

Precipitation & Runoff

Rainfall Ravine with Trickling

Learning target

Trace precipitation as it moves across land.



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

Rain and snow; falling water; surface flow; gravity

Open Rainfall Ravine - 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.



Precipitation & Runoff - key ideas

1. The first clues

Rain and snow move water from clouds toward the surface as precipitation. Gravity pulls falling water downward.

2. How the clues connect

Some water flows over the surface as runoff. Slope, ground cover and how much water enters the soil influence its path.

3. Our evidence record

Our slope map shows a ridge above a stream, with arrows downhill into the stream. Water may also soak in or evaporate; not every drop follows one fixed route.

Keep the science accurate

Water vapor is invisible; clouds contain droplets/ice. Groundwater occupies spaces, not necessarily underground rivers. No required purification experiments.

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/5-ess2-earths-systems>

Talk through the evidence

1. What is precipitation?

Expected answer: Water falling from clouds

Reasoning: Rain and snow move water from clouds toward the surface as precipitation. Gravity pulls falling water downward.

2. What is runoff?

Expected answer: Water flowing over the surface

Reasoning: Some water flows over the surface as runoff. Slope, ground cover and how much water enters the soil influence its path.

3. Which direction follows the slope arrows?

Expected answer: Downhill toward the stream

Reasoning: Our slope map shows a ridge above a stream, with arrows downhill into the stream. Water may also soak in or evaporate; not every drop follows one fixed route.

4. Must every drop take the same path?

Expected answer: No, several pathways are possible

Reasoning: Our slope map shows a ridge above a stream, with arrows downhill into the stream. Water may also soak in or evaporate; not every drop follows one fixed route.

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.