

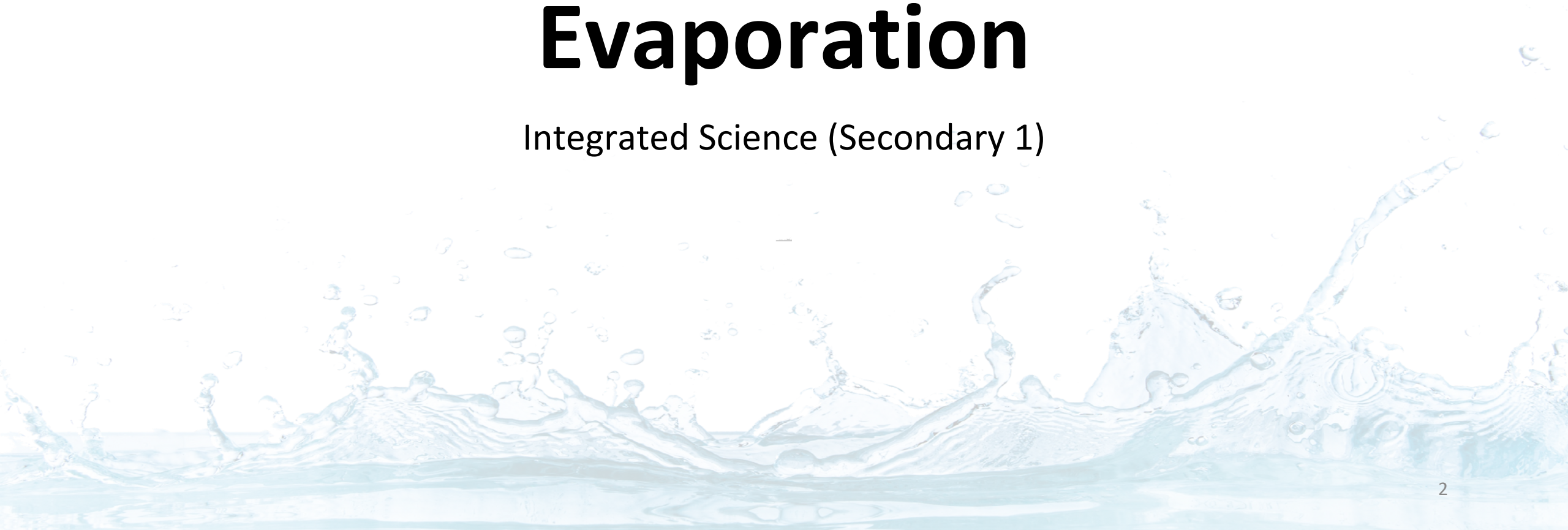
Promoting the Use of Educational Technology in Learning and Teaching in Science (S1-3) Learning and Teaching Resources

Condensation and Evaporation



Condensation and Evaporation

Integrated Science (Secondary 1)



Can you tell why?



Why is the water on the wall and floor in spring mornings?



Our key question today

How can we represent the water in the classroom during a humid day in terms of particles?

After today's lesson, you should be able to:

- Draw and describe the arrangement of the particles in condensed water on the surfaces and water vapour in the air
- Compare the arrangement of particles in liquid and gaseous states
- Explain the drying up of the wet surfaces due to evaporation in terms of the locations of water particles
- Create diagrammatic representations to provide explanations
- Compare and contrast diagrammatic representations
- Evaluate the relative merits of different diagrammatic representations through a system of criteria

Part 1:

Explaining condensed water on the surfaces

Discuss in groups (2 minutes)



Can you try constructing a model to explain the phenomenon on the left? Please use **particles** to help your explanation.

Two questions to aid your thinking:

1. Why do you arrange the water particles in this way?
2. Where does the water come from?

**Work individually or in pairs
on the DragGame platform**

(3 minutes)

Explain to your peers.

Why do you arrange the particles in such a way?

(3 minutes)

You can work on the DragGame
platform to make changes.

(2 minutes)

**Share your understanding
with your classmates!**

What are the features of a good particle-level representation of condensation?

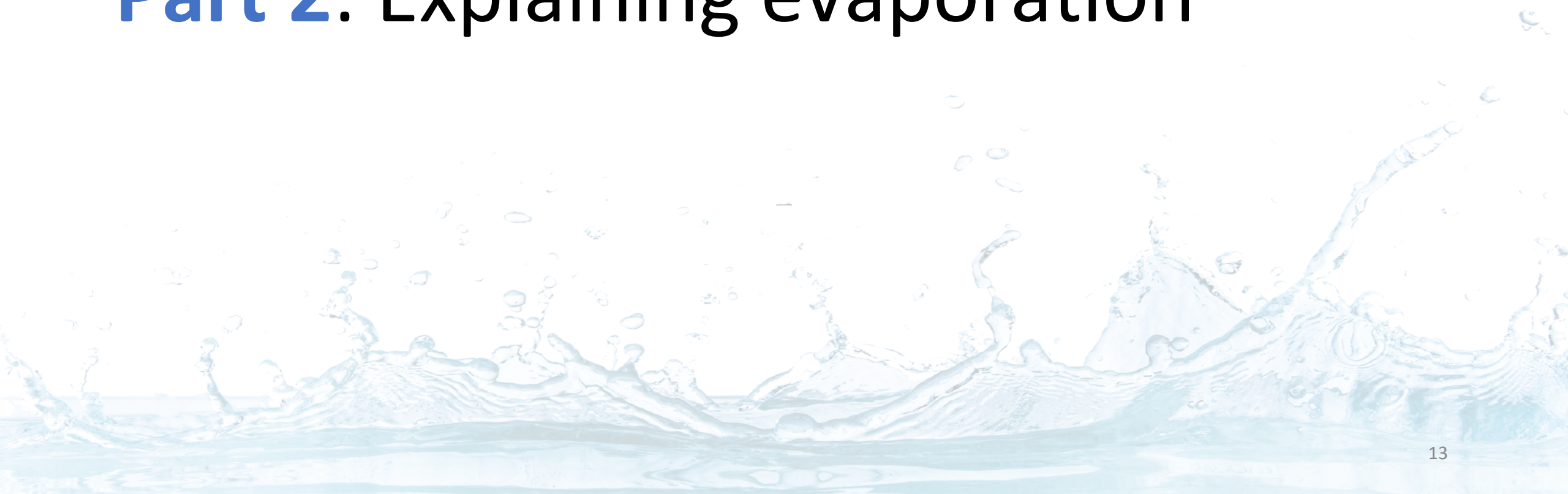


Points to consider:

- Presence of particles
- Distance between particles
- Arrangement of particles

(i) On the wall, (ii) on the floor, and (iii) in the air in terms of the physical states of water

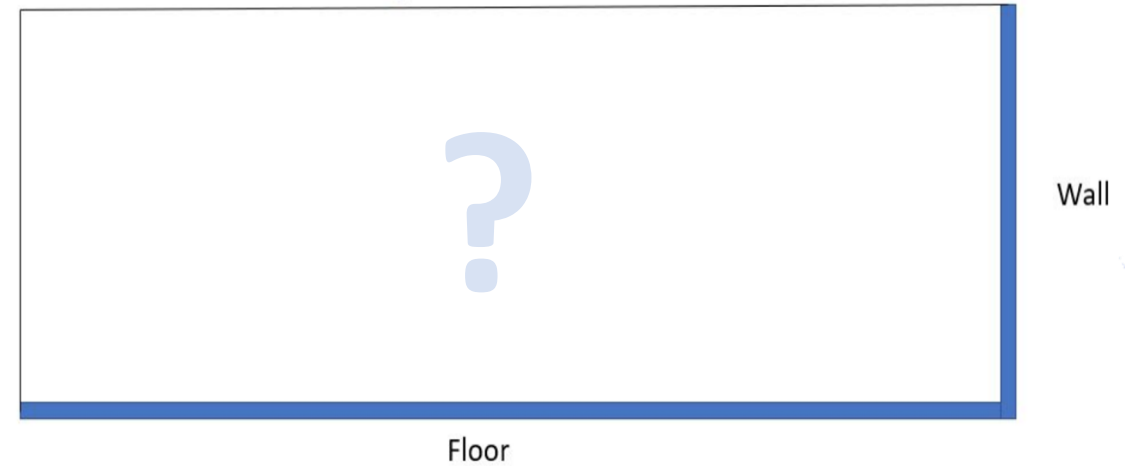
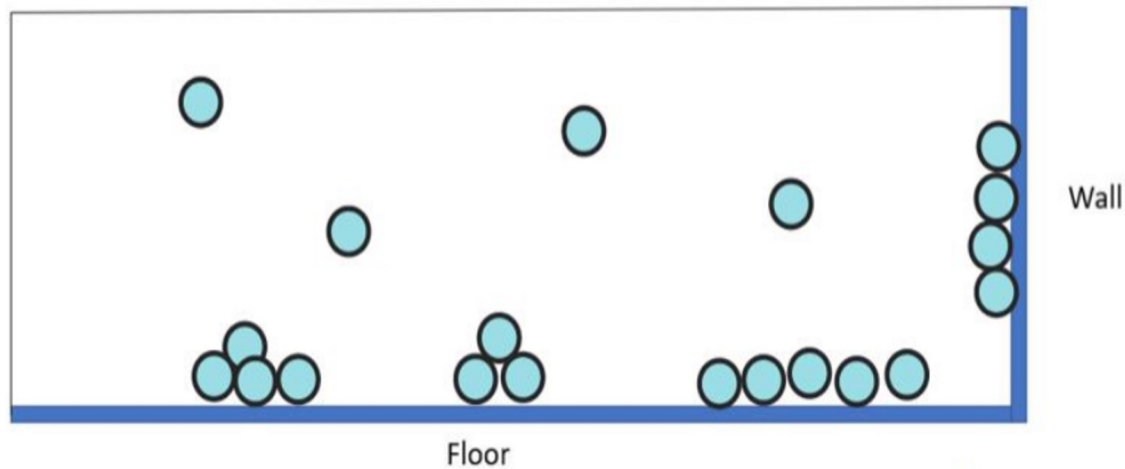
Part 2: Explaining evaporation



While the floors and walls are usually wet in the spring mornings, sometimes they become dry in the afternoon, even if we do not wipe these surfaces.

Why?

Work individually or in pairs on the DragGame platform to create a diagram to explain. (2 minutes)



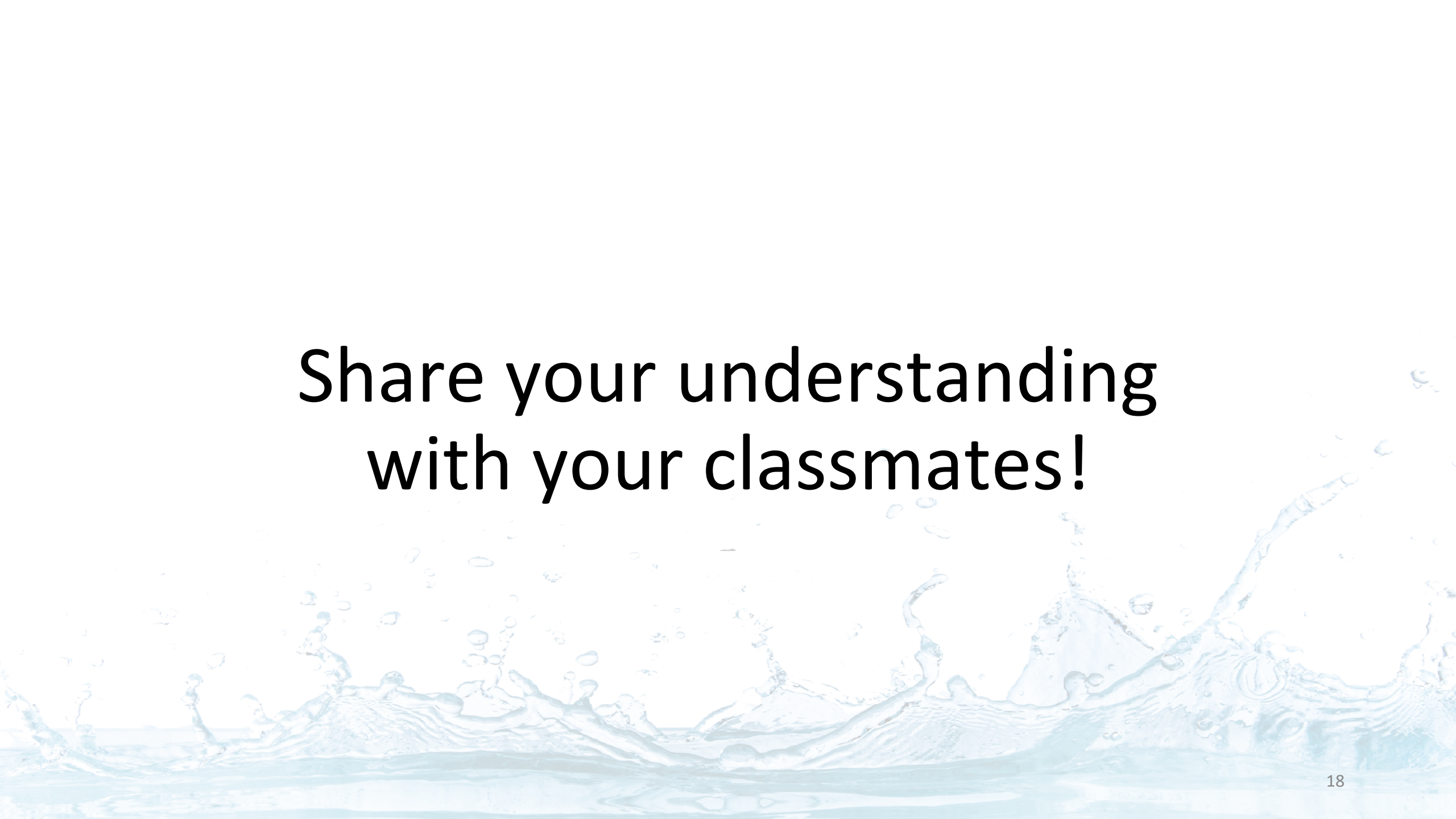
Explain to your peers.

Why do you arrange the particles in such a way?

(2 minutes)

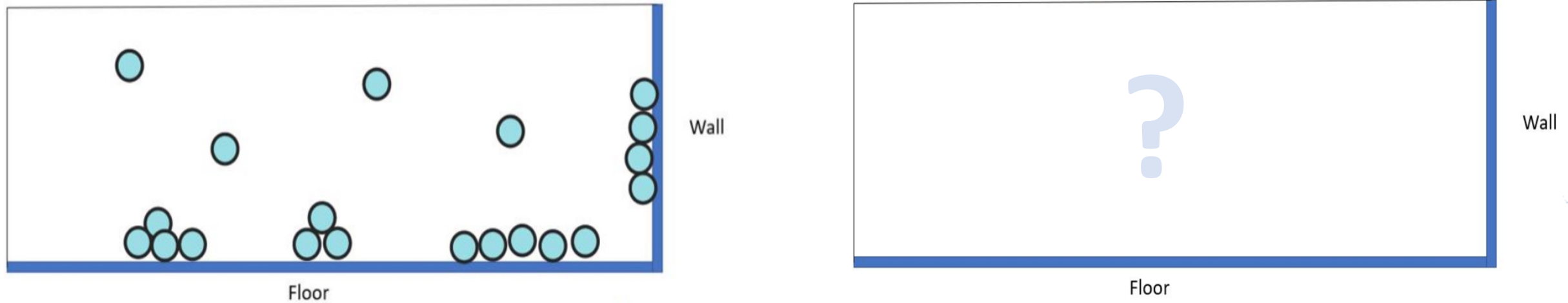
You can work on the DragGame platform to make changes.

(2 minutes)

A background image of a water splash, with water droplets and waves in shades of light blue and white. The splash is centered horizontally and occupies the lower half of the frame.

Share your understanding
with your classmates!

What are the features of a good particle-level representation of evaporation?



Points to consider:

- Presence of particles
- Distance and arrangement of particles in the air in terms of the physical states of water

Let's consider...

- What have we learned in this lesson?
- How could evaporation be represented in a sub-microscopic way?
- Then, how could condensation be represented in a sub-microscopic way?

Looking ahead...

- Evaporation and condensation are two important processes in the water cycle.
- They involve the **same** substance, water.
- Therefore, they involve **one** type of particles only.
- Many daily life experiences, however, involve **multiple kinds of substances**.
- We will consider these happenings in the coming lessons.

A background image of a water splash, with water droplets and waves in shades of light blue and white, creating a dynamic and fresh visual effect.

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