

# Phases Classwork Assignment

name \_\_\_\_\_

Imagine you put some very cold ice into a beaker, and put this beaker onto a hot plate. You turn on the heat, and heat is added at a constant rate for 34 minutes. The changing temperature data is at right.

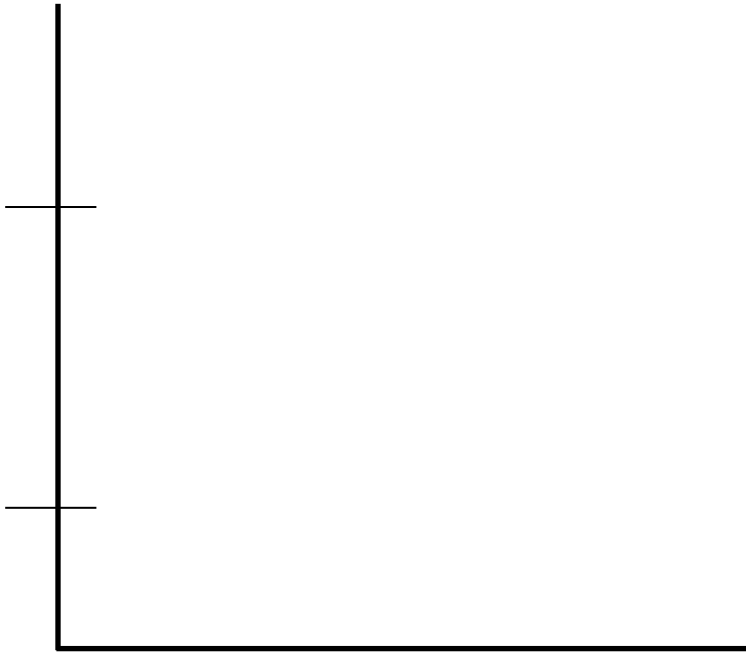
On graph paper, plot data, making a heating curve for H<sub>2</sub>O. Follow directions below.

Steps	Do this
1	Make a landscaped graph showing “Kelvin temperature as a function of time”.
2	Start at 0 Kelvin, put in a small “break”. Begin temperature with 220 K.
3	Time in minutes runs from 0 to 34 minutes.
4	Give this graph a title.
5	Draw in all data points, connect dots with straight lines, use a ruler.
6	Mark the end points and corners of data line segments with the letters ABCDE and F, from left to right.

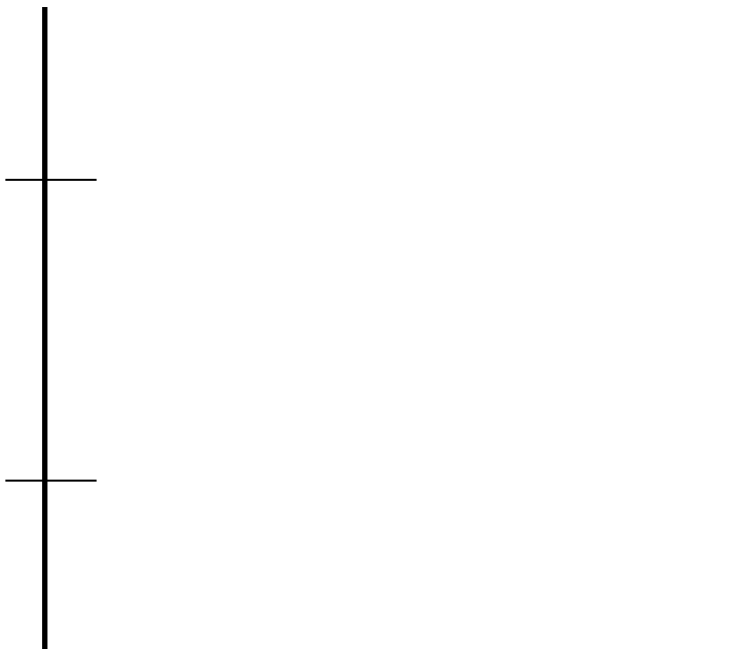
time	Kelvin Temp
0	240
1	250
2	260
3	270
4	273
5	273
6	273
7	273
8	280
9	290
10	300
11	310
12	320
12+1 ☺	330
14	340
15	350
16	360
17	370
18	373
19	373
20	373
21	373
22	373
23	373
24	373
25	373
26	373
27	373
28	373
29	373
30	373
31	380
32	390
33	400
34	410

Segment	Temp	KE	PE	Phase or Phases present	Name the phase change (if the phase changes)
AB					
BC					
CD					
DE					
EF					

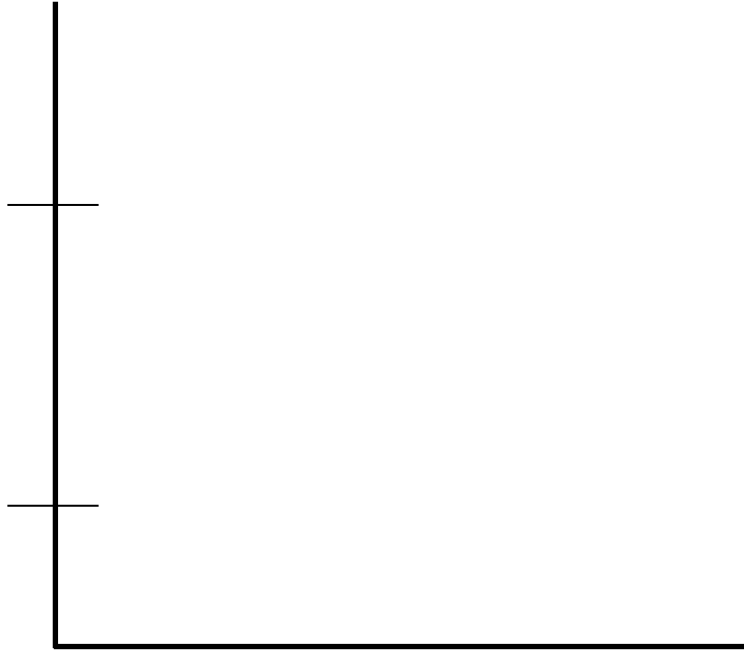
1. Draw the heating curve for MERCURY



2. Draw the cooling curve for COPPER



3. Draw the heating curve for WATER using centigrade temp



## QUESTIONS

4. On a heating curve, does the mass change during a phase change?
5. On a cooling curve, does the mass change when the liquid is cooling, or when the solid is cooling?
6. State the complete Law of Conservation of Matter.
7. Explain how the freezing point and the melting point for water is the SAME temperature.
8. Which phase has the lowest potential energy, which has the highest potential energy?
9. Can potential energy AND kinetic energy change at the same time?
10. Potential energy always changes along with \_\_\_ energy (kinetic or potential?)

Grading: One big graph and the filled in boxes on front of handout = 7 points

Three smaller graphs fully labeled = 6 points

Seven Questions above = 7 points

Twenty total points