

Heating Curve H₂O Graph Assignment

name _____

In order to help grasp phases and phase changes we will make a graph for the heating curve for water. Water is common enough that you already know the important temperatures, the melting point of ice, and the boiling point. The data will guide your drawing, and then you will connect the points in FIVE line segments. Something special happens on each segment; temperatures change or stay steady, and the Kinetic Energy and the Potential Energy also changes—or stays steady.

You need to know what's going on in each segment, and be able to INDICATE it on data table on the graph.

The data is at right. In the classroom notes you will see how to label each segment with the letters A to F.

There's also a chart the graph to indicate what temperature is doing in each segment, and what the KINETIC Energy, and the POTENTIAL energy is doing in each segment as well.

QUESTIONS to be answered...

1. What two important temperatures do you need to know in order to draw any heating curve?

_____ & _____

2. What's the common name for the phase change that occurs from point B - C on the heating curve?

3. What's the common name for the phase change that occurs from point D - E on the heating curve?

4. Explain how the freezing point and the melting point for water is the SAME temperature.

time	Temp Kelvin
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

8. On a heating curve, does the mass change during a phase change? _____

9. On a cooling curve, does the mass change when the liquid is cooling, or if the solid is cooling? _____

10. State the complete Law of Conservation of Matter.

5. Draw the COOLING CURVE FOR Cu



6. Draw the HEATING CURVE FOR Hg



7. Draw the HEATING CURVE FOR H₂O in °C



Grading:

Graph & boxes = 10 points

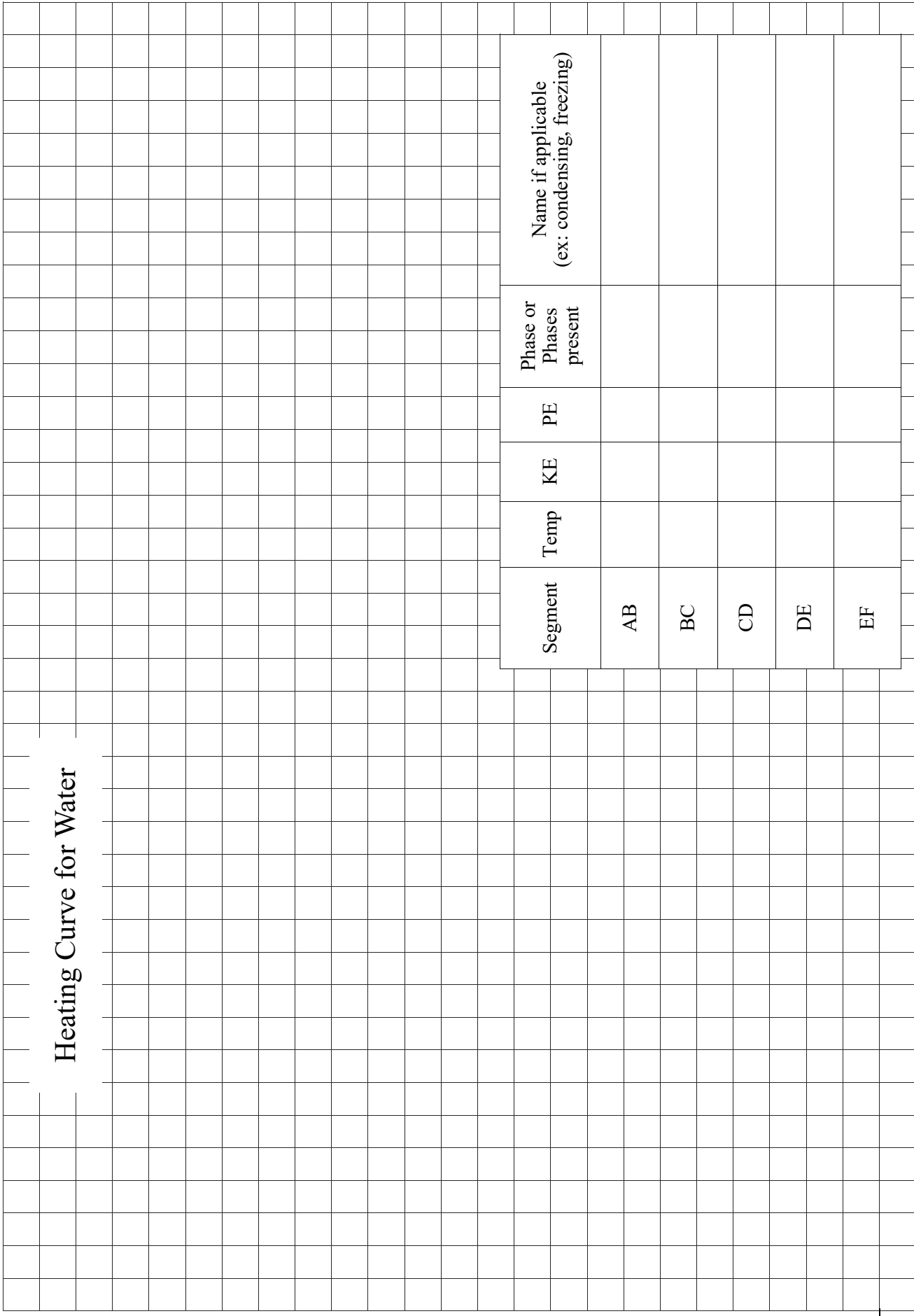
10 Questions = 10 points

Total = 20 points

Heating Curve for Water

TEMP
in
KELVIN

240 K



Segment	Temp	KE	PE	Phase or Phases present	Name if applicable (ex: condensing, freezing)
AB					
BC					
CD					
DE					
EF					

0 5 10 15 20 25 30

Time in Minutes