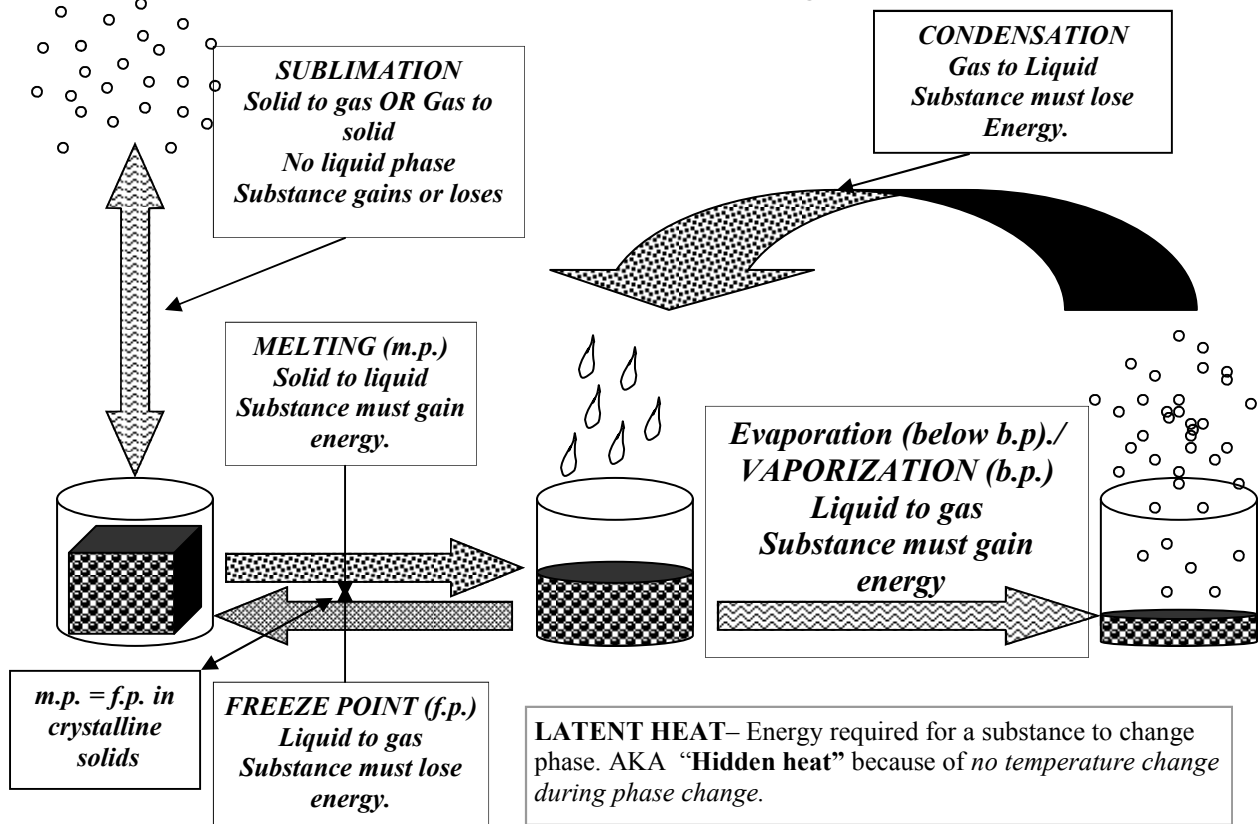


Name _____
 Period _____

Changes of State Or Phase Changes

**All matter undergoes changes of state or phase.
 Changes of state happen when there is an addition
 or subtraction of energy.**

Matrix of Phase Changes

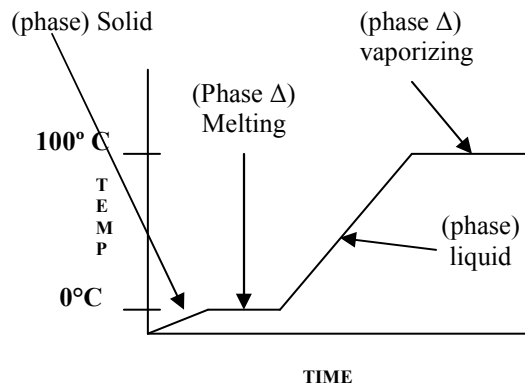


Endothermic means a substance must **GAIN** energy to *Change Phase* or undergo a chemical change.
 e. i. MELTING, VAPORIZATION, SUBLIMATION



Exothermic means a substance must **LOSE** energy to *Change phase* or undergo a chemical change.
 i.e. FREEZING, CONDENSATION, SUBLIMATION

Fresh H₂O Graph of Phases and Phase Changes



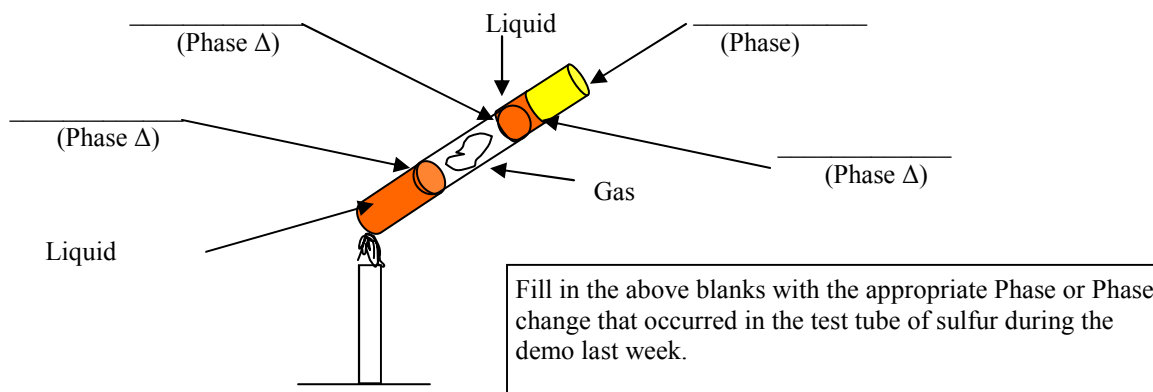
DEFINITION of BOILING
 When the internal *pressure* of a liquid matches the surrounding *pressure*.

Why would you need to boil pasta longer here than you would on the beaches of Hawaii?

Name _____
 Period _____

MATCHING

- A. Solid 1. _____ The temperature where a liquid becomes a gas at vaporization.
- B. Melting 2. _____ When the internal pressure in the liquid matches the surrounding pressure .
- C. Boiling point 3. _____ The temperature of vaporization.
- D. Liquid 4. _____ A solid that forms above or below the normal freezing point.
- E. Crystalline solid 5. _____ Heat that is not seen in a change of temperature during a phase change.
- F. Molecules 6. _____ The phase with a definite volume and shape.
- G. Condensation 7. _____ Smallest particles of a compound.
- H. Amorphous 8. _____ Phase with a definite volume but not a definite shape.
- I. Evaporation 9. _____ Changing from a liquid to a gas **BELOW** the boiling point.
- J. Boiling 10. _____ When a gas loses energy and becomes a liquid.
- K. Latent heat 11. _____ A solid that forms at the freezing point.



An _____ process **releases heat** (converting some of its chemical potential energy to heat energy).
 An _____ process **absorbs heat** (converting some of the heat energy into chemical potential energy.)

Process	Name of phase change	Energy flow
solid -> liquid		
liquid -> solid		
liquid -> gas		
gas -> liquid		
solid -> gas		
gas -> solid		

Place the proper Phase or Phase Change (Δ) in the appropriate box. NOTE this is a graph of the opposite changes that are occurring on the front page.

