

ScienceNews

Activity Guide for Students: Thinking Through Climate Solutions

Directions:

Before starting this activity, read and answer questions about two *Science News* articles. During class, you will form a group and research a nonhuman species that is impacted by climate change. Based on your group's research, suggest a strategy to protect the species or its environment from an effect of climate change. Finally, your group will create and present an infographic that describes your chosen species, how it is affected by climate change and your proposed climate mitigation strategy.

The setup

For homework, read the online *Science News* article "[Probiotics help lab corals survive deadly heat stress](#)" and answer questions No. 1–5 below. Read the online *Science News* article "[The new UN climate change report shows there's no time for denial or delay](#)" and answer questions No. 6–8 below. Versions of both articles appear in the September 11, 2021 issue of *Science News*.

1. What problem is being addressed by the scientists in their research?
2. What solution(s) are scientists testing to address the problem?
3. List the research questions or topics addressed by the scientific research described in the article.
4. What are some possible downsides of the proposed solution?
5. Write a three-paragraph summary of the article's main points.
6. How might marine, aquatic and terrestrial ecosystems be affected by rising global temperatures?
7. Describe how natural systems other than coral reefs might be affected by rising global temperatures.
8. Brainstorm a list of other nonhuman species on which the impacts of climate change might be observed and traced. Consider marine, riparian, wetlands, arctic, savannah, prairie, desert and forest ecosystems.

Paired feedback

Trade summaries with a partner and answer the following questions.

1. What suggestions do you have to improve your partner's article summary?
2. What questions do you still have about the research findings after reading the summary?

Group research

Refer to your responses to the homework questions about the *Science News* article "[The new UN climate change report shows there's no time for denial or delay.](#)" With a group, choose a species that is impacted by climate change, use internet or library resources to research the species and answer the following questions.

1. What species are you researching?
2. In what type of ecosystem or biome does your species occur? Describe the species role in the ecosystem. What relationships does the species have with other species in the ecosystem?
3. Use internet or library resources to research how your chosen species has been affected by climate change or how it affects its environment as a result of climate change. Consult at least three resources. Be sure to record proper bibliographic information so that you can cite your sources.
4. Describe the species' role in the ecosystem and the relationships it has with other species in the ecosystem.
5. How is the species affected by climate change? How does the species affect its surroundings as it responds to climate change?
6. Choose one of the climate effects or outcomes described in the *Science News* article that directly affects the species you chose. Create a flow chart that describes the full cause-and-effect chain of events that leads from the climate change effect you chose to its impact on your chosen species.
7. Brainstorm a list of potential solutions that could use the species you chose to mitigate the effects of climate change on the ecosystem or another species. Make sure you consider how each potential solution could be tested.

8. What scientific questions could you ask that would help you plan an investigation to test a potential solution?

9. Choose an investigative question from which you can derive a testable hypothesis. State the testable hypothesis and describe a sample experiment that could test the hypothesis.

Communicate information

Use the information you gathered to construct an infographic.

1. Design an infographic that introduces your chosen species, describes its ecological role, illustrates the cause-and-effect chain for how climate change impacts the species and identifies one proposed solution to mitigate the effects of climate change. The infographic can be hand-drawn or computer-generated.

