

Video: What is Matter

https://www.youtube.com/watch?v=ElchwUIIWa8&abchannel=CrashCourseKids



Matter

<u>Matter</u>: anything that has <u>mass</u> and takes up <u>space</u>

- Classification of matter
 - <u>Pure substance</u>: made up of <u>one type</u> of particle; <u>cannot be separated</u> by physical means
 - <u>Mixture</u>: made up of <u>two or more</u> pure substances; <u>can be separated</u> by physical means

Matter is either a <u>pure substance</u> or a <u>mixture</u>



Mixture

Mixtures can be classified as

- <u>Homogeneous</u> mixtures (solutions): mixed <u>uniformly</u>; cannot see their components
 - Example: <u>air</u> (nitrogen, oxygen, hydrogen), <u>steel</u> (iron and other elements), <u>coffee</u>





• <u>Heterogeneous</u> mixture: have <u>different components</u> that you

can see

• Example: granola bar, cereal

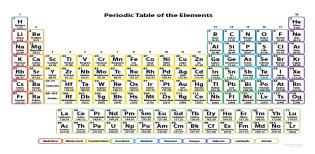




Pure Substances

Pure substances can be classified as

• <u>Elements</u>: made up of <u>one type of atom</u>; cannot be broken down into simpler substances (example: gold)



• <u>Compounds</u>: made up of <u>two or more elements</u>; can be broken down into simpler substances (example: sodium chloride)



Properties of Matter

Matter can be described by

- <u>Physical</u> properties: characteristics that can be <u>observed</u> or <u>measured</u> without changing is chemical identity (examples: <u>colour</u>, <u>texture</u>)
- <u>Chemical</u> properties: describe the ability of matter to <u>react with another substance</u> to form different substances (examples: <u>combustibility</u>, lack of reactivity)



Physical Properties		
Colour	The colour of the substance or material	
<u>Malleability</u>	The ability for metals to be hammered or rolled into a thin sheet	
<u>Texture</u>	The feel, appearance, or consistency of a surface or a substance.	
Viscosity	A measure of a fluid's resistance to flow (i.e., low viscosity flows easily)	
Conductivity	The ability to conduct/transmit heat, electricity, or sound	
State of matter	Solid, liquid, or gas	
Melting point	The temperature where a substance changes from solid to liquid	
Boiling Point	The temperature where a substance changes from liquid to gas	
<u>Hardness</u>	A description of how hard or soft a material is	
Solubility	The ability for a substance to be dissolved into a liquid	
<u>Ductility</u>	The ability of a material to have its shape changed without losing strength or breaking	

Chemical Properties		
Combustibility	How easily a substance bursts into flame	
Reactivity	The tendency for a substance to undergo a chemical reaction	



Physical Change

- A change to <u>physical properties</u> of a substance.
- They are usually <u>reversible</u>.

• E.g.: crushing a can, shredding paper, melting

an ice cube





Chemical Change

- A process in which one or more substances are altered into one or more new and different substances.
- A chemical reaction involving the <u>rearrangement</u> of atoms.
- Also known as a chemical reaction.
- E.g.: cooking an egg, metal rusting, a fire burning
- Signs of a chemical change:
 - Bubbling
 - Changes in colour
 - A new substance is formed
 - Release of heat and light
 - Change in odour





Video: Physical vs Chemical Change

https://www.youtube.com/watch?v=x49BtB5dOwg&abchannel=FreeSchool



Practice

Workbook page 47, 48, 50 (#9-21)

