

Water in the Air & Clouds

Cloud Ladder Cliffs with Stormling

Learning target

Explain how clouds relate to water in the air.



Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Water vapor; condensation; cloud droplets and ice; cloud observations

Open Cloud Ladder Cliffs - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.



Water in the Air & Clouds - key ideas

1. The first clues

Water vapor is the invisible gaseous form of water. Visible clouds contain tiny liquid droplets or ice crystals.

2. How the clues connect

As moist air cools enough, some water vapor condenses into droplets. Very cold conditions can support ice crystals in clouds.

3. Our evidence record

Our model shows moist air cooling, droplets forming and a visible cloud appearing. A visible white mist is droplets, not invisible water vapor itself.

Keep the science accurate

Water vapor is invisible. Visible mist and clouds are droplets and/or ice.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference: <https://www.nextgenscience.org/dci-arrangement/3-ess2-earths-systems>

Talk through the evidence

1. What is water vapor?

Expected answer: Invisible gas

Reasoning: Our model shows moist air cooling, droplets forming and a visible cloud appearing. A visible white mist is droplets, not invisible water vapor itself.

2. What can clouds contain?

Expected answer: Droplets or ice crystals

Reasoning: Water vapor is the invisible gaseous form of water. Visible clouds contain tiny liquid droplets or ice crystals.

3. Which process forms liquid droplets from vapor?

Expected answer: Condensation

Reasoning: Water vapor is the invisible gaseous form of water. Visible clouds contain tiny liquid droplets or ice crystals.

4. Which sequence fits the cloud model?

Expected answer: Moist air cools, then droplets form

Reasoning: Our model shows moist air cooling, droplets forming and a visible cloud appearing. A visible white mist is droplets, not invisible water vapor itself.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.