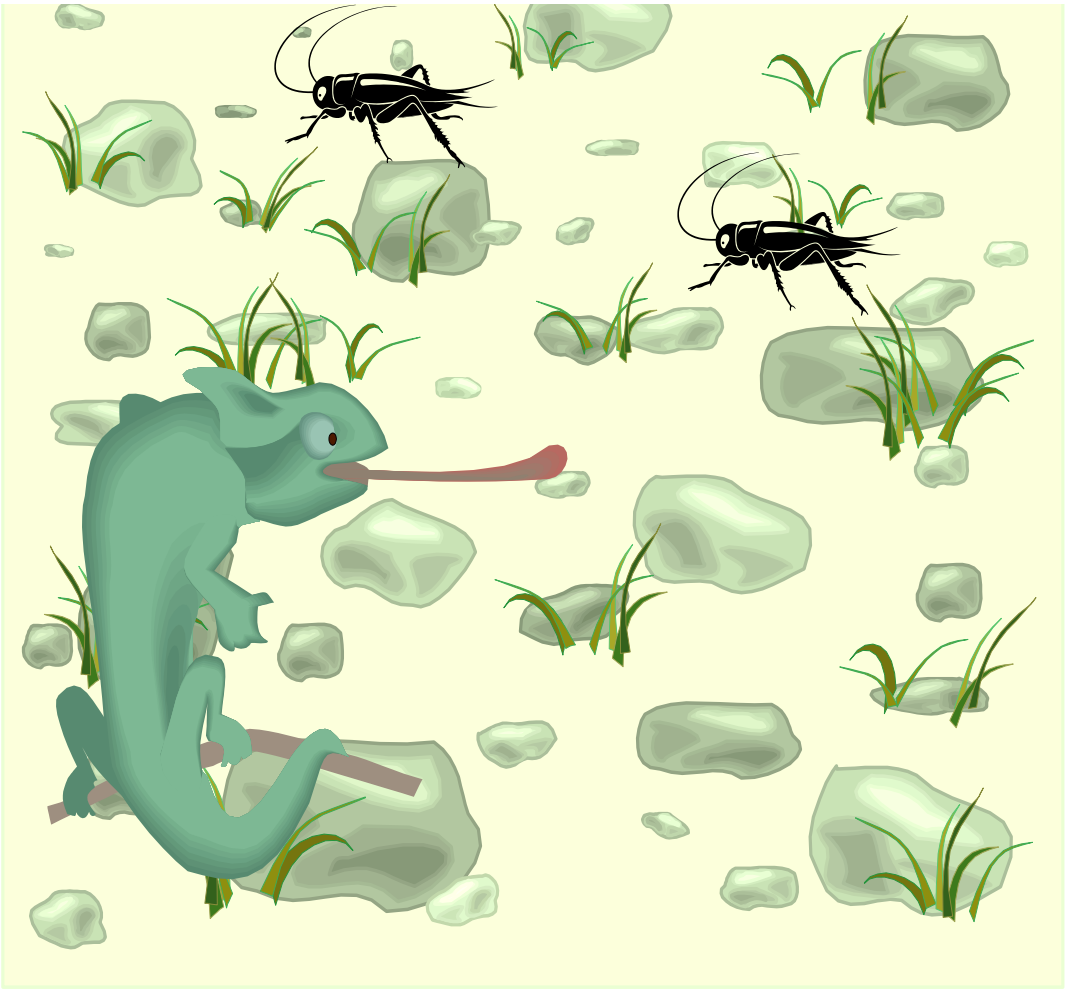
Kit #72

Food Chains and Webs



Teacher Notes

Teacher - _____

Teacher Notes

Activity 1: What is soil? (p. 15)

Students take a closer look at soil. They learn that soil is composed of both grains of rock and bits of decaying organic matter. They also set up terrariums to be used throughout most of the activities.

Vocabulary

decay – break down
sand – largest soil particle
silt – medium sized soil particle
clay – smallest sized soil particle
soil – top layer of the Earth's surface made of non-living and once-living material
humus – organic (once living) matter
terrarium – a closed container that provides living space for plants and animals

Teacher Notes

Activity 2: How does soil type affect plant growth? (p. 23)

Students set up an experiment to test the effects of growing plants in soil versus sand. They plant three pots with ryegrass seeds – one in soil, one in sand and one in a mixture of the two.

Vocabulary

conclusion – a decision reached after looking at data
control group – the objects that do not experience the test
experiment – a test carried out under careful conditions to learn whether an idea is true or not true
experimental group – the objects that experience the tested variable
nutrients – the building blocks of food
variable – a factor or condition being tested

Activity 3: Why are plants called "producers"? (p. 31)

Students set up an experiment to determine the effect of depriving green plants of sunlight. One set of plants is grown in sunlight, while another set is grown in darkness. After a week, students compare their growth and condition and draw conclusions about sunlight and plant growth. Students learn that green plants are producers – the source of food energy on Earth.

Vocabulary
chlorophyll – the green substance found in plants
producer – a living thing that can store energy in food, make its own food

Teacher Notes

Assessment Suggestions:

Write informative/ explanatory texts to examine a topic and convey ideas and information clearly.

Act. 1 What is Soil?
Act. 2 How does soil type affect plant growth?
Act. 3 Why are plants called producers?

Activity 4: What do you observe about crickets? (p. 39)

Students are introduced to crickets. They observe the animals, draw them and make initial notes on their behavior.

Vocabulary

abdomen – the third body part of an insect
antennae – "feelers" found on the head of an insect
cricket – an insect with antennae, wings and legs for jumping
community – a group of populations in a geographical area
ecosystem – a group of populations interacting with each other and their environment (within a geographical area)
environment: the non-living surroundings
head – the first body part of an insect
ovipositor – a long thin tube used for laying eggs (female)
population – living things of the same kind living in the same place
thorax – the second (middle) body part of an insect

Teacher Notes

Activity 5: What do you observe about anoles? (p. 47)

Students are introduced to anoles. They observe the animals, draw them and make initial notes on their behavior.

Vocabulary
American chameleon – lizard also called a Green Anole
Green anole – lizard native to the southeastern U.S.

Teacher Notes

Activity 6: What do you observe about the earthworm? (p. 53)

Students are introduced to the earthworm. They observe the animals, draw them and make initial notes on their behavior.

Vocabulary
bristles – stiff hairs
clitellum – a thick band around an earthworm's body
earthworm – a terrestrial, segmented worm

Teacher Notes

Teacher Notes

Activity 7: How do animals behave in the terrarium? (p. 59)

Students begin a series of terrarium observations to learn more about the behavior of their animals. They keep notes on where the animals are in the terrarium and what they are doing.

Vocabulary

camouflage – to hide by use of special coloring or shapes
consumer – a living thing that gets its energy by eating another living thing
primary consumer – a living thing that eats plants for energy
secondary consumer – a living thing that eats a living thing that eats plants

Activity 8: What do crickets eat? (p. 67)

Students set up experiments to discover what crickets eat. They observe that crickets eat plants and learn that animals that eat plants are called primary consumers. Students will have seen anoles eat crickets by this time and they will learn that animals that eat other animals are called secondary consumers.

Vocabulary

consumer – a living thing that gets its energy by eating another living thing
food chain – a sequence of living things based upon how they get their energy that starts with a producer
primary consumer - a living thing that eats plants (producers) for energy

Teacher Notes

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Activity 9: Why are earthworms called “decomposers”? (p. 73)

Students learn that earthworms play a role in decomposition by ingesting and breaking down dead plant and animal matter in soil. The students then discuss how, after passing through the earthworm’s digestive system, the organic material is ready for decomposers such as bacteria and fungi. Decomposers bread down the organic matter into nutrients necessary for plant growth.

Vocabulary

casting – solid waste products from earthworms

decompose – to break down

decomposer – small organisms that break down organic matter smaller and smaller parts (nutrients)

Assessment Suggestions:

Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

Act. 4, 5, 6 What do you observe …
Act. 7 How do the animals behave in the terrarium?
Act. 8 What do crickets eat?
Act. 9 Why are earthworms called decomposers?

Activity 10: How do you draw a food chain that includes an owl? (p. 81)

Students are given “mystery pellets” to study. After examining them closely and offering ideas about what they might be, they dissect them and discover that they contain the tiny bones of rodents. They learn that these pellets are regurgitated by owls after they eat rodents. Owls are considered tertiary consumers because they eat secondary consumers.

Vocabulary
dissect – to take apart
pellet – a small, rounded, solid package of a substance

Teacher Notes

Activity 11: How can you compare our food chain game to a real food chain? (p. 89)

Students reinforce their understanding of the food chain concepts learned in the activities by playing a game of food-chain tag. Taking on the roles of crickets, anoles and owls, they learn the terms predator and prey, and decide from their own experience what characteristics help both predator and prey animals to be successful.

Vocabulary

predator – an animal that hunts and eats other animals

prey – an animal that is hunted by other animals

Teacher Notes

Teacher Notes

Activity 12: How does a food chain compare to a food web? (p. 97)

Students discover that most plants and animals are actually connected in complex food webs rather than linear food chains. They create a food web using data about a variety of different organisms – from producers to tertiary consumers – and discuss the possible advantages of this complex relationship in nature.

Vocabulary

food web – all of the interacting food chains in an ecosystem

Assessment Suggestions:

Describe the relationship between scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Act. 10 How do you draw a food chain …
Act. 11 How can you compare our food chain game …
Act. 12 How does a food chain compare to a food web?

Assessment Suggestions:
Summative

Delta

Assessments TG 103 – 108

Other Options

Project: Ask students to research and create a food chain using "Food Chain Stackers". (see teacher resource webpage, Gr. 3 – Food Chains and Webs)

Have the students explain their project by writing explanatory text using specific terms and guidelines.

Use Food Chain Stackers to share a food chain with the students and have the students write explanatory text using specific terms.

Give students two simple food chains to compare and contrast using specific terms and guidelines.