Unit 2 NAME

Class Work 10/20/13

2.9 Cooling Curve

SPARK

1. Complete the last page of the Phase Change Worksheets

Objective

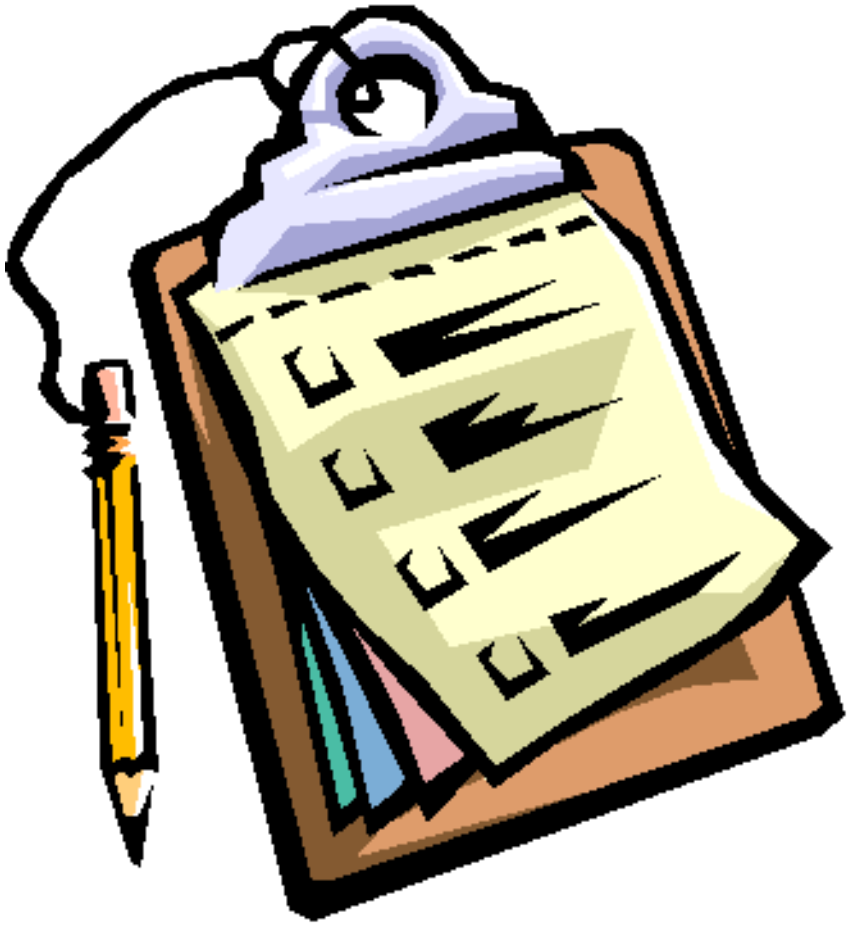
SWBAT identify phase changes on a cooling curve

Regroup

- Submit phase change project and regents review!
- Submit all bathroom passes!
- Complete backside of participation rubric.
- Last day to submit work! Last chance!
- Organize red folders!

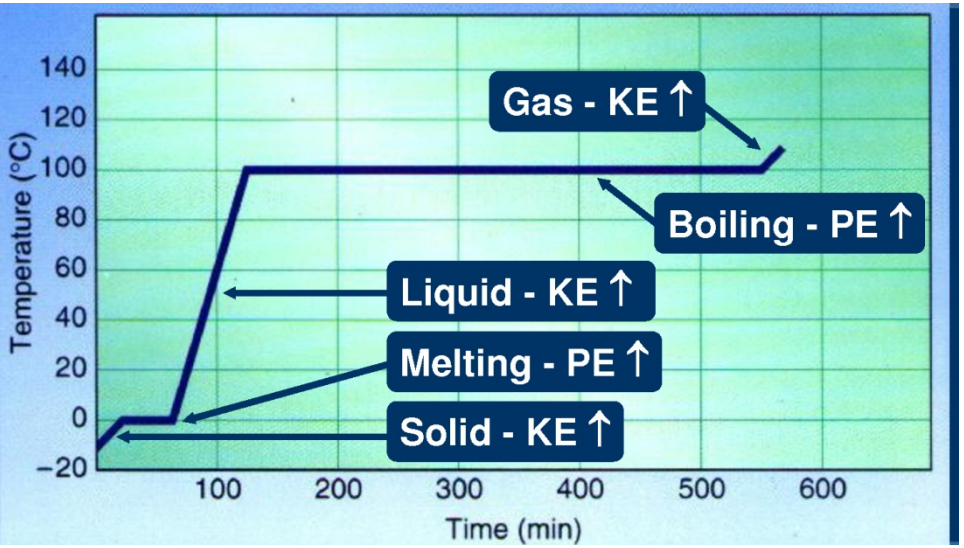
Agenda:

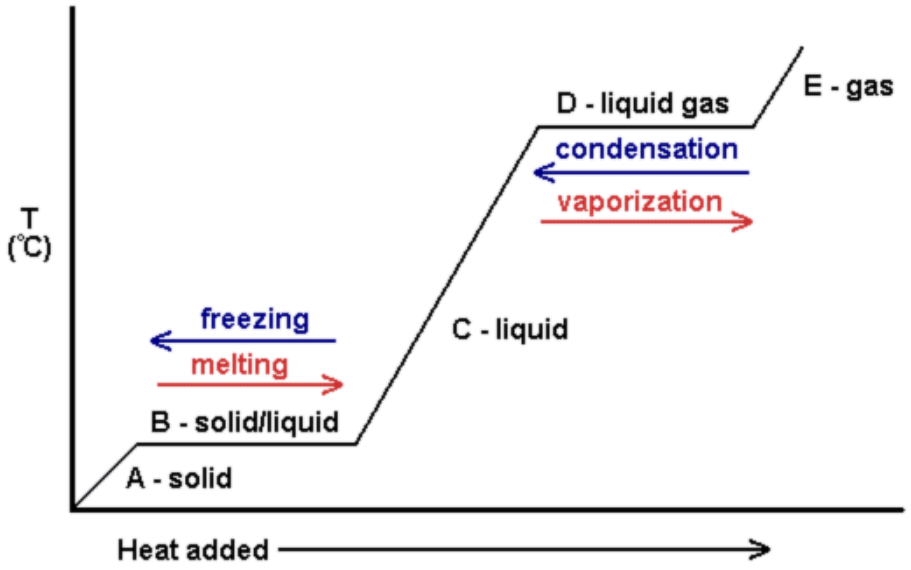
- SPARK
- Objective
- Cooling Curve
- Regents Practice
- Homework



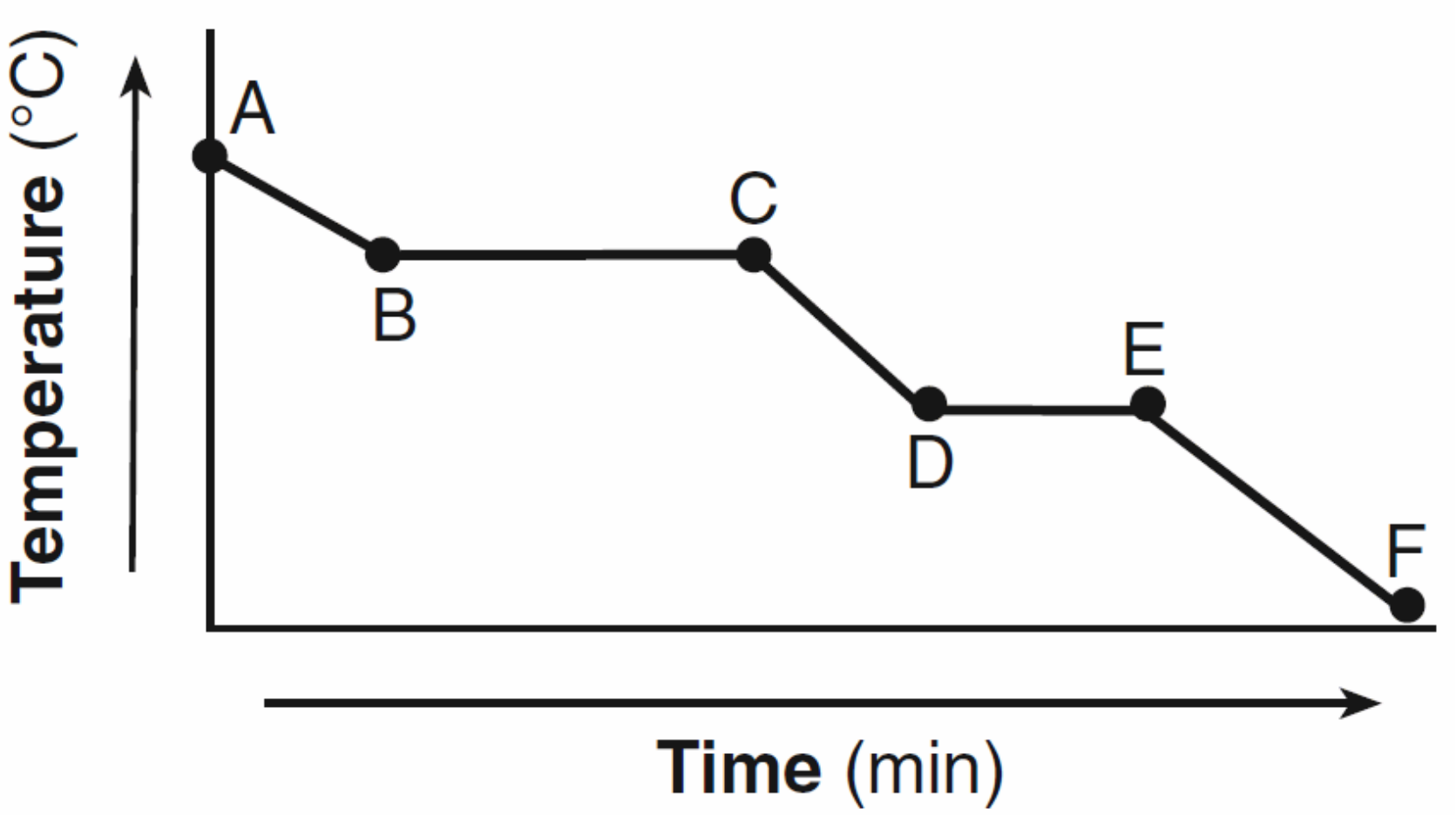
REMEMBER

- Temperature is a MEASURE of KINETIC ENERGY – so if the temperature is NOT increasing, we MUST be increasing the potential energy!



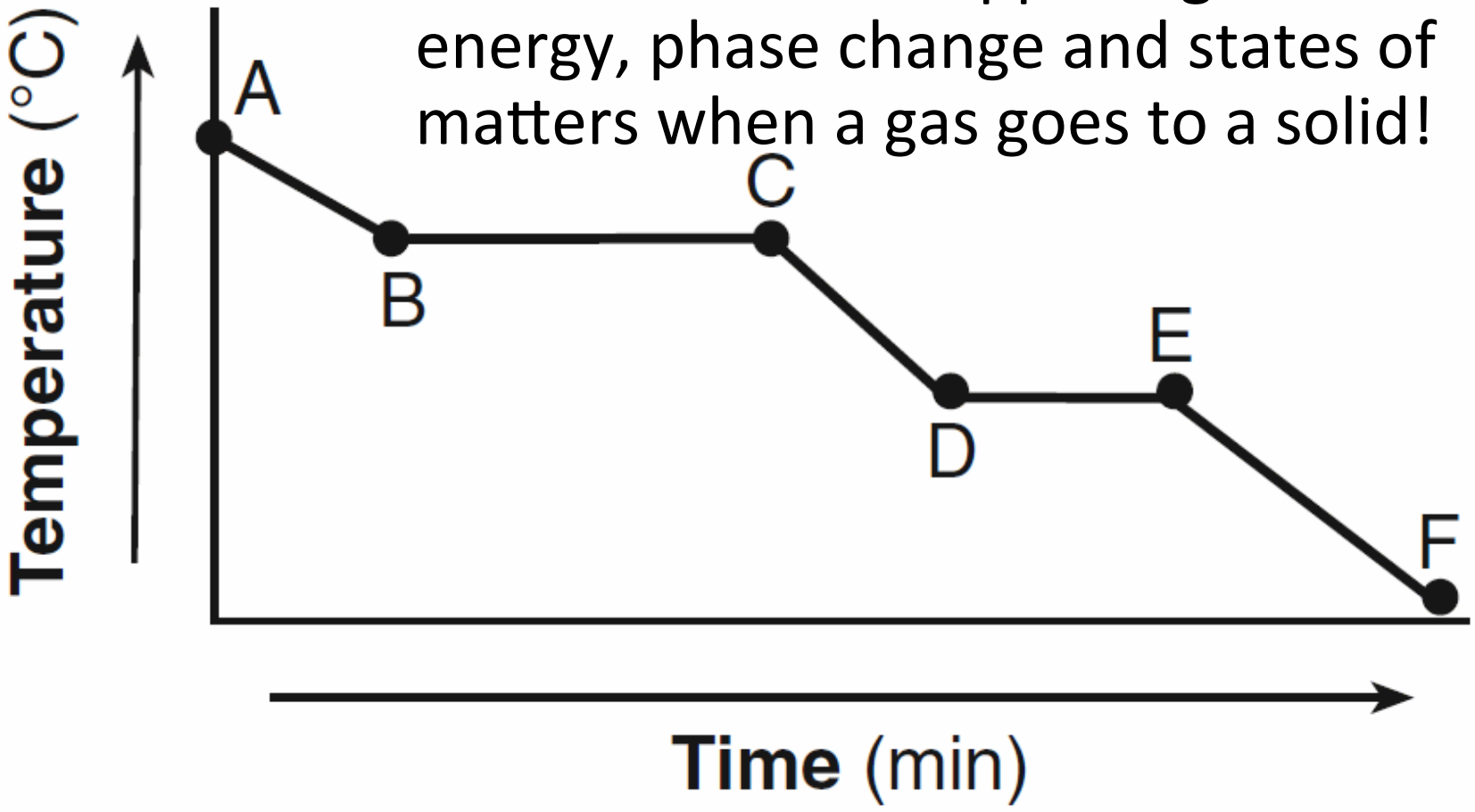


Cooling Curve



STOP AND JOT

- Describe what is happening in terms of energy, phase change and states of matters when a gas goes to a solid!



More notes

- Endothermic**: absorbing energy (take in)
- Exothermic**: releasing energy (give off)
- (s) = solid
- (l) = liquid
- (g) = gas

Regents Practice

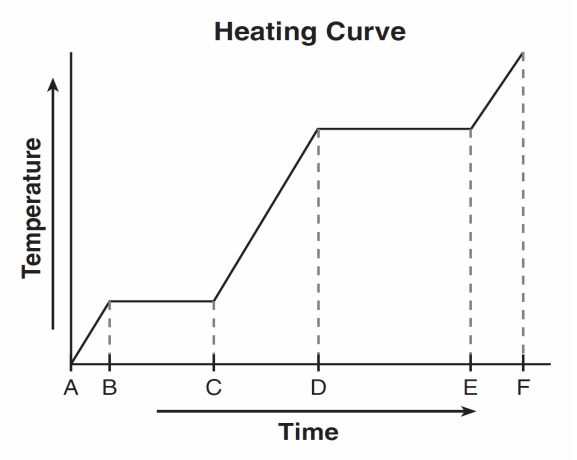
- Annotate the questions! They are text too!

Review of questions

10. Given the diagram representing a heating curve for a substance:

During which time interval is the average kinetic energy of the particles of the substance constant while the potential energy of the particles increases?

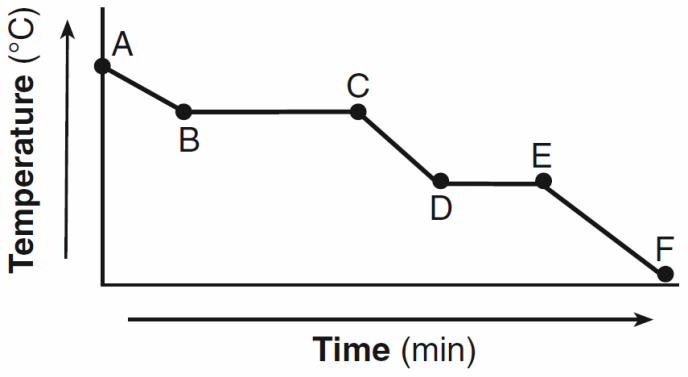
1) AC
2) BC
3) CD
4) DF



11. Given the cooling curve of a substance:

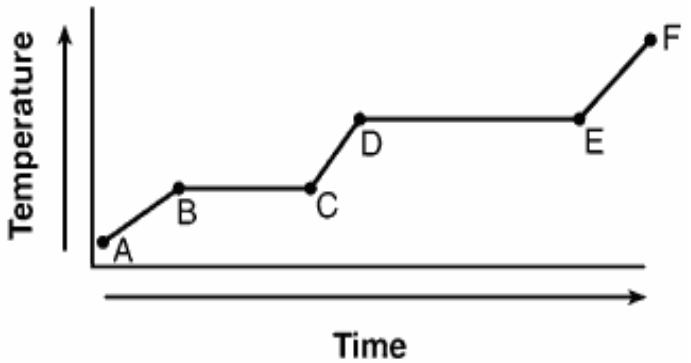
During which intervals is potential energy decreasing and average kinetic energy remaining constant

1) AB and BC
2) AB and CD
3) DE and BC
4) DE and EF

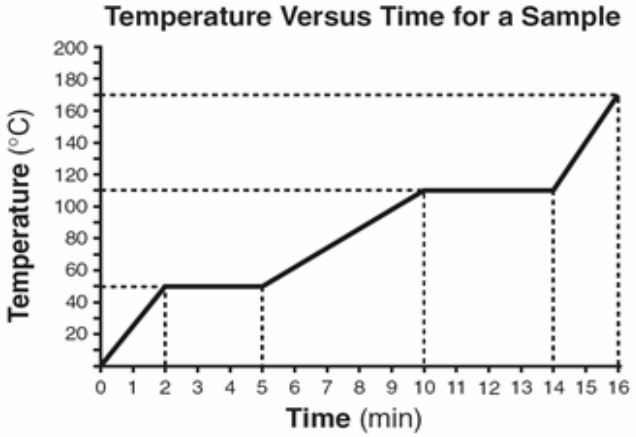


12. The graph below represents the uniform heating of a substance, starting with the substance as a solid below its melting point.

Which line segment represents an increase in potential energy and no change in average kinetic energy?



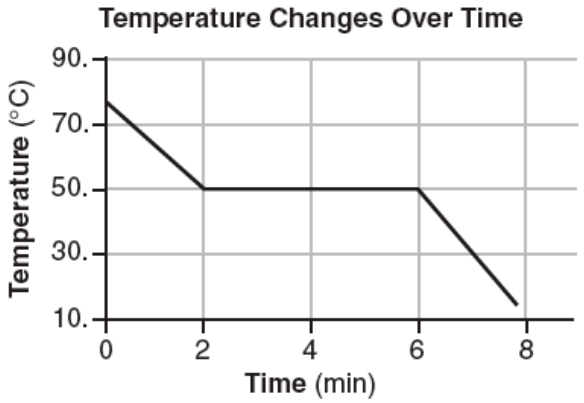
12. Starting as a solid, a sample of a substance is heated at a constant rate. The graph below shows the changes in temperature of this sample.



What is the melting point of the sample and the total time required to completely melt the sample after it has reached its melting point

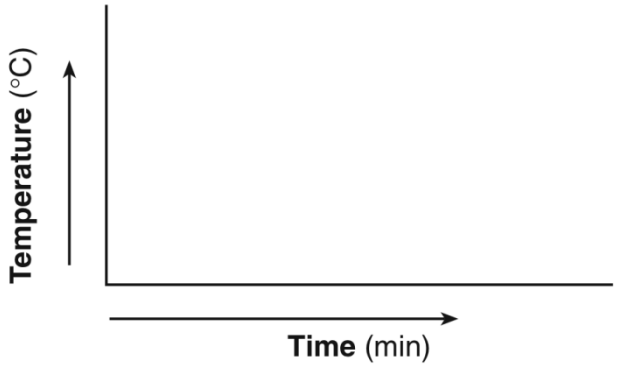
1) 50°C and 3 min
2) 50°C and 5 min
3) 110°C and 4 min
4) 110°C and 14 min

13. The graph below shows a compound being cooled at a constant rate starting in the liquid phase at 75°C and ending at 15°C. What is the freezing point of the compound, in degrees Celsius?



State what is happening to the average kinetic energy of the particles of the sample between minute 2 and minute 6.

A different experiment was conducted with another sample of the same compound starting in the solid phase. The sample was heated at a constant rate from 15°C to 75°C. On the graph below, draw the resulting heating curve.



What Kelvin temperature is equal to 15°C?

HOMEWORK

Finish WS!