

Activity	Phase Change Simulations
Time	30 mins
Materials	<ul style="list-style-type: none"> • Material 1 – laptops and Explore Learning access • Material 2 – journals • Material 3 – pencils • Material 4 – post-its • Material 5 – long ropes or tape marked areas for human simulation
Guiding Questions	
A. Question 1 – Why does temperature cause phase changes?	
Plan	
<ul style="list-style-type: none"> • Plans for part 1 of activity: <ul style="list-style-type: none"> ○ Students will explore the Gizmo: <i>Phases of Water</i> (http://www.explorelarning.com/index.cfm?method=cResource.dspView&ResourceID=661). ○ Students will sketch the positioning of the molecules in each phase on post-it notes and stick them in their journals. ○ Underneath each post-it, students will record the temperature and their observations of the behavior of the molecules in each phase. ○ The students will be led to label the specific type of phase change between each post-it with directional arrows using the simulation for assistance. ○ Students will share out their observations. ○ Guiding Questions to ask during this part of the activity: <ul style="list-style-type: none"> ▪ <i>How does the behavior of the molecules change?</i> ▪ <i>What does anything need to change its behavior?</i> ▪ <i>How is it related to the change in temperature?</i> ○ Anticipated Student Responses to guiding questions: <ul style="list-style-type: none"> ▪ <i>They spread out, move greater distances as the temp. increases, in a pattern as a solid</i> ▪ <i>Energy</i> ▪ <i>Various responses</i> • Plans for part 2 of activity: <ul style="list-style-type: none"> ○ In their small groups, students will make a human model of the molecular behavior of phase changes. ○ The teacher will call out solid, liquid and gas. To increase difficulty use freezing, melting, condensation, boiling. ○ As an extension, challenge a group to model evaporation. 	
Differentiation	<ul style="list-style-type: none"> • small group work • use of computer simulation and physical simulation
ELL Modification	<ul style="list-style-type: none"> • Modification 1 – visual cues and labels on simulation • Modification 2 – social interactions • Modification 3 - being a physical piece in a simulation
Check for Understanding	The students will be assessed for understanding through their journal responses and the small group human model.