Demo: alcohol vs. water
Question: Can you tell them apart?

Aim: What are some properties that distinguish matter?

PROPERTIES	WATER	ALCOHOL
1. state	both	liquids
2. color	both	colorless
3. transparency	both	clear
4. odor*	odorless	pungent
TASTE IS	**NOT A**	**GOOD IDEA!!!**
5. boiling point	BP= 100 °C	BP<100 °C (boils 1st)
6. freezing point	FP= 0 °C (freezes 1st)	FP< 0 °C
7. flammability	X	√ ("burns"/undergoes "combustion")

(* WAFT. DON'T SNORT!)

Types of properties:

- **Physical** properties - are observed without changing the composition of the substance being tested. No new substances are formed.

  All of the properties above, 1 to 6, except #7 are physical properties.

- **Chemical** properties - are observed when a substance **reacts** with something else to form new substances.

  A Closer Look
  Flammability, is the ability to react with oxygen.
  alcohol + oxygen → carbon dioxide + water + fire (heat + light)

8. surface tension	beads up Therefore, water has a greater surface tension than alc	spreads out
9. solubility	dissolves salt	doesn't
10. density	ice floats in water Therefore, water is more dense than alc	ice sinks in alcohol