1.1

* Ecosystems support life
	+ Living things depend on the environment
		- **Ecology** – the scientific study of how organisms interact with their environment and all the other organisms that live in that environment
		- **Ecosystem** – describes a particular environment and all the living things that are supported by it
		- **Biotic factors** – living parts of an ecosystem
		- **Abiotic factors** – nonliving parts of an ecosystem (oxygen, soil, water, sunlight)
	+ Biotic factors interact with an ecosystem
		- Living things depend on an ecosystem for food, air, and water for survival
	+ Many abiotic factors affect ecosystems
		- **Temperature** – affects types of plants and animals that can survive in an area
		- **Light** – influences the number and types of plants in an ecosystem
		- **Soil** – organisms in soil break down the remains of dead plants and animals
		- **Water** – water supports life and life processes

1.2

* Matter cycles through ecosystems
	+ All ecosystems need certain materials
		- **Cycle** – a series of events that happens over and over again
	+ **Water cycle** – the movement of water through the environment
	+ Carbon cycles through ecosystems
		- **Carbon cycle** – the process of carbon moving through Earth’s ecosystems
			* Carbon is found in all living things
			* In water ecosystems, carbon dioxide is dissolved in the water which allows various types of organisms to survive there
	+ Nitrogen cycles through ecosystems
		- **Nitrogen cycle** – the process of nitrogen moving through Earth’s ecosystems
			* Nitrogen is an important element to life

1.3

* Energy flows through ecosystems
	+ Living things capture and release energy
		- **Producer** – an organisms that captures energy and stores it in food as chemical energy
			* They make energy available to all the other living parts of an ecosystem
			* Most energy enters the ecosystem through photosynthesis
		- **Consumer** – organisms that get their energy by eating, or consuming, other organisms
			* Classified by their position in a feeding relationship
			* Primary consumer, secondary consumer
		- **Decomposers** – organisms that break down dead plant and animal matter into simpler compounds
	+ Models help explain feeding relationships
		- **Food chain** – describes the feeding relationship between a producer and a single chain of consumers in an ecosystem
		- **Food web** – a model of the feeding relationships between many different consumers and producers in an ecosystem
	+ Available energy decreases as it moves through an ecosystem
		- **Energy pyramid** – a model that shows the amount of energy available at each feeding level of an ecosystem
			* First level includes producers
			* Second level is primary consumers
			* Third level is secondary consumers

1.4

* Biomes contain many ecosystems
	+ Regions of Earth are classified into biomes
		- **Biome** – a region of Earth with similar climate and types of plants and animals
			* There are 6 major land biomes
			* Taiga
			* Tundra
			* Desert
			* Grassland
			* Temperate Forest
			* Tropical Forest
	+ Water covers most of Earth’s surface and creates separate biomes
		- Freshwater biomes
			* Lakes and ponds
			* Estuary – the lower end of a river that feeds into the ocean, where fresh water and salt water mix
		- Marine biomes
			* Coastal
			* Open ocean
			* Deep ocean