A.2 PROPERTIES MAKE THE DIFFERENCE supplement

TEKS addressed: 4Bi and 4B.ii

Physical properties of matter can be categorized as either **intensive** or **extensive**. Intensive properties do not depend on the amount of material present. These properties would include:

* + - **Odor ­**– What the substance smells like.
    - **Luster** - How shiny a substance is.
    - **Malleability** - The ability of a substance to be beaten into thin sheets.
    - **Ductility** - The ability of a substance to be drawn into thin wires.
    - **Conductivity** - The ability of a substance to allow the flow of energy or electricity.
    - **Hardness** - How easily a substance can be scratched.
    - **Melting/Freezing Point** - The temperature at which the solid and liquid phases of a substance are in equilibrium at atmospheric pressure.
    - **Boiling Point** - The temperature at which the vapor pressure of a liquid is equal to the pressure on the liquid (generally atmospheric pressure).
    - **Density** - The mass of a substance divided by its volume

Extensive properties do depend on the amount of material present. These properties would include:

* + - **Mass** - A measurement of the amount of matter in a object (grams).
    - **Weight** - A measurement of the gravitational force of attraction of the earth acting on an object.
    - **Volume** - A measurement of the amount of space a substance occupies.
    - **Length** – A measurement of the linear dimension.

It might be interesting to note for students that while density is an INTENSIVE property, it is derived from mass and volume both of which are EXTENSIVE properties.