



**Describe how matter
goes through changes
in states of matter.**




» **Extra time**

Done early? Look up some phase changes experiments!

Also, check out the Phet simulation here:

https://phet.colorado.edu/sims/html/states-of-matter-basics/latest/states-of-matter-basics_en.html





» **Vocabulary**

Thermal energy - the total kinetic and potential energy of all the particles in an object or substance

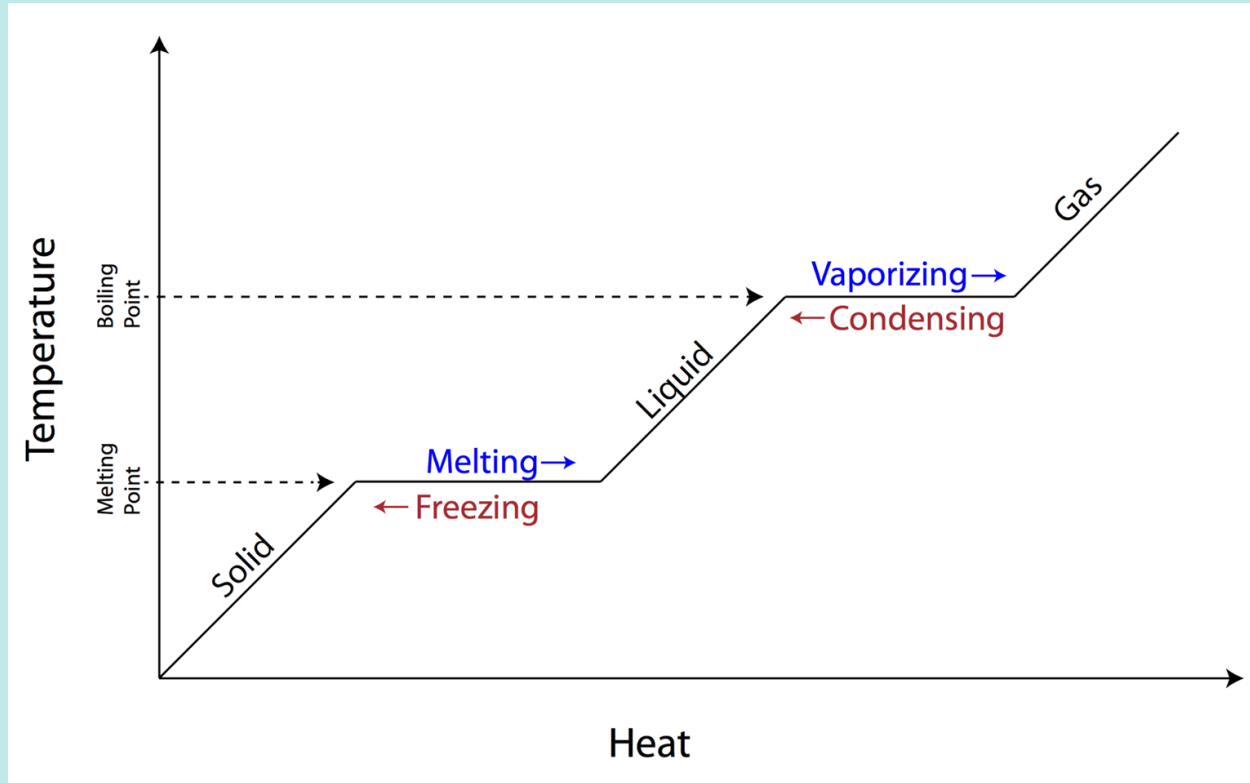
Temperature - measure of the average kinetic energy of the particles in an object or substance

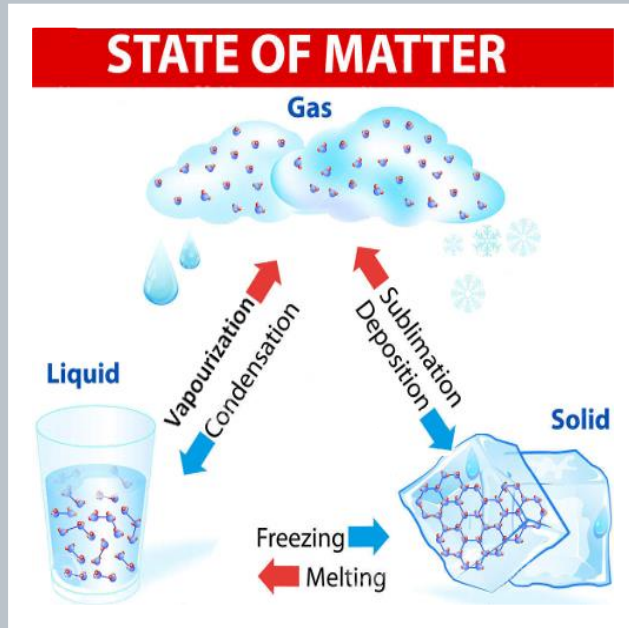
» Changes in Phases (states of matter)

Original State	Process	New State
Solid	Melting	Liquid
Liquid	Freezing	Solid
Liquid	Vaporization	Gas
Gas	Condensation	Liquid
Solid	Sublimation	Gas
Gas	Deposition	Solid

How can pressure cause changes to the state of matter?

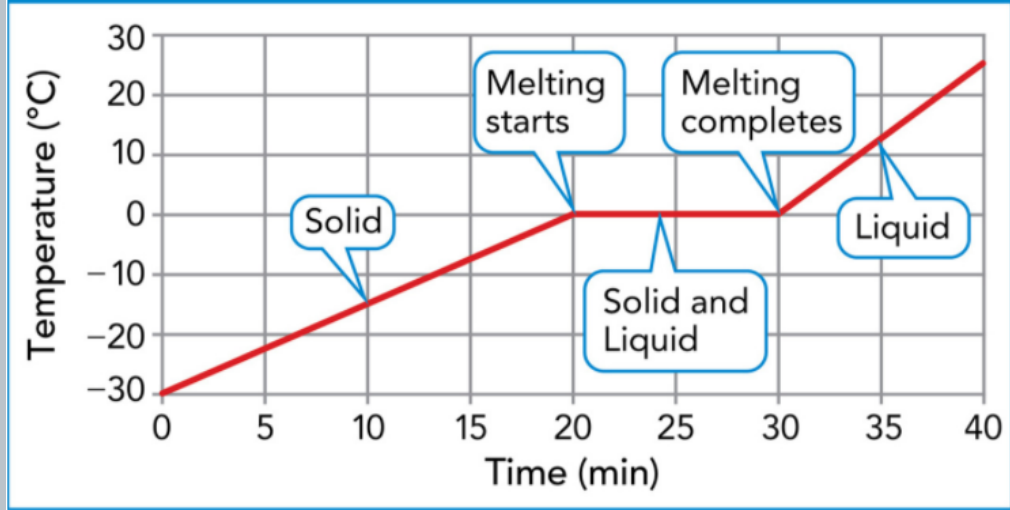
» Phase Changes Graph





» Describe the changes in state in your own words

Changing Solid Ice into Liquid Water



➤ **Are the changes always even and constant?**

» State of Matter Changes Activities

Phet simulation

Website One

Website Two

Poem about states of matter changes

Mentos and Coke (more to due with surface tension but whatever...)



Another change in state of matter activity from a student:

Put a plastic water bottle in the freezer for about 2 hours and 45 minutes. Then you have two choices, you can either hit the bottle on the table, or you can pour the cold water out in a bowl to see ice forming.



» Changes in states

Check out the links and videos below to review how states of matter change to different states!

- https://phet.colorado.edu/sims/html/states-of-matter-basics/latest/states-of-matter-basics_en.html
- <https://www.scienceworld.ca/resource/states-matter/>
- <https://ngss.nsta.org/Resource.aspx?ResourceID=454>
- <https://www.scientificamerican.com/article/poem-states-of-matter/>
- <https://www.eepybird.com/featured-video/coke-and-mentos-featured-video/science-of-coke-mentos/>
- <https://lsintspl3.wgbh.org/en-us/lesson/ilunctv18-il-ilphasesofmatter/1> (click the continue as guest to get into the lesson)
- http://www.chem4kids.com/files/matter_changes.html
- <https://az.pbslearningmedia.org/resource/phases-of-matter-phase-changes-animation/unc-tv-science/>
- <https://www.dkfindout.com/us/science/solids-liquids-and-gases/changing-states/>
- <https://www.thoughtco.com/list-of-phase-changes-of-matter-608361>

<https://www.youtube.com/watch?v=oc0ypeDELb0>

<https://www.youtube.com/watch?v=CMUmQRgJAo0>



» **What was interesting?**



Let's play a game!


[Link](#)



» Add knowledge to the Padlet

Add definitions (in your own words) and pictures to each of these vocabulary words to help show your knowledge about how matter changes states.

(Padlet link is in Google Classroom)



**How does matter change state?
What vocab word goes with
what phase change?**



**What causes the change
in states of matter?**

» Changes Project

Your job is to explain the difference between the three states of matter and how they change from one state to another.

You have three options to choose from to complete that mission, but I am grading you on your ability to to explain the difference between the three states of matter and how they change from one state to another.

» Changes Project Options

Option 1

Complete an activity showcasing the changes in action and record (or take pictures) of the changes and explain them.

Option 2

Create a physical or digital poster explaining the states and changes with examples, pictures, and detailed descriptions.

Option 3

Write a story (or draw a comic) about a particle going through the different states of matter and the changes they encounter.



» Timeline for Changes Project

Thursday

Pick the option you want to do and then start working

Friday

Finish working on your project and turn it in

Saturday

Technically this is due on Saturday in case you need a little extra time

This is an assessment grade so will be worth 80% of your grade for a bit. Do your best on this!



» **What questions do you have?**