

Main Topic: Biomes

Learning Objectives/Outcomes:

Topic: Biomes – large geographic areas with similar ecosystems and climate (temperature and precipitation).

<p>Ideas: <u>Tundra</u> What is the tundra sometimes referred to as? - A cold desert.</p> <p>What is the average precipitation in the tundra? - 25 cm/yr.</p> <p>What is the average temperature in the tundra? - -12°C.</p> <p>What is permafrost? - A layer of permanently frozen soil typical of the tundra.</p> <p>What kinds of plants grown in the tundra? - Low growing species of lichens, mosses, and grasses all adapted to drought and cold.</p>	<p>Ideas: Taiga What is the world's largest biome? - The taiga.</p> <p>What is the average precipitation in the taiga? - 60 cm/yr.</p> <p>What is the average temperature in the taiga? - 0°C.</p> <p>What kinds of trees grow in the taiga? - Cone-bearing evergreen trees.</p> <p>What kinds of plants inhabit the forest floor? - Lichens and mosses.</p>	<p>Ideas: <u>Temperate Deciduous Forest</u> What is this biome known for? - For having four distinct seasons.</p> <p>What temperature is reached there in the summer? - 30°C.</p> <p>What is the low temperature reached in the winter? - -30°C.</p> <p>What is the average temperature in this biome? - 10°C.</p> <p>What is the average precipitation in this biome? - 100 cm/yr.</p>	<p>Ideas: <u>Rainforest</u> What is the defining characteristic of rainforests? - The significant amount of rain they receive.</p> <p>What are the two types of rainforests? - Temperate and tropical.</p> <p>How do temperate rainforests differ from tropical rainforests? - Temperate rainforests are cooler and dryer than tropical rainforests.</p> <p>Describe the climate of temperate rainforests. - They have an average temperature of 10°C and receive around 300 cm of rain/year.</p>	<p>Ideas: <u>Desert</u> How much rainfall do deserts receive each year? - Less than 25 cm/yr.</p> <p>What adaptations have plants developed to live in the desert? - Plants are tough and wiry with small or no leaves, water resistant cuticles, and spines to deter consumers.</p>	<p>Ideas: <u>Grassland</u> How much rainfall do grasslands receive? - 25 – 75 cm/yr.</p> <p>What prevents forests from growing where grasslands are? - Dry seasons prevent forest growth and allow grasses to prevail.</p> <p>What is the difference between tropical and temperate grassland climates? - The tropical climate is warm and humid while the temperate climate has cold winters.</p> <p>What is the yearly temperature range in the grassland? - 20°C - 30°C.</p>	<p>Ideas: <u>Aquatic</u> What determined whether an aquatic biome is freshwater or marine? - The salinity, which is the amount of salt in the water.</p> <p>What traits help to further classify aquatic biomes? - The amount of sunlight and oxygen present.</p> <p>Describe freshwater ecosystems. - They include flowing water habitats (rivers, creeks) and standing water habitats (lakes, ponds, wetlands).</p>
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<p>Which organisms inhabit the tundra during the summer?</p> <ul style="list-style-type: none"> - Many insects and migratory bird. 	<p>Why do these kinds of plants grow on the forest floor?</p> <ul style="list-style-type: none"> - The dense forest overhead limits the variety of plant life, since it blocks out sunlight. 	<p>What kinds of trees live in the deciduous forest?</p> <ul style="list-style-type: none"> - Deciduous trees, which drop their leaves every fall. 	<p>Describe the climate of tropical rainforests.</p> <ul style="list-style-type: none"> - They have a fairly constant temperature around 25°C all year and can get up to 600 cm of rain/year. 	<p>What adaptations have desert animals developed?</p> <ul style="list-style-type: none"> - Many are nocturnal or stay in the shade or under the ground to stay cool. They get most of their water from food, and they concentrate their urine to conserve fluids. 	<p>What kinds of animals live in the grassland?</p> <ul style="list-style-type: none"> - Many grazing animals such as buffalo, antelope, and zebra live there and are preyed on by predators such as lions and coyotes. - Many small mammals and birds may also live there. 	<p>How much of the earth's water is freshwater?</p> <ul style="list-style-type: none"> - Less than 3%. Of that, half is frozen.
<p>Which organisms stay in the tundra year round?</p> <ul style="list-style-type: none"> - Caribou, lemmings, artic hare, fox, musk ox, and many small rodents. 	<p>What kinds of animals live in the taiga?</p> <ul style="list-style-type: none"> - Many carnivores such as bears, wolves, and lynx, which fed on moose, snowshoe hare, and shrews. 	<p>What kinds of plants grow on the shady forest floor?</p> <ul style="list-style-type: none"> - Shrubs, ferns, herbs, and mosses. <p>What kind of wildlife live in the temperate deciduous forest?</p> <ul style="list-style-type: none"> - Many kinds of birds, insects, amphibian, reptiles, raccoons, squirrels, skunks, wood mice, deer, bears, bobcats, cougars, wolves, and coyotes. 	<p>List and define the layers of the rainforest.</p> <ul style="list-style-type: none"> - Emergent layer has trees that protrude out over the rest. - Canopy consists of tall overlapping trees that shade the rest of the forest. - Understory has small trees and shrubs which receive little sunlight and compete with canopy tree roots for nutrients. - Forest Floor is covered with detritus, dead or decaying 			<p>What life do freshwater ecosystems support?</p> <ul style="list-style-type: none"> - Fish, amphibians, crustaceans, plants, and microbes. <p>What distinguishes marine ecosystems from freshwater ecosystems?</p> <ul style="list-style-type: none"> - Marine ecosystems have a high salt content. <p>How much of the earth's oxygen is supplied by marine ecosystems?</p> <ul style="list-style-type: none"> - Nearly half of it. <p>What are some examples of marine ecosystems?</p> <ul style="list-style-type: none"> - Oceans, seas, coastal inlets, tide

			<p>organic matter. Moss, ferns, and fungi may live there.</p> <p>Are rainforests highly biodiverse? - Yes.</p> <p>What percent of plant and animal species is the rainforest estimated to contain? - 50%.</p> <p>What kinds of animals can be found in the rainforest? -Just about every type of animal can be found there: insects, amphibians, birds, reptiles, and mammals.</p>			<p>pools, and estuaries.</p>
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Key Vocabulary

Biome: a large geographic area with similar ecosystems and climate.

Permafrost: a layer of frozen soil that is characteristic of the tundra.

Emergent Layer: the uppermost layer of the rainforest, made up of trees that protrude over the other treetops.

Canopy: the rainforest layer directly below the emergent layer, consisting of tall overlapping trees that cover the rest of the forest.

Understory: the rainforest layer under the canopy, containing small trees and shrubs that receive little sunlight and compete with the canopy tree roots for nutrients.

Forest Floor: The bottom layer of the rainforest, covered with dead or decaying matter known as detritus. Fungi, moss, and ferns may also live here.

Pictures

