

About 29,200 results (0.36 seconds)

**CLICK!**

States of Matter: Basics - States of Matter | Atoms | Molecules - PhET ...

<https://phet.colorado.edu/en/simulation/states-of-matter-basics>

Click the "5" shield



Select "States". Neon should be selected.



Click Play.

<p>Click on <b>Solid</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>	<p>Click on liquid <b>Liquid</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>	<p>Click on <b>Gas</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>
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1. Which of these 3 drawings shows the MOST order in the dots?



2. Click on solid, add heat (use slider to add heat) until you reach a temperature of about 26°C. What changed?

3. Keep adding heat until you reach about 55°C. What changed?

4. Based on your observations, what can you say about the motion of the dots as heat is added?

Select :



<p>Click on <b>Solid</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>	<p>Click on liquid <b>Liquid</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>	<p>Click on <b>Gas</b></p> <p>Write T and draw what you see here</p> <p>← and →</p> <p>Describe the motion of dots in a word or two.</p>
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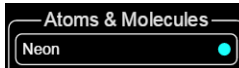
How do the words you chose to describe the motion of the dots change?

Select:

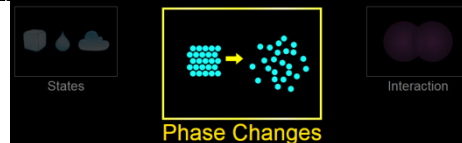


Click on solid liquid and gas. Heat it. Cool it. Is oxygen's motion more closely related to the motion of neon/argon or water? Why?

Select "Phase Changes". Neon should be selected.

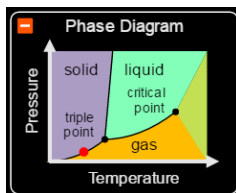


## States of Matter



In what state is the neon? \_\_\_\_\_

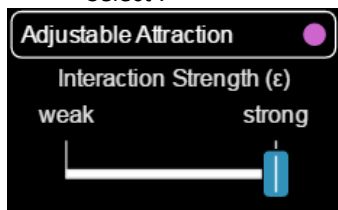
What are the temperature and pressure? \_\_\_\_\_ °C, \_\_\_\_\_ atm



Look at the Phase Diagram. What happens to the red dot as you add heat?

What happens to the red dot as you remove heat?

Select :



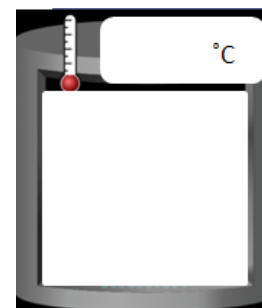
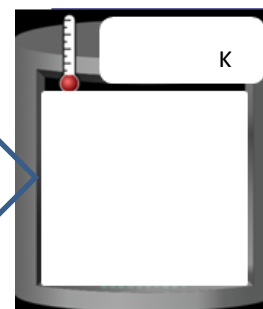
RESET: Add heat until the pressure reading changes from zero. What is the temperature? Draw dots! How are they moving?



RESET: Select "Adjustable Attraction". Move the interaction strength slider between "weak" and "strong". What happens to the motion of the dots?



RESET: Select water. Give the bicycle pump 4 or 5 good pumps. Draw what you see here →

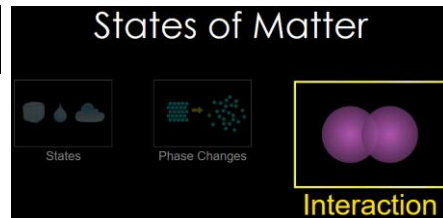
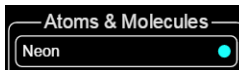


Before resetting the water example you drew (right), move the finger down about 1/2 way. What happens to the temperature (**rises/falls/stays same**) and pressure (**rises/falls/stays same**)?

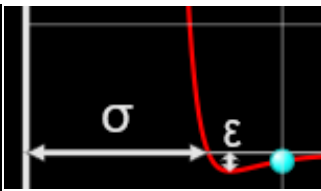
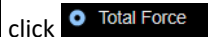
Play with the sim and try to make the lid fly off. Can you make the lid fly off and have NO dots escape? In the boxes, below, give 4 different things you tried that made the lid fly off.

<p>Which atom or molecule? How did you do it?</p>  <p>What happened to the dots?</p>	<p>Which atom or molecule? How did you do it?</p>  <p>What happened to the dots?</p>
<p>Which atom or molecule? How did you do it?</p>  <p>What happened to the dots?</p>	<p>Which atom or molecule? How did you do it?</p>  <p>What happened to the dots?</p>

Select "Interaction". Neon should be selected.

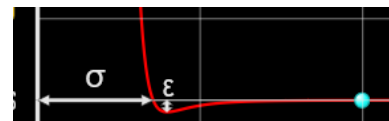


Expand the forces window



1) Slide the finger to the right to the first vertical line. Let go of the finger. What happens to the Neon atom you dragged?

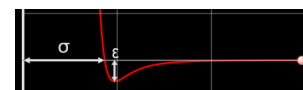
2) RESET: Slide the finger to the right to the second vertical line. Let go of the finger. What happens to the Neon atom you dragged?



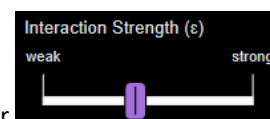
3) RESET: Slide the finger to the right to the third vertical line. Let go of the finger. What happens to the Neon atom you dragged? (You may have to wait 45 seconds or so...)



4) RESET: select  Repeat steps 1 and 2 with argon. What differences are there with argon and neon?



5) RESET: select  Move the interaction strength slider. What happens to the graph?



- 6) In all cases, which way are the forces pointing when the atoms get too close together?
- 7) In all cases, which way are the forces pointing when the atoms get too far apart?
- 8) What kind of motion does this represent (think big picture as the atom nuclei move – it might help to ignore the graph and look at atoms?)
- 9) What is your favorite thing about these 3 sims?