



Ranger Rick

EDUCATOR'S GUIDE



EDUCATIONAL EXTENSIONS FOR THE DECEMBER/JANUARY 2021 ISSUE OF RANGER RICK® MAGAZINE

THINGS ARE HEATING UP

In “10 Cool Things About Ice” on pages 6–11, we learn how solid water helps keep our planet cool AND how important it is for wildlife! Help students better understand how the sun’s energy is reflected or absorbed by Earth’s natural and human-made surfaces. Take a walking field trip with science notebooks in tow. Along the walk, point out different surfaces and ask students to decide whether the sun’s energy is mostly absorbed or mostly reflected back into Earth’s atmosphere by each one. Once back in the classroom, have students pair up and share each surface they noted in their notebook. If pairs don’t agree, encourage them to use evidence to explain their reasoning. If pairs still cannot agree, they may ask another pair and research the correct response.

DON'T BREAK THE CHAIN

Every “character” plays an important role in the story of a food chain. Bromeliads are the stars of the tropical forest in “Sky High Pools,” pages 14–19. Have your students use the article to determine who else has a role in the bromeliad food chain. Start with the sun and then move to the producers and consumers. Once their food chain is complete, pose these questions for your students to answer:

- What would happen if you increased or decreased the number of consumers in your food chain?
- What would happen if you increased or decreased the number of producers in your food chain?

Have a class discussion. Allow students to share their responses. Pose one last question for discussion: How do changes to a food chain impact the larger food web?

THE STATE OF WEASELS

Read “Winter Weasel” on pages 20–23, and you’ll be a fan of these small carnivores. This article is about stoats, or short-tailed weasels, but there are different kinds of weasels throughout the United States. Choose a method to assign each student a state. Then have each student do research to learn more about the state’s native or non-native weasels. Students should draw or print out an outline of their chosen state, then place pictures and facts about the state’s weasels on it. Information to highlight could include:

- appearance (length/weight/colors)
- favorite foods
- range
- federal status designations, such as threatened or endangered
- unique facts

A PHOTOGRAPH IS WORTH A HUNDRED WORDS

The photographers featured in “Click!” on pages 30–35 have incredible stories to tell! Have your students identify an animal they’d like to photograph and draw it as they imagine they’d see it through a camera’s lens. Will they capture a broad perspective or zoom in on the tiniest detail? Then in (about) one hundred words, and on the back of their drawing, tell the story of how they got their perfect shot!



KEEPING AN EYE ON CORAL REEFS



In the **Ranger Rick's Adventures "Reef Troubles,"** on pages 26–29, we learned that coral reefs are in trouble because oceans are getting warmer. Scientists monitor the "stress" levels of coral reefs. Use the map below to answer the questions that follow.

CORAL BLEACHING

Have you ever wondered how a coral becomes bleached?

HEALTHY CORAL

1 Coral and algae depend on each other to survive.

Corals have a symbiotic relationship with microscopic algae called zooxanthellae that live in their tissues. These algae are the coral's primary food source and give them their color.

STRESSED CORAL

2 If stressed, algae leaves the coral.

When the symbiotic relationship becomes stressed due to increased ocean temperature or pollution, the algae leave the coral's tissue.

BLEACHED CORAL

3 Coral is left bleached and vulnerable.

Without the algae, the coral loses its major source of food, turns white or very pale, and is more susceptible to disease.

WHAT CAUSES CORAL BLEACHING?

- Change in ocean temperature**
Increased ocean temperature caused by climate change is the leading cause of coral bleaching.
- Runoff and pollution**
Storm generated precipitation can rapidly dilute ocean water and runoff can carry pollutants — these can bleach near-shore corals.
- Overexposure to sunlight**
When temperatures are high, high solar irradiance contributes to bleaching in shallow-water corals.
- Extreme low tides**
Exposure to the air during extreme low tides can cause bleaching in shallow corals.

NOAA's Coral Reef Conservation Program <http://coralreef.noaa.gov/>

https://oceanservice.noaa.gov/facts/coral_bleach.html

TURN TO NEXT PAGE FOR QUESTIONS



KEEPING AN EYE ON CORAL REEFS (CONTINUED)

- 1 Which of the following is not a cause of coral bleaching?
 - A. runoff and pollution
 - B. hurricanes
 - C. extreme low tides
 - D. change in ocean temperatures

- 2 In question 1, what main idea or concept is the question asking about?
 - A. finding patterns in coral reef systems
 - B. identifying producers and consumers
 - C. making a graph
 - D. gathering information from a scientific infographic

- 3 Why is the answer you chose for question 1 correct, and why are the other answer choices incorrect?

1-B, 2-D. B is the correct answer because it is not noted on the infographic as one of the coral bleaching causes. A, C, and D are not the right answers because they are found in the infographic under "What causes coral bleaching?"

ANSWER KEY





I'VE GOT SKILLS!

After reading "Click!" on pages 30–35, you might be wondering how to become a wildlife photographer. Circle the cameras that hold the skills—other than photography—a wildlife photographer would find useful.



Submit your best wildlife photos to Ranger Rick's photo contest!

Visit rangerrick.org/photo-contest for details.

ANSWER KEY

All of the skills above can help you become a more skilled wildlife photographer!

