

**OBJECTIVE:** To help students become aware of soil and its importance to plants and animals.

**16 Picture Poster**

**Activities** (LA, S, A, M)

- ★ **Who Needs Soil?** Ask your students to think of ways that animals and plants use the soil. If they need help, here are some ideas:
  - to live in (termites and worms)
  - to sleep in (moles, snakes)
  - to store food in (squirrels, chipmunks)
  - to get food from (birds, people, worms)
  - to hibernate in (turtles, frogs, insects)
  - to grow in (plants)

**Observing:** Look at the 16-picture poster together. Can your students find animals that use the soil in the ways you've just discussed? The prairie dog, for example, makes its home by burrowing into the soil. See the back of the poster for examples of how other animals use the soil.

**Drawing:** Have each child draw a picture of a favorite plant or animal, and explain why it needs soil. Older students can write a sentence on their pictures about why soil is important to plants and animals.

**Comparing:** Ask students to compare the four **habitats**, identifying how they are alike (they all have soil, plants, animals, etc.) and how they are different (the desert is dry, the marsh is wet, the forest is shady, the prairie is sunny, etc.). You may also want to talk about similarities and differences between plants and animals.

★ **Soil Flash Cards** Laminate the 16-picture poster or cover it with clear contact paper. Cut the poster into sixteen individual pictures and use them in the following activities.

**Classification:** Ask students to sort the pictures in different ways. Which animals have fur? Feathers? Scales? A hard covering? Which animals dig? Swim? Fly? Hop? Crawl? Walk? Find the animals and plants with the color orange, black, green, etc. in them. Which animal names begin with the letter P? M? and so on.

**Counting:** How many birds are there? Furry animals? Insects? (NOTE: Remind your students that spiders and worms are not insects. Insects have six legs and three body sections.) How many legs does the tarantula have? How many legs do the other animals have? How many do people have? How many legs are there in the class? How many plants are there in the poster?

**Movement:** Choose several different animals from the 16-picture poster. Call out the name of an animal, such as "grasshopper," and let the children act out the animal. Encourage your students to mimic things that these animals do, such as eating, sleeping, playing, and looking for food. Turn this into a game of charades by letting one child or a small group of children mimic the animal, while the rest of the class tries to guess what the animal is.

★ **Food Chains** You can make a **food chain** bulletin board using the 16-picture poster photos and other pictures. Using construction paper, make a sun for the top of the bulletin board and a strip of

soil for the bottom. Put the picture of the cattails and the prairie flowers above the soil. Here you can talk about how plants make food from sunlight and get minerals from the soil. Next put the muskrat above the cattails and the grasshopper above the prairie plant to show that these animals eat the plants. Connect the plants and animals with yarn or string. Now you can talk about the muskrat eating cattails and the grasshopper eating prairie plants. Put the snapping turtle above the muskrat and the burrowing owl above the grasshopper. Snapping turtles eat muskrats and burrowing owls eat grasshoppers. Connect these animals. Talk with your children about how a food chain works.

★ **Food Chain Game** Choose two children to start the food chain game, and have the rest of the class form a circle around them. Blindfold both students. One of them will be the burrowing owl and the other will be the grasshopper. The rest of the children will be prairie plants. The burrowing owl must try to catch the grasshopper in the "prairie" formed by the circle of children. When the burrowing owl says "who," the grasshopper must answer "chirp, chirp." The children in the circle should help the owl and the grasshopper stay inside the prairie.

To make the game more difficult, have the children in the circle make the sounds of wind, coyotes, swishing grasses, and other prairie noises. Adjust the size of the circle to change the difficulty of the game. Choose a new owl and grasshopper to start each round.

**Soil Walk** (S, LA)

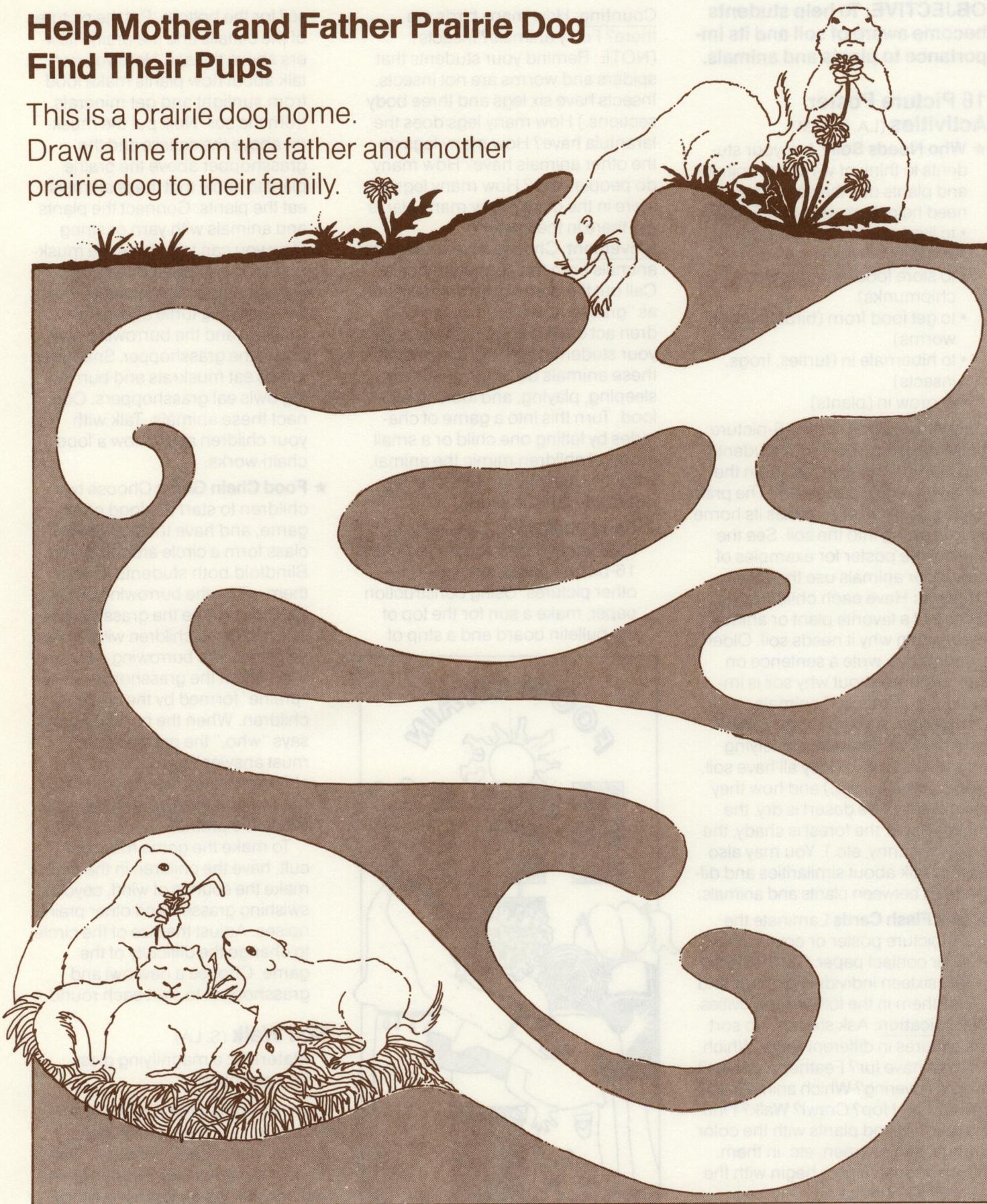
**Materials:** a magnifying glass for each child

Children enjoy exploring the outdoors, so here are some suggestions for planning a "soil walk." Save time for a pre-walk discussion when you can ask the children what they



# Help Mother and Father Prairie Dog Find Their Pups

This is a prairie dog home.  
Draw a line from the father and mother prairie dog to their family.



think soil is made of, what it feels like, what colors it might be, and how soils might differ. Show them how to use a hand lens or magnifier.

For your soil walk, visit several places where different kinds of soil can be found. Try such areas as a pitcher's mound, the bottom of a slide, under a tree, the edge of a field, or under a rotten log. At each spot, have the children look closely at the soil with the magnifying glass. They might find bits of plants and animals, clay, rocks, and sand. Look for leaves, sticks, roots, and remains of animals such as insects and worms. Students can pick up, feel, and smell each kind of soil and look for different colored soils. Make sure that your students return the soil to the place where they found it to prevent erosion.

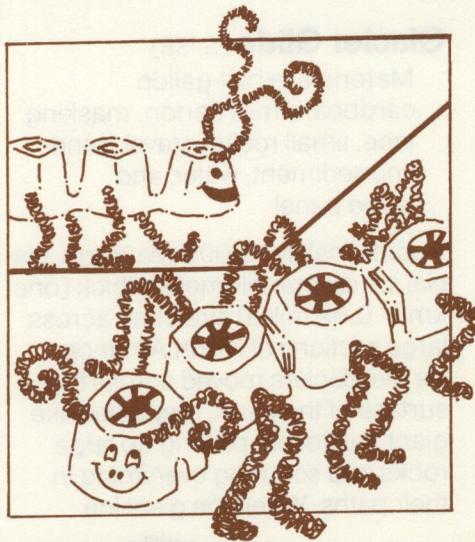


**Down-to-Earth Art (A)**

★ **Soil Collage**

Materials: soil, glue, markers, and heavy paper or cardboard

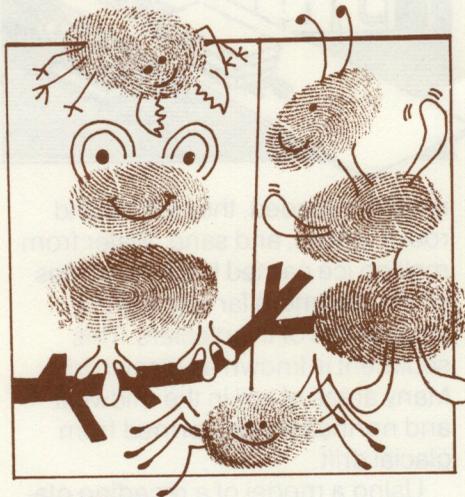
Let your children use real soil to make their own pictures. Begin by talking about soil's importance to plants. Name some plants you see every day (trees in the school yard, house plants, wildflowers, grass, and plants that give us food). How is soil important to these plants? Let each child sketch a plant showing the roots beneath the ground's surface. Trace over the roots with a brightly colored marker. Spread glue over the soil area (omitting the roots) and sprinkle soil over the glue. Wait for the glue to dry and shake off the excess.



★ **Egg Carton Animals**

Materials: egg cartons (broken apart in lengths of two to six cups), pipe cleaners, markers, seeds, glue, and scrap paper

After your children have studied the animals on the 16-picture poster and the soil ecosystem transparency, let them make their own soil creatures using the materials suggested above. Earthworms, millipedes, and ants are easy to make with egg cartons.



★ **Soil Prints**

Materials: clay, scrap paper, felt tipped pens, paper, and thumbs

Your children can make soil prints by pressing the tips, sides, and pads of their thumbs in moist clay soil, then onto paper. Add a few straight lines, curves, dots, and triangles of scrap paper to turn their thumbprints into amazing soil animals.

**OBJECTIVE:** To help students understand how soils are formed and the characteristics of different types of soil.

**Shake-a-Jar (S)**

Materials: quart jars, newspapers, soil, water, and alum (purchase in drugstore)

Soil is composed of a variety of materials. To compare the relative amount of these materials in different soil types, have your students take soil samples from a garden, field, empty lot, woods, and other places. Keeping samples separate, spread the soil on a newspaper, crush any lumps, and remove large rocks, sticks, or trash.



For each soil type, fill a quart jar one-quarter full with soil, label, and add water until the jar is three-quarters full. Add one tablespoon of alum, close the lid, and shake hard. Let the jar stand for several minutes.

Students will see that the mixture separates into layers. The larger particles — coarse sand or rocks — settle to bottom of the jar. The finer particles of silt and clay will form the next layer. The material left floating on top of the water is called organic matter. Organic matter is made up of dead leaves, twigs, stems, and parts of animals and plants. The more organic matter in soil, the richer it is.

Ask your students such questions as: How long did it take for all the particles to settle? Did some soil samples take longer to separate than others? If so, what do you think caused