

# Matter

Anything that **takes up space**  
and displays the properties of  
**mass and inertia**

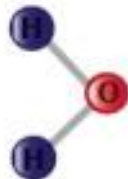
2 parts/components

## Composition

Components of a sample  
and their relative proportions

**Example:** Water/H<sub>2</sub>O

**Components:** Hydrogen and Oxygen  
[2 parts Hydrogen, 1 part Oxygen]



## Properties

Distinguishing qualities or  
attributes of a sample of  
matter

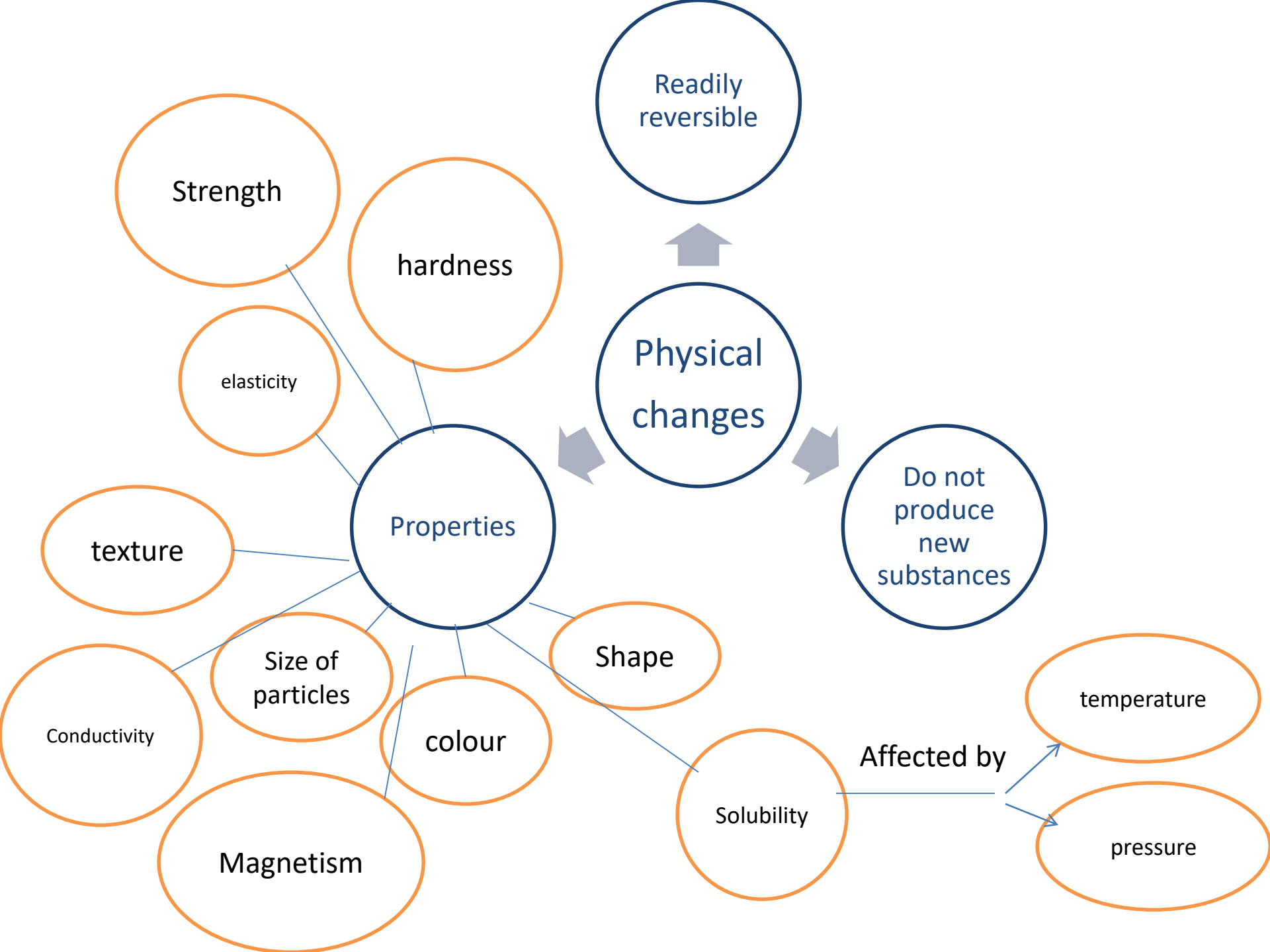
**Example:** banana

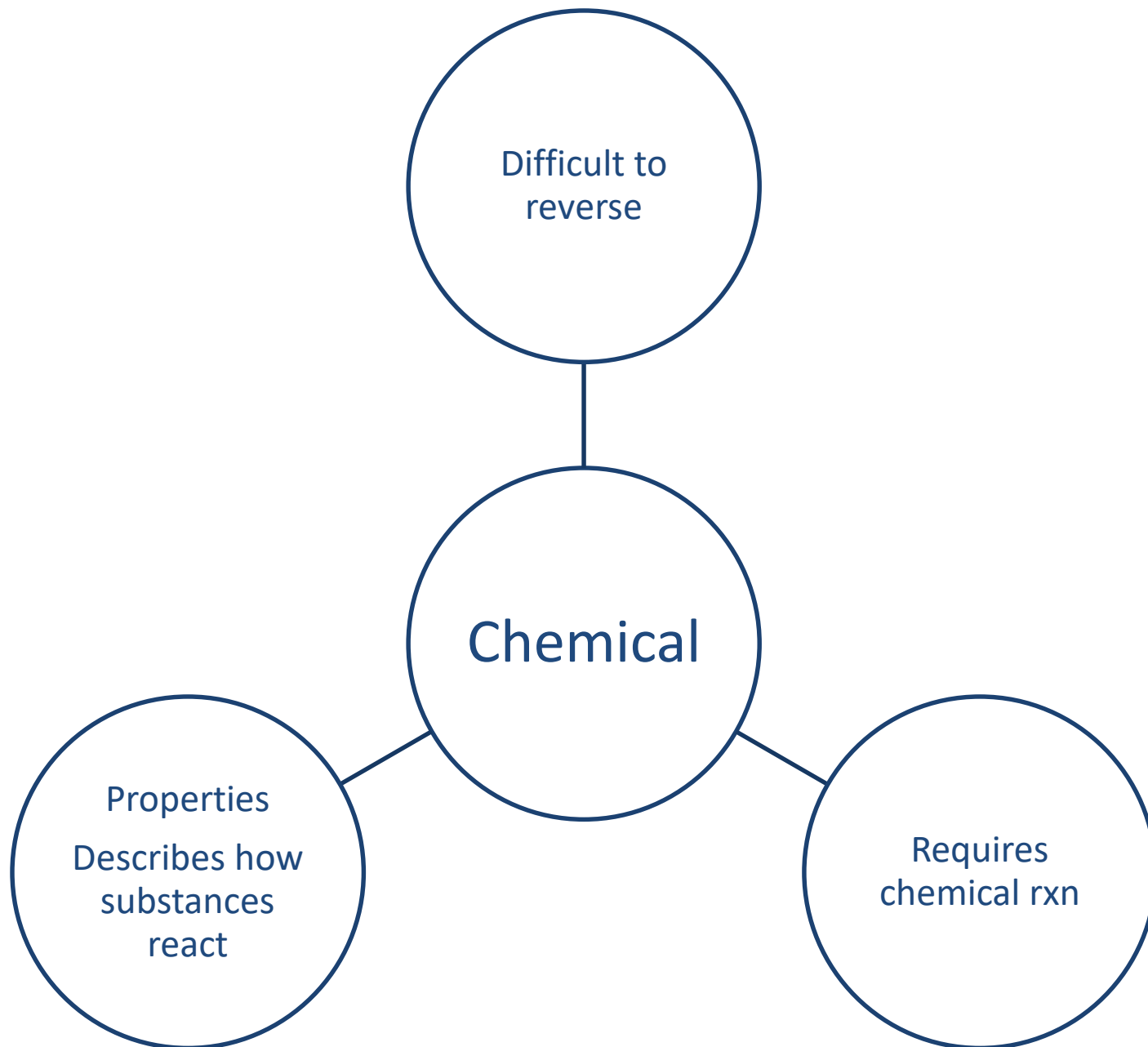
**Color:** yellow/green

**Texture:** squishy/soft

**Changes:** browning







# Properties of Matter

NO

Are these properties determined w/o changing the identity of the substance?

YES

## Chemical Properties

How does the subs react in the presence of:  
air  
an acid  
water  
bases  
other chemicals

What happens if it is heated?

## Physical Properties

### Intensive Properties

DO NOT depend on the amount:

color  
taste  
melting point  
boiling point  
density  
luster  
hardness

### Extensive Properties

Depend on the amount:

mass  
volume  
length  
shape

# Mixtures

Combination of two or more substances by  
non chemical means

Homogenous  
Composition is  
uniform

Solution

Solute

Solvent

Alloy (liquid\*)

colloid

Emulsion

Non homogenous  
Components in two  
or more phases

Suspension

Alloy  
(solid\*)

# Separation techniques

Mixtures can be separated as follows

A soluble solid can be

- separated from a liquid by:
  - - evaporation
  - - simple distillation
  - - crystallization

An insoluble solid can be

- separated from a liquid by:
  - - filtration

Miscible liquids can be

- separated by:
  - - fractional distillation

Immiscible liquids can be

- separated by:
  - - separating funnels

A magnetic solid can be

- separated from a solid/liquid
- by:
  - - magnetism

Solids of different particle size

- can be separated by:
  - - sieve or handpicking

Compounds however can be separated into pure substances by using electricity and other chemicals