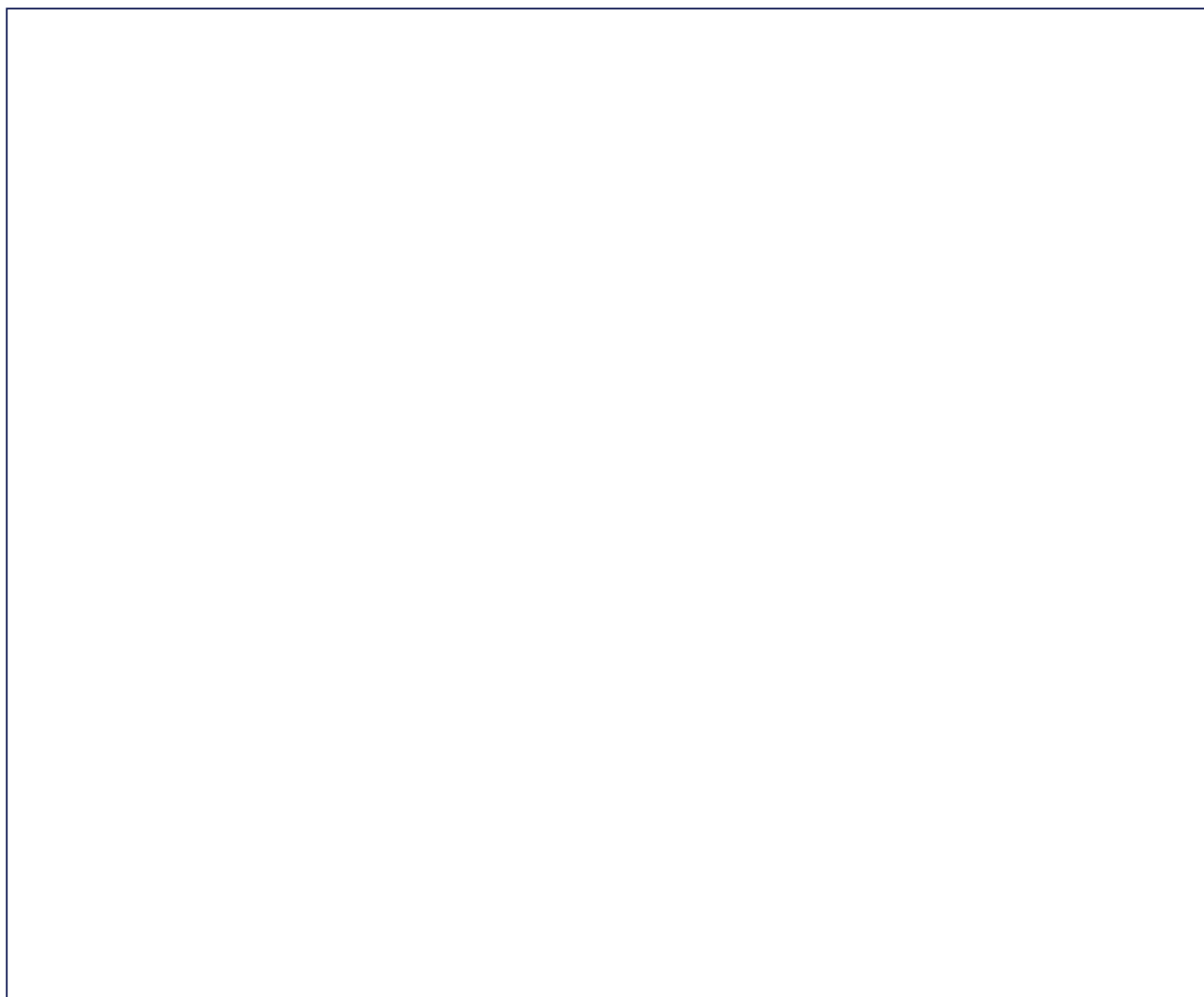


## Nova's States of Matter Investigation

*Learning objective: To identify, draw, and label the arrangement of particles in solids, liquids, and gases.*

Nova the owl is observing the world to see how materials behave. Use the drawing space provided to illustrate the particle model for each state of matter. Ensure your labels clearly identify the arrangement and movement of the particles.

**Draw:** Draw three large circular containers side-by-side on your page. Inside the first, draw a neat grid of small, touching circles representing a solid. Inside the second, draw the same number of circles, but jumbled near the bottom to represent a liquid. Inside the third, draw only five or six circles spread far apart across the whole space to represent a gas. Use arrows to show movement for the liquid and gas particles.



*Label words: Solid · Liquid · Gas · Particles · Fixed position · Flowing · Random movement · Vibrating*

### Steps:

1. Step 1: In the first box, draw a solid. Label the particles and describe why they cannot change their shape.
2. Step 2: In the second box, draw a liquid. Label the particles and explain how they differ from a solid.
3. Step 3: In the third box, draw a gas. Label the particles and describe their movement.
4. If you heat a solid block of ice, what happens to the energy and movement of the particles?
5. Which state of matter has the most space between its particles? Explain your answer.