

Name _____ Period _____ Date _____



Solutions

STEM Sims

Lesson 4: Does it Get Hot, Hot, Hot?

Some solids heat up the solution when they dissolve, while other solids can lower the temperature of the system as they move into the solution. Can you determine which solids release and which ones consume heat as they dissolve?

Doing the Science

1. Start the Solution Simulation by clicking on the “Sim” tab.
2. Click on the bottle containing H₂O to add the liquid to the beaker.
3. Click on the solid KCl to add it to the water in the beaker.
4. Note and record the temperature of the system in Table 1.
5. Click on the “Stir” button. Note and record the temperature of the system in Table 1.
6. Click the “Reset” button to clear the beaker.
7. Repeat the process by adding the following solid substances to water: KNO₃, NaCl, and Na₂CO₃. Make sure to test each solid one at a time and to hit the “Reset” button in between tests.

Table 1.

Substance	Before Mixing Temperature (°C)	After Mixing Temperature (°C)
KCl		
KNO ₃		
NaCl		
Na ₂ CO ₃		

Do You Understand?

1. Which solid(s) raised the temperature of the water as the solid dissolved?
2. Which solid(s) lowered the temperature of the water as the solid dissolved?
3. An exothermic process is one that releases heat from the system. Which solid(s) dissolved in an exothermic process?
4. An endothermic process is one that consumes heat from the system. Which solid(s) dissolved in an endothermic process?