

Quiz Date: \_\_\_\_\_

Name: \_\_\_\_\_

# Topic 1: Properties of Matter

## Lessons 1-3

### Lesson 1: Observe Matter

**observe** – to use your senses to gather information

**measure** – to compare something to a standard unit

**solubility** – the property of a substance that tells how well it dissolves in another material

**describe** – to tell about the properties of an object

**matter** - is anything that has mass and occupies space

**states of matter** – solids, liquids, and gases

**properties** - observations using the five senses or can be measured without changing the matter.

**conductors** - materials that electricity can flow through easily

**insulators** – materials that electricity cannot flow through easily

### Lesson 2: Model Matter

**atom** – the smallest part of an element that has the properties of the element

**atomic theory** – the idea that everything is made of small particles

**compound** – a type of matter made of two or more elements

**molecule** – the smallest particle of a compound that has the properties of the compound

**conclude** – to make a statement with data and facts

### Lesson 3: Properties of Matter

**temperature** – a measure of how fast the particles of matter are moving

**mass** – the amount of matter in an object

**volume** – the amount of space an object takes up

**organize** – to arrange something to make it easier to understand

Quiz Date: \_\_\_\_\_

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## Topic 2: Changes in Matter

### Lessons 1-2

#### Lesson 1: States of Matter

**solid** – matter with definite shape and volume

**liquid** - matter with a definite mass and volume, but no definite shape.

**gas** - matter that does not have a definite shape or volume

**differentiate** - to identify the differences between two or more objects

**pollution** – any contamination of air, soil, water, and environment

**density** – the measure of how compact the mass in a substance or object is

#### Lesson 2: Physical Changes

**physical change** - a change in some properties of matter that does not change what the substance is made of

**establish** - to show an idea

**soluble** – capable of being dissolved in liquid

**particle** – tiny bits of matter than make up everything in the universe

## Topic 2: Changes in Matter

Quiz Date: \_\_\_\_\_

Lessons 3-4

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### Lesson 3: Chemical Changes

**chemical change** - a process in which a new kind of matter forms

**conservation of matter** - the scientific law that in any physical or chemical change, the total mass of the matter does not change

**chemical reaction** - the process in which one or more substances change into one or more different substances

**hypothesis** - an idea or explanation that you then test thoroughly through experimentation

**support** - to back up

### Lesson 4: Mixtures and Solutions

**mixture** - a substance where different materials are put together but each keeps its own properties

**solution** - a mixture in which the substances are evenly spread out and do not settle to the bottom of the container

**component** - a part

**durable** - able to exist for a very long time without much wear

Quiz Date: \_\_\_\_\_

## Force and Motion

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### Lessons 1-4

**force** - a push or pull that acts on an object; measured in units called Newtons (N).

**contact force** - a force that requires two pieces of matter to touch (ex: when you push or pull something)

**non-contact force** - a force that acts at a distance (ex: gravity, magnetism, electricity)

**friction** - the force that results when two materials rub against each other or when their contact prevents sliding

**gravity** - the force that tries to pull two objects together; the larger the mass of the object, the stronger its gravitational pull.

**support** - to back up

**acceleration** - the rate at which the speed or the direction of motion changes over time.  
(speeding up, slowing down, or changing direction)

**inertia** - the tendency of an object to resist any change in motion; objects with more mass have more inertia than objects with less mass.

**balanced forces** – forces that cancel each other out when acting together on a single object

**unbalanced forces** – forces that do not cancel each other out when acting together on a single object

**speed** – the distance traveled in an amount of time

**potential** – stored energy

**kinetic** – energy of motion

## **Newton's Laws of Motion**

**Newton's First Law:** An object in motion will stay in motion, and an object at rest will stay at rest unless acted upon by an unbalanced force. (law of inertia)

**Newton's Second Law:** Acceleration, mass, and force are related. The force action on an object can cause the object to speed up, slow down, or change direction. (force = mass x acceleration)

**Newton's Third Law:** When one object exerts a force on a second object, the second object exerts a force on the first. These forces are equal in strength and opposite in direction. (law of action and reaction)

# Topic 3 Earth's Systems

Quiz Date: \_\_\_\_\_

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## Earth's Systems

**geosphere** – the earth system that includes rocks, soil, sediments, and earth's core and mantle

**lithosphere** – a part of the geosphere that contains earth's crust and outer, rigid part of the mantle

**biosphere** – the earth system that includes all living things

**atmosphere** – the layer of gases surrounding earth

**hydrosphere** – the earth system that includes all water

**greenhouse effect**- the warming of earth's atmosphere, land, and water caused by trapped gases in earth's atmosphere

**interdependent** – a relationship in which two or more things depend upon the other(s)

**system** – a collection of parts that work together

**distinguish** - make a clear difference between two or more things

Quiz Date: \_\_\_\_\_ **Topic 5: Human Impacts on Earth's Systems** # \_\_\_\_\_  
**Lessons 1-2**

Lesson 1: Earth's Natural Resources

**natural resource** - a material supplied by nature that is used by humans and other organisms

**nonrenewable resource** - a resource that is replenished at a slower rate than it is used

**renewable resource** - material made by nature at least as quickly as people use it

**mineral** - a naturally occurring, nonliving substance

**rock** - a natural substance made from one or more minerals

**classify** - to organize into groups based on a system

**efficient** - able to produce the effect wanted without wasting time or energy

Lesson 2: Earth's Energy Resources

**natural gas** - a mixture of methane and other gases formed underground and used for energy

**hydroelectric energy** - energy produced by moving water

**transform** - to change in form

**fossil fuels** - include petroleum (oil), coal, and natural gas. These materials are called fossil fuels because, like fossils, they are the remains of organisms that lived long ago.

# Topic 5: Human Impacts on Earth's Systems

## Lessons 3-4

Quiz Date: \_\_\_\_\_

# \_\_\_\_\_

### Lesson 3: Human Activity and Earth's Systems

**pollution** - the presences of harmful substances in the environment

**effect** - a change that happens because of some kind of action

**toxic** - containing poisonous material

**atmosphere** – the air that surrounds earth

**geosphere** – the rock and soil of earth

**hydrosphere** – the water on earth and in the atmosphere

**biosphere** – the living things on earth: plants, animals, microorganisms, humans

**efficiency** – able to bring about desired result with little waste

**greenhouse emissions** – gases that are trapped inside earth's atmosphere and trap the sun's warmth, causing global warming. Common gases include carbon dioxide and methane.

### Lesson 4: Protection of Earth's Resources and Environments

**conservation** – the protection and care of forests, rivers, and other natural resources

**reduce** – using fewer resources

**reuse** - using resources multiple times previously used

**recycle** – using items to create new things

Quiz Date: \_\_\_\_\_

## Topic 6: Solar System Lessons 1-8

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### Lesson 1: Brightness of the Sun and Other Stars

**star** – a giant ball of hot, glowing matter

**apparent** – how something looks

**photosphere** – center layer of sun's atmosphere (closest to the sun)

**chromosphere** - middle layer of sun's atmosphere

**corona** – outer layer of sun's atmosphere (farthest away from the sun)

### Lesson 2: Inner Solar System

**solar system** - the planets, asteroids, and comets that orbit the sun, as well as the planets' moons

**inner planets** – the four rocky planets closest to the sun

**orbit** – the curved path of an object around a star, a planet, or a moon

**moon** – a large, round piece of rock and ice that revolves around a planet

**satellite** - an object that orbits around a planet

### Lesson 3: Outer Solar System

**outer planet** – the four large planets farthest from the sun that are made of ice and gases

**asteroid** – a chunk of rock in space that orbits the sun

**comet** – chunk of rock, dust, and ice with stretched-out orbits around the sun

Quiz Date: \_\_\_\_\_

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## Topic 7: Patterns in Space

### Lessons 1-3

#### Lesson 1: Earth's Gravitational Forces

**gravity** – a force of attraction between two objects

**exert** – to put forth strength or effort

**astronomy** – the study of the stars, planets, and space

#### Lesson 2: Earth's Movements in Space

**axis** – an imaginary line that goes through the center of an object

**rotation** – the spinning of an object around its axis

**revolution** – the movement of one object around another object

**pattern** – objects or events that occur in the same order or manner

#### Lesson 3: Patterns Over Time

**shadow** – a dark area or shape made by an object or organism blocking a source of light

**constellation** - a group of stars that appear to form a shape or picture

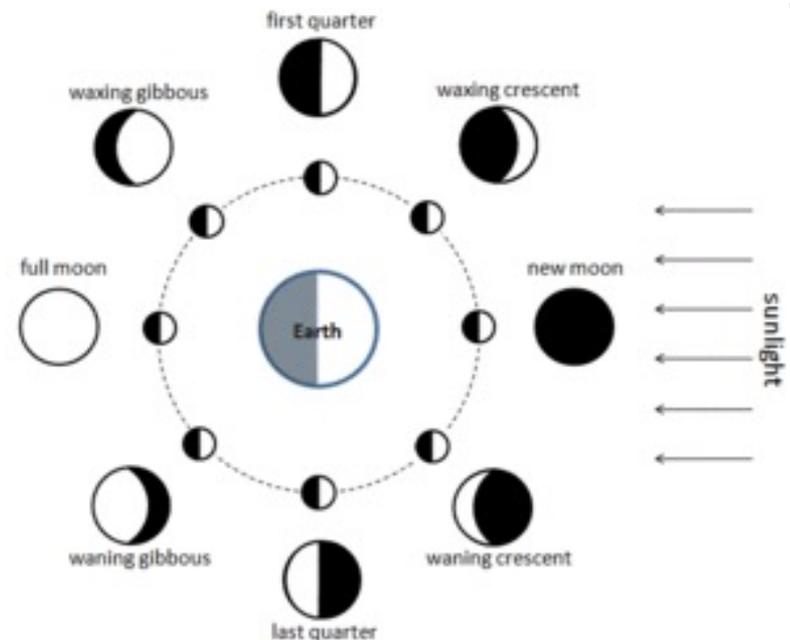
**related** – connected

Quiz Date: \_\_\_\_\_

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# Moon Phase Vocabulary

- \***lunar cycle** – the time it takes the moon to revolve around a planet
- \***wax** – when the lit portion of the moon grows
- \***wane** – when the lit portion of the moon shrinks
- \***crescent** – when less than  $\frac{1}{2}$  of the visible moon is lit
- \***gibbous** – when more than  $\frac{1}{2}$  of the visible moon is lit
- \***first quarter moon** – half of the moon visible is lit – occurs while the moon is still waxing
- \***last quarter moon** – half of the moon visible is lit – occurs while the moon is waning
- \***new moon** – none of the visible moon is lit
- \***full moon** – all of the visible moon is lit



Quiz Date: \_\_\_\_\_

## Topic 8: Energy in Food

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### Lessons 1-3

#### Lesson 1: Energy in Food

**herbivore** - an animal that eats only plants

**carnivore** - an animal that eats only other animals, or products of other animals

**omnivore** - an animal that eats both plants and other animals

#### Lesson 2: How Plants Make Food

**photosynthesis** - the process that plants use to make glucose using carbon dioxide, light, and water and producing oxygen

**chlorophyll** - the green substance in plant cells that absorbs light energy and helps the plant perform photosynthesis

**obtain** - to get

**stomata** - a tiny opening, or gap, used for gas exchange. This is generally on the underside of a leaf.

#### Lesson 3: How Animals Use Food

**endotherm** - an animal that uses energy from their body to keep their body at a steady temperature

**ectotherm** - an animal that depends on its environment to warm its body

**metabolism** - the chemical processes animals use to break down or build molecules

**maintain** - to keep in the same condition

Quiz Date: \_\_\_\_\_

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## Topic 9: Matter and Energy in Ecosystems

### Lessons 1-2

#### Lesson 1: Ecosystems

**ecosystem** - the living things and nonliving things in an area

**abiotic** - nonliving parts of an ecosystem

**biotic** - living parts of an ecosystem

**community** - all organisms living in an ecosystem

**interact** - to affect another organism and be affected by it

#### Lesson 2: Organisms Within Ecosystems

**producer** - an organism that can make its own nutrients, usually with energy from the sun

**decomposer** - an organism that breaks down the bodies of dead organisms

**microbe** - an organism that is too small to see

**consumer** - an organism that needs to eat other organisms to survive

**food chain** - a model that shows how matter and energy flow from one organism to another

**food web** - a model of the transfer of energy within a set of interconnected food chains

**transfer** - to change in form

Quiz Date: \_\_\_\_\_

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## Topic 9: Matter and Energy in Ecosystems

### Lessons 3-4 and review

#### Lesson 3: Change Within Ecosystems

**succession** - a series of changes in a community of an ecosystem

**competition** - when two or more organisms need the same limited resource to survive

**stable** - steady or unchanging

#### Lesson 4: Matter and Energy Transfer Within Ecosystems

**cycle** - a series of events or processes that repeats over and over

#### Words to review:

gas

liquid

solution

mixture

revolution

rotation

mass

compound