

Patterns, Forecasts & Climate

Tornado Alley Catwalk with Stormling

Learning target

Use weather patterns to make a limited prediction and distinguish climate.



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

Repeated observations; simple forecasts; weather versus climate; uncertainty

Open Tornado Alley Catwalk - 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.



Patterns, Forecasts & Climate - key ideas

1. The first clues

Weather is the condition now or over a short time. Climate describes long-term patterns across many years.

2. How the clues connect

Forecasts use observations and models to estimate future weather. They describe possibilities and can change when new evidence arrives.

3. Our evidence record

Our five-day log has rain on four days. Rain may be likely next under similar conditions, but this short record cannot establish the area's climate or guarantee tomorrow's weather.

Keep the science accurate

Use simple charts and forecasts, not advanced atmospheric physics. Safety decisions use supplied official guidance in later scripts.

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. Which describes climate?

Expected answer: Long-term weather patterns

Reasoning: Weather is the condition now or over a short time. Climate describes long-term patterns across many years.

2. What is a forecast?

Expected answer: An evidence-based estimate

Reasoning: Forecasts use observations and models to estimate future weather. They describe possibilities and can change when new evidence arrives.

3. What does four rainy days out of five suggest?

Expected answer: A recent rainy pattern

Reasoning: Our five-day log has rain on four days. Rain may be likely next under similar conditions, but this short record cannot establish the area's climate or guarantee tomorrow's weather.

4. What would help describe climate?

Expected answer: Records over many years

Reasoning: Weather is the condition now or over a short time. Climate describes long-term patterns across many years.

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.