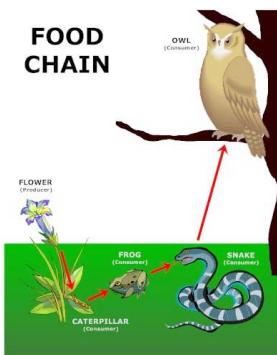
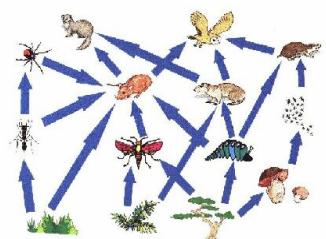


Notes Log: Identifying Main Ideas: Science Sample 1

Topic/Title: Energy in an Ecosystem	Pages: 280-284
Main Ideas	Notes
Heterotrophs must eat autotrophs to obtain energy.	<ul style="list-style-type: none"> Cannot make own food Animals and fungi
Autotrophs make their own food through photosynthesis.	<ul style="list-style-type: none"> Plants Convert sunlight to energy and store it in molecules that can be broken down
Organisms are classified by their energy roles in the ecosystem.	<ul style="list-style-type: none"> Producers <ul style="list-style-type: none"> Autotrophs Produce and store food (energy) Grasses, shrubs, and trees Consumers <ul style="list-style-type: none"> Heterotrophs Obtain energy by consuming other organisms Herbivores, carnivores, and omnivores Decomposers <ul style="list-style-type: none"> Heterotrophs Obtain energy by breaking down wastes and the remains of dead organisms Small molecules are returned to the environment Mold and bacteria
Food chains describe how energy flows from producers to consumers.	 <p>FOOD CHAIN</p> <p>The diagram illustrates a simple food chain with the following components and energy flow:</p> <ul style="list-style-type: none"> PRODUCER: FLOWER (Producers) PRIMARY CONSUMER: CATERPILLAR (Consumer) SECONDARY CONSUMER: FROG (Consumer) TERtiARY CONSUMER: SNAKE (Consumer) QUATERNARY CONSUMER: OWL (Consumer) <p>Arrows indicate the direction of energy flow from the producer through the primary, secondary, and tertiary consumers to the owl.</p>
Food webs show overlapping food chains.	 <p>FOOD WEB</p> <p>The diagram illustrates a complex food web with multiple overlapping food chains, showing the interconnectedness of various organisms in an ecosystem:</p> <ul style="list-style-type: none"> PRODUCERS: Grass, Bush, Tree, and Fungus. PRIMARY CONSUMERS: Small Mammals, Insects, and Birds. SECONDARY CONSUMERS: Larger Mammals, Snakes, and Various Birds. TERtiARY CONSUMERS: Owls and Other Predators. <p>Blue arrows indicate the direction of energy flow between different organisms, showing how energy can enter the system at multiple points and be transferred through various pathways.</p>

Log continued on the next page.

Main Idea of Section:

Energy from the sun is transferred from producers to consumers and decomposers.

Summary

Science TEKS

Grade 8

(11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to:

(A) describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, fresh water, and terrestrial ecosystems.

This example comes from Grade 8. TEKS can be found in Grades 6 and 7, where students discuss other characteristics of ecosystems.

SOURCE: TEA, 2009.

Notes Log: Identifying Main Ideas: Science Sample 2

Topic/Title: What is a Tropical Rainforest?	Pages: 1–3
Main Ideas Tropical rainforests are found near the equator.	Notes <ul style="list-style-type: none"> • Tropical rainforests are mostly found between the Tropic of Cancer and the Tropic of Capricorn • The largest rainforests are found in: <ul style="list-style-type: none"> – Brazil (South America)—the Amazon is the largest tropical rainforest, 2/3 the size of the U.S. – The Democratic Republic of Congo (Africa) – Indonesia (islands near the Indian Ocean) • Other tropical rainforests found in: Southeast Asia, Hawaii, and Caribbean islands
Tropical rainforests are called “rainforests” because of the rainfall they receive.	<ul style="list-style-type: none"> • Tropical rainforests see 160–300 inches of rain per year • The city of Los Angeles sees 10–20 inches of rain per year • Tropical rainforests have a year-round temperature of 75–80 degrees
Tropical rainforests have hundreds of different species that live in four layers.	<ul style="list-style-type: none"> • Tropical rainforests are unique because they are home to hundreds of different plant and animal species. • The incredible number of species make tropical rainforests different from forests in North America. • Four layers: <ul style="list-style-type: none"> – Emergent trees: the few trees that poke out to reach the sun – Canopy: most of the plant growth and animals are here – Understory: young trees and shrubs – Forest floor: has very little sunlight and a thin carpet of wet, rotting leaves
Plants and animals of the rainforest are interdependent.	<ul style="list-style-type: none"> • Interdependent = depend on each other for survival • If one type of plant or animal becomes extinct, other plants and animals are also in danger of extinction
Rainforests recycle everything.	<ul style="list-style-type: none"> • When leaves, flowers, or an animal dies on the forest floor, they decay and are recycled back into the soil and roots • Roots are shallow to collect all of the nutrients from the decay • Rain is recycled as water evaporates, forms clouds, and rains again onto the forest
Rainforests are essential to everyone on Earth.	<ul style="list-style-type: none"> • Rainforests help control the world’s climate • Many medicines come from plants that grow in tropical rainforests • Logging and gold mining threaten to destroy the rainforest

Log continues on the next page.

People live in the rainforest in a sustainable manner.	<ul style="list-style-type: none">• Indigenous people have lived in the rainforest for thousands of years and use it in a manner that does not destroy the rainforest.• Recently, many people have moved to the rainforest and do not use the resources carefully
Rainforests cannot grow back once they have been destroyed.	<ul style="list-style-type: none">• Plants and animals that are interdependent cannot rebuild their community• Rainforests are 70–100 million years old and have species found nowhere else on Earth
<p>Main Idea of Section: It is essential that we protect our tropical rainforests.</p>	
<p>Summary</p>	

Science TEKS

Grade 7:

(10) Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to:

(B) describe how biodiversity contributes to the sustainability of an ecosystem;

SOURCE: TEA, 2009.