Physical Science What are the three kinds of particle inside an atom?	Physical Science Define: Atomic number
Physical Science What happens to electrons in a covalent bond?	Physical Science What happens to electrons in an ionic bond?
Physical Science Define: Density	Physical Science Define: Endothermic reaction and exothermic reaction
Physical Science Define: Valence shell and valence electron	Physical Science State Newton's First Law of Motion (Also known as "the law of inertia".)

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An element's atomic number is the number of protons found in that element's nucleus.

The atomic number for each element is found at the top of its entry on the Periodic Table, above the element's symbol.

Protons: positive particles found in nucleus.

Neutrons: neutral particles found in nucleus.

Electrons: negative particles found moving around outside of the nucleus.

In an ionic bond, electrons are transferred from one atom to another, making them both charged atoms called ions.

Both atoms should end up with a filled valence shell.

In a covalent bond, electrons are shared between two atoms.

Both atoms should end up with a filled valence shell.

Endothermic reactions absorb heat. Therefore, they get colder.

Exothermic reactions release heat. Therefore, they got hotter.

Density is a measurement of how much matter is in a certain amount of space.

Density = Mass / Volume

1st Law: An object at rest or in motion will stay at rest or in motion unless there is a force on the object.

"Inertia" is the tendency of objects to do just this: stay motionless, or stay moving, unless something forces them to change.

The valence shell is the outermost shell or energy level in an atom.

An atom's valance electrons are the electrons found in this outermost shell.

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Physical Science State Newton's Second Law of Motion	Physical Science State Newton's Third Law of Motion
Physical Science Define: Fission and fusion	Physical Science Define: Ion
Physical Science Define: Isotope	Physical Science Define: Kinetic energy
Physical Science Define: Potential energy	Physical Science Define: Products and reactants

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3rd Law: For every action, there is an equal and opposite reaction.

This means that when you push or pull on something, it always pushes or pulls back on you with the same strength.

2nd Law: The net (or total) force on an object is proportional to its mass and its acceleration.

$F = m * a$ $a = F / m$

An ion is an atom which has become electrically charged.

This happens when the atom gains or loses some electrons, so the number of electrons no longer matches the number of protons.

Fission and fusion are both types of nuclear reaction, involving the nucleus of an atom.

In fission, a big nucleus splits into two or more smaller nuclei.

In fusion, two small nuclei are smashed together and form a new, bigger nucleus.

Kinetic energy is the energy of moving objects. It is calculated with this formula:

$K = 1/2 * m * v^2$

m is the object's mass
v is the object's velocity

Isotopes are atoms of the same element that have different masses because they have different numbers of neutrons.

Example: All atoms of oxygen have 8 protons. Most also have 8 neutrons, for a total mass of 16. But some have 7 neutrons, for a mass of 15. Oxygen-16 and oxygen-15 are isotopes.

Products are the chemicals you end up with after a chemical reaction occurs.

Reactants are the chemicals you started with before the reaction.

Potential energy is stored in an object or system because of its location or shape. The energy is not in use, but might be released and used later.

For example, a ball at the top of a staircase has more potential energy than a ball at the bottom. Also, a stretched rubber band has more potential energy than an unstretched one.

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Physical Science Define: Chemical property and chemical change	Physical Science Define: Physical property and physical change
Physical Science Define: Compound	Physical Science What are the three ways that heat is transferred?
Physical Science What is the kinetic theory of matter?	Physical Science What is the difference between metals and nonmetals on the periodic table of elements?
Physical Science Define: Thermal energy	Physical Science Define: Friction

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Physical properties describe a substance or object. Examples include color, density, phase, shape.

Physical changes alter one or more physical properties without changing the type of substance. Examples include cutting, melting, and filtering.

Chemical properties describe the way a substance reacts with other substances. Ex: being flammable.

Chemical changes alter one substance into a completely new substance. Ex: burning paper creates ashes, carbon dioxide, and water vapor which were not there before.

Conduction: Transfer by direct physical contact of the hotter and cooler objects.

Convection: Transfer by the movement of fluids in a circular 'convection cell'.

Radiation: Transfer by electromagnetic waves like sunlight or infrared.

A compound is a substance in which atoms of more than one element are held together by chemical bonds.

Metal elements are usually grey, soft, and are good conductors of heat and electricity. Most elements are metals.

Nonmetal elements each have different properties. They are found only in a triangular section on the right side of the periodic table. (Hydrogen is also a nonmetal.)

The kinetic theory of matter says that matter is composed of tiny particles.

These particles are always moving and often collide with each other. They move faster when they are hot and slower when they are cold.

Friction is a force that resists the motion of objects.

For example, friction causes moving objects to gradually slow down and stop. It also allows us to walk and drive by "pushing off" against the ground without slipping.

Thermal energy is just a fancy name for "heat".

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Physical Science Define: Mixture and compound	Physical Science Define: Mass and volume
Physical Science What is the “Law of Conservation of Energy”?	Physical Science D
Physical Science E	Physical Science F
Physical Science G	Physical Science H

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Mass is the amount of matter in an object, based only on the number of particles that it contains.

Volume is the amount of space that an object takes up.

In a mixture, two different substances are jumbled together but can be separated again with some careful work. (Ex: Salt dissolved in water.)

In a compound, particles of two substances are chemically bonded to form new substances. They can't be easily separated. (Ex: Water, H_20.)

Answer D.

Energy can never be created or destroyed. It can only be changed from one form to another.

For example, when a ball is dropped it starts with potential energy because it's high up, but as it falls and speeds up, that energy changes into kinetic energy.

Answer F.

Answer E.

Answer H.

Answer G.

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