts.
- With spoons, sprinkle soil on glue.
- Wait 5 minutes, sprinkle off excess soil.

WHY IS SOIL IMPORTANT TO US?

How many ways is soil used around your home?

Let's find out how important soils are to you!
Lead Sammy through the maze.



BE A SOIL SCIENTIST

Follow the instructor's directions for planting your seeds.
Watch your plants for the next five to ten days.
Measure the plants each day.
Write down the height of the plant on the chart.

Day	Plant Height in Sandy Soil	Plant Height in Potting Soil	Plant Height in Clay Soil
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

After five to ten days, draw a picture on another piece of paper of how each plant looks.

Which soil grew the tallest plant?
_____

Which soil grew the shortest plant?
_____

Which soil seems to be the worst to grow these plants in?
_____

5-8 YEAR OLDS

BUBBLING BEANS

You will need:

20 dried beans

Glass

Water

Instructions:

Here is a simple experiment you can perform in just a few minutes.

1. Drop 20 dried beans into a clear glass. Pour warm water into the glass until the seeds are covered.

2. In a few minutes, you will see small bubbles rising from the beans. The bubbles come from the same spot on each seed. Can you explain what is going on?

What happened?

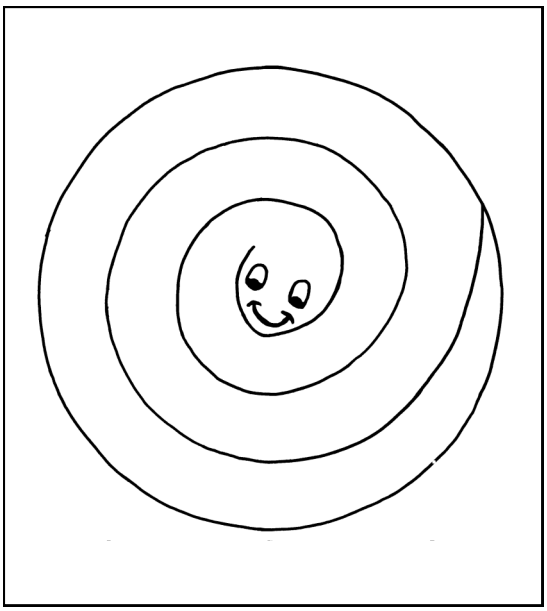
_____

Why?

_____

5-8 YEAR OLDS

Spinning Snakes!



What you will need:

- 1 sheet of paper
- pencil
- scissors
- 12 inch piece of string
- tape
- heat source (radiator, hot plate, light bulb or candle)

HELP OF A PARENT!

What you do:

Draw a spinning snake onto paper.

Cut picture to form a spiral snake.

Tape the string to the tail of the snake.

Hold the snake over (about 1 foot) the heat source.

The snake will spin merrily.

What happened?

_____

Why? ***Because heat rising makes the air move.***

PARTICLE CATCHERS!

5-8 YEAR OLDS

What you will need:

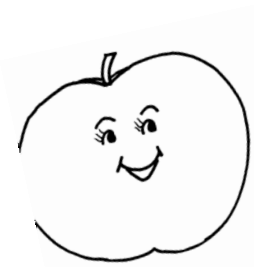
- Petroleum jelly
- 2 pieces of white paper
- or cardboard
- Magnifying glass (optional)

What you do:

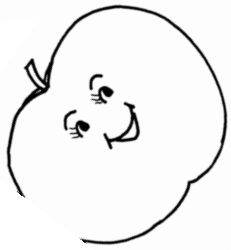
- Smear petroleum jelly on your paper
- Place 1 inside the house and 1 outside
- Leave it there for several days (Bring it inside if it rains!)
- Examine your catch.

Look what's in the air you breathe!

5-8 YEAR OLDS



Apples in the Air!



Change in apples with and without air

DAY	PLAIN APPLE	WAXED APPLE
1		
2		
3		
4		
5		

Which apple spoiled the fastest?

_____

Why did it spoil the fastest?

_____

Why is decay important? ***Because it is needed for recycling of nutrients in soil.***

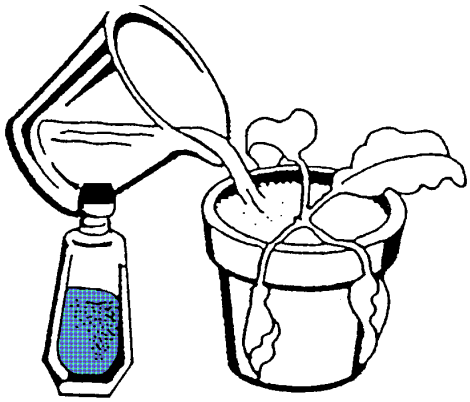
HARMFUL HURTS!

You will need:

- 2 small paper cups
- Saucer
- Sharp pencil
- Soil
- Food coloring
- Water

What you do:

- Punch 3-4 holes in one cup with pencil.
- Put about 1 inch of soil in the cup.
- Place cup with soil on saucer.
- Put 2 drops of food coloring into second cup. Add 1 inch of water.
- Pour colored water into soil.



What happened?

_____

_____

If the food coloring was a chemical, where would it go?

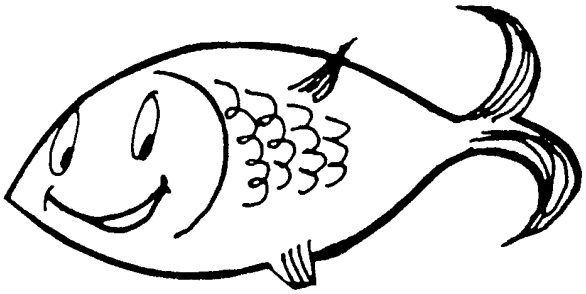
_____

_____

SLIPPERY FISH!

You will need:

- Newspapers
- Pan of water (large enough to put your hand into it)
- 1/2 cup of cooking oil
- Paper towels
- Soap



What you do:

- Spread newspapers under pan of water.
- Pretend your hand is a fish.
- Carefully put your hand into the pan.
- Think of how the fish, your hand--feels.
- Take your hand out. How does it feel?
- Wash your hand with soap and water.
- Clean up your "ocean lab".

How do you think fish and other animals feel when we have oil spills in the ocean?

_____

What can happen to them?

_____

WATER SCRUBBER

You will need:

- 1/2 gallon plastic jug
- Scissors
- Nail
- Hammer
- THE HELP OF A PARENT
- Pebbles, gravel, and sand (coarse and fine)
- Glass jar
- Muddy water

What you do:

- Cut off the bottom of a 1/2 gallon plastic jug. Then, unscrew the cap and ask one of your parents to punch a few small holes in it with the tip of a nail and a hammer. Screw the cap back on and turn the jug upside down.

- Fill the jug with equal layers of pebbles, gravel, coarse sand, and fine sand. The pebbles go in first, the gravel next, then the coarse sand, and, finally, the fine sand on top. Don't fill the jug completely; leave a couple of inches free.

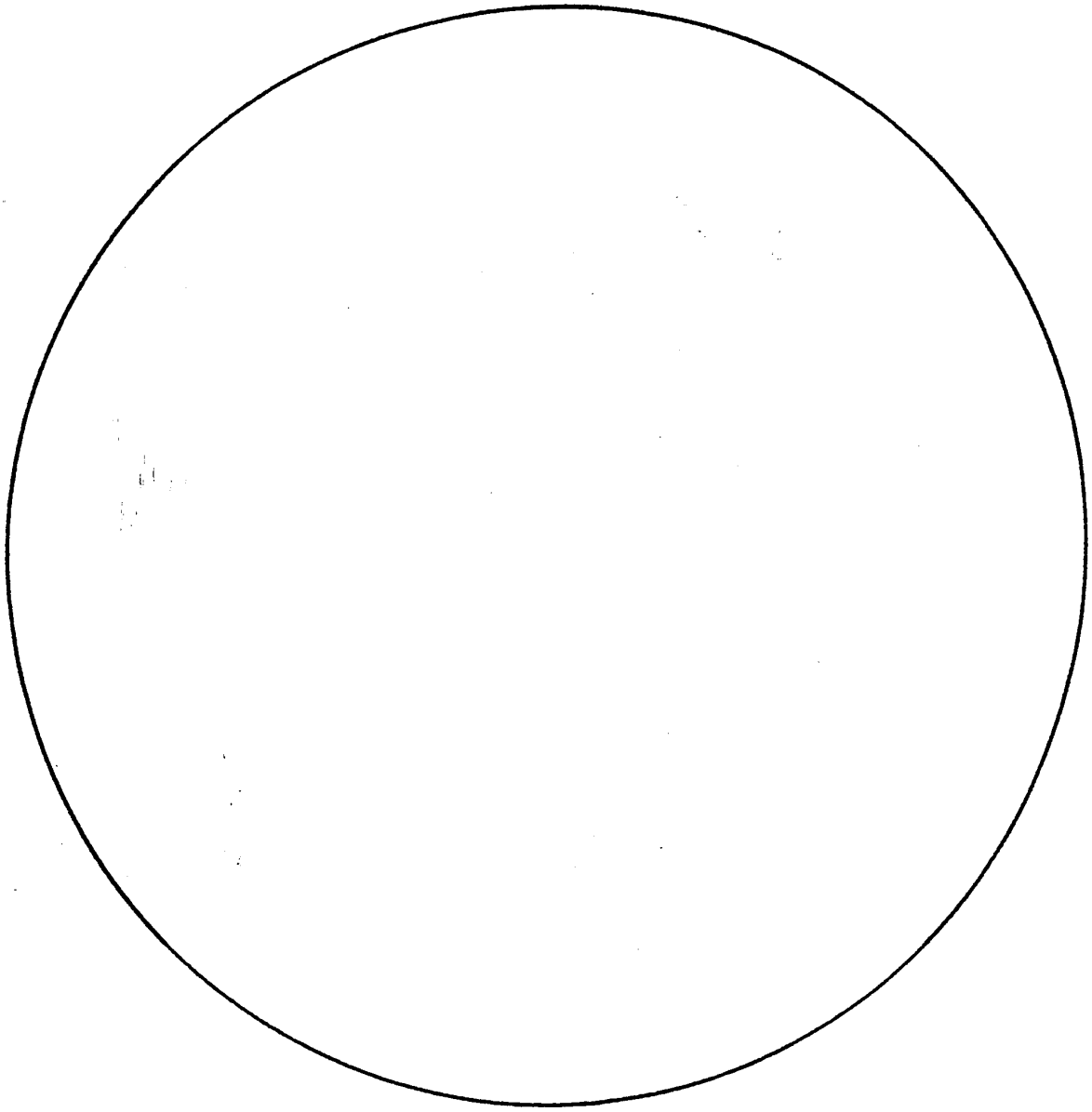
- Hold the jug over a clear glass jar so that it rests securely.

- Now, pour some muddy water onto the sand. In a few minutes, clean water will trickle into the jar.

This is what happens:

You have just performed filtration. Filtration is the removal of material that is suspended in a liquid. The muddy water contained many impurities, and these were trapped--filtered--by the layers in your jug. The water itself, however, was free to pass through the layers and into the jar. Of course, you shouldn't drink this water because it is not really clean enough for drinking.

Our World... earth connections!



Draw a picture of one thing you can do to protect our earth's water, soil and air.

Our Natural World...

What you need:

- crayons or markers
- paper
- tape
- scissors
- wire coat-hanger
- yarn of various lengths

What you do:

Color the picture and cut out. Tape yarn to world picture and then tie to hanger. Draw, color and cut out stars, moon and sun and attach to your hanger for a colorful mobile. Hang it in a place to remind you to take care of OUR WORLD!

_____
Name

_____
Address

_____
Name of Club/School

_____
Leader/Teacher's Name

4-H Club Motto

"To make the best better"

4-H Pledge

I Pledge:
My head to clearer thinking
My heart to greater loyalty
My hands to larger service, and
My health to better living
for my club, my community,
my country, and my world.

4-H Colors

Green and White

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The University of Florida 4-H Youth Development Program, Florida Cooperative Extension, Institute of Food and Agricultural Sciences, January, 2011.

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