# PhyzJob: Phase Change Graphing

As you add heat to a substance, its temperature generally increases. During a change of phase, however, the energy that would usually force molecules into increased jiggling instead goes into breaking the bonds of the solid or liquid. Since the thermometer doesn't move during a phase change, the energy added during the phase change is sometimes called **latent heat**. On the graph below, we will chart the temperature of 1kg of H_2O (initially ice at –30°C) as we add enough energy to change it to steam at 120°C.
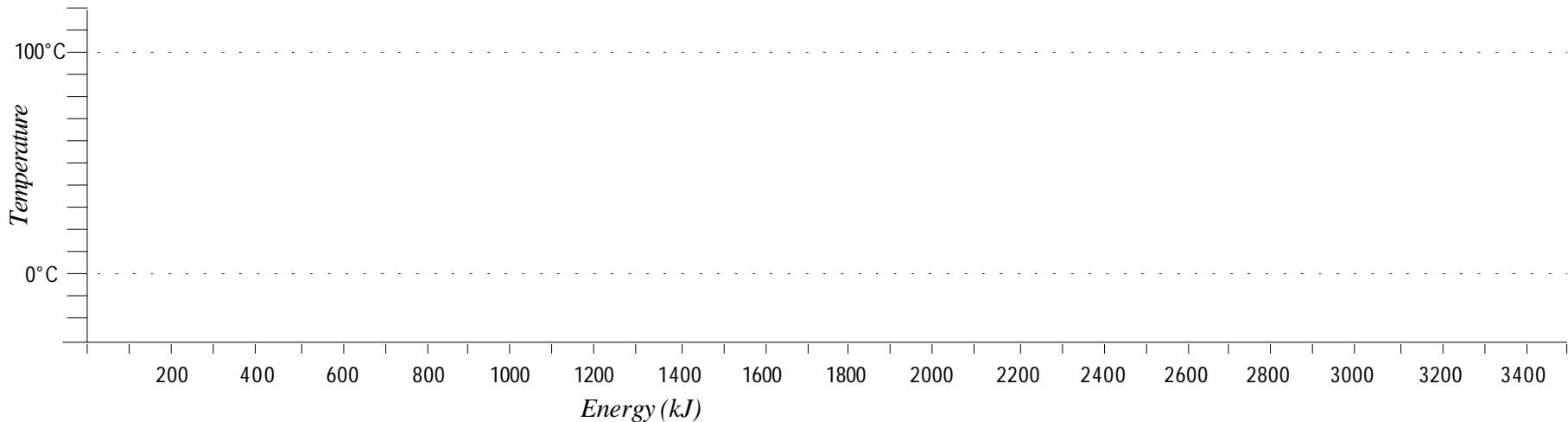
I. How much energy is required to heat the ice from –30°C to 0°C?

III. How much **additional** energy is required to heat the water from 0°C to 100°C?

V. How much **additional** energy is required to heat the steam from 100°C to 120°C?

II. How much **additional** energy is required to change the 0°C ice to 0°C water?

IV. How much **additional** energy is required to change the 100°C water to 100°C steam?

Question
Would the graph look any different if 0.1kg of H_2O was used instead of 1kg?