



The Ocean's Thermostat

Podcast length: ~16 min

Lesson time: 40–50 min

Episode: *The Ocean's Thermostat*



Listen to the episode

Scan the code or visit takaromedia.com to hear “The Ocean's Thermostat and a Historic World Cup.”

Learning Focus

Understanding how ocean systems influence weather and climate, and how scientists evaluate possible solutions to climate-related challenges.

Learning Strands

Primary: Think Critically

Supporting: Understand the News,
Understand the World

Key Vocabulary

ecosystem

drought

climate

El Niño

rainfall

reflective

experiment

consequences

evidence

climate solution

Learning Objectives

By the end of this lesson, students will:

- Explain how differences in ocean temperature can affect weather and rainfall.
- Describe the proposed experiment using saltwater and clouds.
- Evaluate the potential benefits and risks of a proposed climate solution.
- Use evidence from the podcast to support their thinking.

Learning Outcomes

Students can:

- Explain in their own words why oceans are important to Earth's climate system.
- Describe the basic idea behind making clouds more reflective.
- Identify a potential benefit and a potential risk of the proposed experiment.
- Explain why scientists might test an idea on a small scale before using it more widely.
- Distinguish between an idea that is being researched and a solution that has been proven to work.

Materials Needed

- Podcast / audio
 - Board or chart paper
 - Optional: paper for the extension activity
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Before Listening 3–5 min

Write this question where the students can see it:

If you could make one part of Earth cooler to help reduce extreme weather, would you do it? Why or why not?

Give students a minute to think individually. Then ask:

What could go wrong if humans changed one part of a natural system?

Listen to the Podcast 15–16 min

Ask students to listen for three things:

1. What does the ocean do for Earth's climate?
2. What solution are scientists experimenting with?
3. What questions or concerns do the speakers raise about that solution?

Check for Understanding 8–10 min

1. **Recall:** Why does the episode describe the ocean as an important “temperature control” for the planet?
2. **Explain:** How can differences in ocean temperatures affect weather and rainfall in different parts of the world?
3. **Apply:** What happens when saltwater is sprayed into clouds, according to the experiment described in the episode?
4. **Reason:** Why might scientists test this idea on a small scale before trying it on a much larger scale?
5. **Evaluate:** Would you support using this technology to cool the ocean if it could help reduce climate-related problems? What information would you need before making your decision?

Remember: Encourage students to explain what evidence they would want to see before supporting the idea.

Choose One 10–12 min

OPTION A — DISCUSSION

Should We Change Nature to Solve a Problem?

- If humans have contributed to climate problems, does that mean humans should use technology to fix them? Why or why not?
- Is a solution still a good solution if it solves one problem but creates another?

Encourage students to think beyond whether an idea sounds clever or exciting. Ask: what evidence would make you more confident?

OPTION B — EXTENSION ACTIVITY

Climate Solution Test

Put students into small groups. Give them this challenge: your community is experiencing very hot temperatures. Your team has invented a new technology that could make the area cooler, but you don't yet know whether it could have unintended effects.

Each group creates a simple “test before we use it” plan, identifying:

1. What problem are we trying to solve?
2. How does our solution work?
3. What could go right?
4. What could go wrong?
5. What would we test first?
6. What evidence would convince us it is safe to use more widely?

Groups share their plans with the class.

Emphasize the scientific process: Idea → Small test → Collect evidence → Look for unexpected effects → Decide what to do next.

Exit Ticket 2–3 min

Students complete: “One thing I learned about how oceans affect our planet is _____.”