Customize Your News Quiz

Because every classroom is different, it’s important to be able to customize materials for students. We’re here to help! We’ve recently added a new Google Quiz option for the Science News section (pages 2-7) in each issue. You can assign the quiz through your Google Classroom account with one easy click. Your students will complete the questions online and their answers will be scored automatically! You also have the ability to edit the questions—or even add your own. I hope that these quizzes will help your students build stronger testing strategies and help you save time.

Sincerely,

Patricia Janes, Editor
scienceworld@scholastic.com
Creature Close-Ups

**BIOLOGY**: Conservation, Endangered Species, Human-Animal Interactions

PAGES 8-11, Lexile 1000

**OBJECTIVE**

Gather information about an endangered animal to write a narrative essay describing how its survival is affected by humans.

**STANDARDS**

NGSS:
Practice: Obtaining, Evaluating, and Communicating Information
Crosscutting Concept: Cause and Effect
Core Idea: LS4.D: Biodiversity and Humans

COMMON CORE:
Writing: 3. Write narratives to develop real or imagined events using effective technique and well-chosen details.

TEKS: 7.10A, 8.11B, B.12E, E.9E

**FEATURED LESSON PLAN**

1. **ENGAGE**
   Before class, write down or project the following quote from the United States Geological Survey (USGS) Biological Resources Division on the board: “Endangered species are like fire alarms. They tell us about problems in our home we call Earth. If we listen to their alarm calls, they could help us improve our lives and the health of our planet.” When students come into the classroom, ask them to discuss this quote with a neighbor. What does this simile mean to them? Why is it important to discuss? Ask volunteers to share their thoughts about the quote. Then show students the cover of this issue with the image of a shoebill from Africa. Ask: How might unusual photos help protect endangered animals?

2. **EXPLORE**
   Have students open their magazines to pages 8-9. Read the article aloud as a class, asking for a volunteer to read each new paragraph. At the end of each section, pause and reflect on what you have learned. Prompt students to make observations by asking: What challenges does Tim Flach face in his work? Why does he think his work is important? What factors are leading to some animals being threatened? When you have finished reading, discuss the “Core Question” on page 11: How does Tim Flach think his style of photography could help endangered animals? Cite evidence from the text to support why this might be true.

3. **EXPLAIN**
   Print out the “Who’s at Risk” skills sheet from the teaching resources package at scholastic.com/scienceworld. Have students use the skills sheet to analyze the graph “Under Threat” on page 11.

4. **EVALUATE**
   Hand out the “An Animal’s Tale” skills sheet available at scholastic.com/scienceworld. Read over the instructions together and discuss how a first-person story from the perspective of an endangered animal could help people sympathize with that animal. Prompt students to consider how writing a story is similar to what Flach does with his photography. Students will complete their stories for homework.

5. **EXTEND**
   Have students evaluate each other’s work. Mix up the short stories and place one on each desk along with a blank piece of paper. Students will go around the room, read each other’s stories, and write feedback on the paper. Remind students to use sentence starters like: “One thing I think you did well was . . .” or “One thing I think you could improve is . . .” Have students use the feedback to revise and improve their stories.

**INTERDISCIPLINARY ASSESSMENT PACKAGE**

Available at scholastic.com/scienceworld.

**BIOLOGY**

**An Animal’s Tale**
Students will gather information to write a short story from the perspective of an endangered animal.

**BIOLOGY**

**Who’s at Risk?**
Students will analyze a graph to understand which groups make up the largest numbers of threatened animals.

**EARTH SCIENCE**

**History of Species Protection**
Students will analyze a timeline to understand how protection of endangered species has developed.
Can We Cool the Planet?

**ENGINEERING:** Environmental Engineering  //  **EARTH SCIENCE:** Climate & Weather, Atmosphere  //  **CHEMISTRY:** Chemical Reactions

**OBJECTIVE**
Write an informative essay about how geoengineering strategies could combat climate change.

**PAGES** 14-17, Lexile 1080

**NEED A LOWER READING LEVEL?**
Go to scholastic.com/scienceworld to access a version of this article with a lower reading level.

**STANDARDS**

**NGSS:**
- **Practice:** Obtaining, Evaluating, and Communicating Information
- **Crosscutting Concept:** Stability and Change
- **Core Idea:** ESS3.D: Global Climate Change

**COMMON CORE:**
- **Writing:** 2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately.

**TEKS:** 6.3D, 6.7A, 7.3D, 8.3D

**FEATURED LESSON PLAN**

1. **ENGAGE**
Open the NASA Earth Observatory website at earthobservatory.nasa.gov/features/CarbonCycle/page5.php and project the Carbon Dioxide Concentration and Global Temperature Anomaly graphs on the board. Ask students to make observations about each graph. What data are shown? Explain that a temperature anomaly is the difference between the average annual temperature and a baseline calculated by averaging temperatures over time. A positive anomaly means that measured temperatures were warmer than the baseline. Ask students to describe trends in the data over the past 50 years and make connections between the two graphs. (Temperatures have increased as carbon dioxide levels have increased.)

2. **EXPLORE**
Print out the “Geoengineering Strategies” skills sheet available in the teaching resources package at scholastic.com/scienceworld. Group the class into pairs. Have students open their magazines to pages 14-15 and read the article aloud with their partners. Students should take turns reading each section of the article aloud. As they read, students should fill in the table in step 1 of the skills sheet to record what they’ve learned about each geoengineering method described in the article. Ask for volunteers to use what they have learned to explain each of the geoengineering strategies shown on the main diagram on pages 14-15.

3. **EXPLAIN**
Hand out the “Analyze a Video” skills sheet and open the video “All About Climate Change” available at scholastic.com/scienceworld. Watch the video as a class, pausing at the times directed on the skills sheet. Give students time to write answers to each of the questions, and then discuss their responses. Discuss how the solutions presented by Bill Nye in the video are different from the geoengineering strategies described in the article. Ask: Do you think one type of strategy is more effective than the other? Why or why not? Are both important for reducing the effects of climate change? Why or why not?

4. **EVALUATE**
Have students complete step 2 of the “Geoengineering Strategies” skills sheet for homework. They will write a paragraph answering the “Core Question” on page 17: All the geoengineering strategies mentioned in the text would work in one of two main ways to cool the planet. What are they? Remind students to edit or rewrite their paragraphs as necessary before turning them in.

**INTERDISCIPLINARY ASSESSMENT PACKAGE**

- **EARTH SCIENCE**
  - **Analyze a Video**
    Students will analyze a video on climate change and integrate information from the article.

- **ENGINEERING**
  - **Geoengineering Strategies**
    Students will review the different geoengineering strategies from the article to answer the article’s core question.

- **PHYSICS**
  - **Gas Blanket**
    Students will analyze a diagram to understand how the greenhouse effect warms Earth.

**VIDEO EXTRA:**
Watch a video about climate change at scholastic.com/scienceworld.
LEARN ABOUT HARMFUL EFFECTS OF THE CHEMICALS IN SUNSCREEN, AND INVESTIGATE WHICH SUN PROTECTION FACTOR BEST ABSORBS UV RAYS.

OBJECTIVE

STANDARDS

NGSS:
Practice: Planning and Carrying Out Investigations
Crosscutting Concept: Cause and Effect

COMMON CORE:
Literacy in Science: 7. Integrate quantitative or technical information expressed in words in a text with a version expressed visually.
TEKS: 6.2B, 7.2B, 8.2B, 8.11C

FEATURED LESSON PLAN

ENGAGE
Open the magazine view of the digital edition at scholastic.com/scienceworld to pages 18-19. Use the spotlight tool to highlight the images of healthy and bleached coral reefs. Ask students to make observations about the images. Prompt them to describe which ecosystem they think is healthier.

EXPAND
Read aloud the “Core Question” on page 19: What evidence did scientists collect that demonstrated the danger certain sunscreen chemicals pose to corals? Have students open their magazines to pages 18-19 and read the article independently. As they read, students should write down information that helps them answer the Core Question. After students finish reading, give each student a copy of the “Building Reefs” skills sheet available in the teaching resources package at scholastic.com/scienceworld. Have them work with an elbow partner to answer the questions as they analyze the diagram “Coral Life Cycle” on page 19.

EXPLAIN
Separate students into groups of three or four and hand out the “Sun Blockers?” skills sheet available at scholastic.com/scienceworld. Have students work in their groups to plan an investigation to test how sunscreens with different sun protection factors (SPF) protect against the sun. As they write their procedures, walk around the room and ask each group to explain what the control for their experiment will be and why a control is important. (They should use a resealable bag containing UV beads not covered in sunscreen as a control.) What factors will they keep the same between samples and why? (Factors that will stay the same may include the amount of sunscreen used, the thickness of each sunscreen layer, and the amount of time in the sun.)

EVALUATE
Give each group time to conduct their experiments, analyze their data, and write their conclusions. When everyone has finished, reconvene as a class and discuss the results. Did each group come to the same conclusions? If not, discuss any variations in their procedures that may have led to different results.

EXTEND
Celebrate Earth Day by using what students learned to create a social media campaign informing other students about the environmental risks associated with certain sunscreens. Prompt them to consider the following as they create their campaign: How can you best get other students’ attention? What evidence should you include to support your argument? What steps would you encourage people to take to help protect coral reefs?

INTERDISCIPLINARY ASSESSMENT PACKAGE

AVAILABLE AT SCHOLASTIC.COM/SCIENCEWORLD
Ball Game Over?

EARTH SCIENCE: Natural Resources
BIOLOGY: Animal Behavior, Human-Animal Interaction, Plants

PAGES 20-22, Lexile 1120

NEED A LOWER READING LEVEL?
Go to scholastic.com/scienceworld to access a version of this article with a lower reading level.

OBJECTIVE
Analyze an interactive map to understand the spread of insects that destroy trees used to make baseball bats.

COMMON CORE:
Reading Informational Text:
2. Determine central ideas or themes of a text and analyze their development.

TEKS:
6.2E, 7.2E, 8.2E, B.12A, E.4F, E.9E

STANDARDS
NGSS:
Practice: Analyzing and Interpreting Data
Crosscutting Concept: Patterns
Core Idea: ESS3.A: Natural Resources

FEATURED LESSON PLAN

1 ENGAGE
Project the Emerald Ash Borer Information Network website emeraldashborer.info/timeline/by_county/index.html on the board. Explain to students that emerald ash borers are beetles that kill North American ash trees. Briefly explore the interactive map with the class. You can view how the insects have spread by slowly dragging the right-hand marker on the bar at the bottom of the page to the right. First show the data for 2002 only and ask students to make predictions about how far they think the insects have spread by 2019. Ask: Do new infestations occur only very close to old ones? How do you think the insects spread from one area to another? When you reach 2019, compare your predictions to the data on the map.

2 EXPLORE
Separate the class into small groups of three or four students. Remind students to think about how they could be better group members and what their groups need from them. Have students open their magazines to pages 20-21 and read the article. Instruct them to read each section silently and then pause and discuss what they learned as a group. As they read, have students complete the “What’s the Big Idea?” skills sheet on T6 (also found in the template collection at scholastic.com/scienceworld) to identify the article’s central ideas. Then ask students to consider the following questions: How did the problem with emerald ash borers start? Why are these insects a problem? What methods are scientists using to try to solve the problem?

3 EXPLAIN
Hand out the “Insect Invasion” skills sheet available in the teaching resources package at scholastic.com/scienceworld to each group. Have students work together to complete the skills sheet as they answer questions about the interactive map shown at the beginning of the lesson. Groups will need access to the internet.

4 EVALUATE
Distribute the “Create a Comic” skills sheet to each student. Discuss ways people bring attention to environmental causes. What are some important elements of a good campaign? (eye-catching images, surprising facts, or giving advice about how people can help) Tell students they will be creating a comic strip telling the story about how emerald ash borers are killing ash trees. Explain that their comic strips should be entertaining but also give important details to help people prevent spreading the insects further. Refer students back to their answers for the “What’s the Big Idea?” skills sheet to help them plan their comics.

INTERDISCIPLINARY ASSESSMENT PACKAGE

BIOLOGY
Create a Comic
Students will design and create a comic strip that illustrates the main idea of the article.

COMMON CORE TEMPLATE
What’s the Big Idea?
Students will complete a graphic organizer to identify the central ideas within each section of the article.

ENGINEERING
Building Bats
Students will analyze how manufacturers create high-quality baseball bats.

Available at scholastic.com/scienceworld.
WHEN READING A TEXT, IT'S IMPORTANT TO BE ABLE TO IDENTIFY ITS CENTRAL IDEAS, OR THE IMPORTANT POINTS THE AUTHOR IS MAKING. THE AUTHOR INCLUDES DETAILS IN THE TEXT TO SUPPORT EACH CENTRAL IDEA. A SHORT TEXT MAY HAVE ONLY ONE CENTRAL IDEA. IN A LONGER ARTICLE, YOU CAN TYPICALLY FIND A CENTRAL IDEA IN EACH OF ITS SECTIONS. EACH SECTION’S CENTRAL IDEA SUPPORTS THE CENTRAL IDEA OF THE WHOLE ARTICLE.

READ ONE OF THE ARTICLES IN THIS ISSUE OF SCIENCE WORLD. THEN USE THE TABLE BELOW TO IDENTIFY THE CENTRAL IDEA AND SUPPORTING DETAILS WITHIN EACH SECTION OF THAT ARTICLE.

<table>
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<tr>
<th>ARTICLE SECTION</th>
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CONCLUSIONS

1. What is the central idea of the entire article? Use evidence from your table to support your answer.

2. Other than the main text, what are some features of an article that can help you determine its central idea? Explain your answer.
Spanish photographer Dani Caxete took this photo of the International Space Station (ISS) as it passed in front of the sun on September 5, 2017. To capture the image, Caxete attached a camera to a telescope with a filter that reduced the brightness of the sun’s light. The ISS travels at a speed of 7.66 km (4.76 mi) per second. Caxete had to have quick reflexes to snap this picture since the ISS took only 0.6 seconds to zoom across the sun’s face. The sun is 150 million kilometers (93 million miles) away from Earth, but the ISS is much closer. The space station orbits Earth about 320 kilometers (200 miles) above the planet’s surface. Caxete just happened to photograph the space station as it drifted between two sunspots, named AR 12674 and AR 12673. These darker, cooler patches on the sun’s surface form in areas where the sun’s magnetic field is very strong. For more information, visit scholastic.com/scienceworld.
FOCUS ON AN NGSS PRACTICE: CARRYING OUT INVESTIGATIONS

Dustin Wolkis is helping protect Hawaii’s endangered plants by preserving their seeds and testing each seed’s viability. After your students read the Cool STEM Jobs article “Seed Saver” (p. 12), have them design their own experiments to test one factor of seed germination.

YOUR STUDENTS WILL:
- Read and interpret an article in this issue
- Plan and conduct an experiment that tests how planting depth affects seed germination
- Make a graph to analyze their results
- Make copies of the skills sheet “Sprouting Seeds,” available at scholastic.com/scienceworld.

COMING NEXT ISSUE

Your students will see the following topics covered in our last issue of the school year!

PHYSICS:
- Forces & Motion
- Engineers share the secrets behind some of the newest—and wildest—theme park rides.

BIOLOGY:
- Animal Anatomy
- Discover what might be causing a rise in jellyfish blooms around the world.

ENGINEERING:
- Design Process
- Read about how the reinvention of Silly Putty made wacky and wild putties all the rage.

EARTH SCIENCE:
- Space Science
- Learn how NASA is preparing to return to the moon after 50 years.

EARTH SCIENCE:
- Earth’s Waters
- Crosscutting Concept: Cause and Effect
- CORE IDEA: LS4.D: Biodiversity and Humans

ENGINEERING:
- Machines
- Crosscutting Concept: Stability and Change
- CORE IDEA: ESS3.D: Global Climate Change

CAN WE COOL THE PLANET?
- p. 14
- Crosscutting Concept: Stability and Change

CORAL KILLER
- p. 18
- Crosscutting Concept: Patterns
- CORE IDEA: ESS3.A: Natural Resources

BALL GAME OVER?
- p. 20
- Crosscutting Concept: Patterns
- CORE IDEA: ESS3.A: Natural Resources

ARTICLES NEXT GENERATION SCIENCE STANDARDS LESSON READING AND WRITING STANDARDS ONLINE MATERIALS

CREATURE CLOSE-UPS
- p. 8
- Lexile 1000
- PRACTICE: Obtaining, Evaluating, and Communicating Information
- CROSSCUTTING CONCEPT: Cause and Effect
- CORE IDEA: LS4.D: Biodiversity and Humans
- LITERACY IN SCIENCE: 7.
- Integrating quantitative or technical information expressed in words in a text with a version expressed visually.
- → Narrative-writing activity
- → Analyzing-data activity
- → Timeline activity

CAN WE COOL THE PLANET?
- p. 14
- Lexile 1080
- PRACTICE: Obtaining, Evaluating, and Communicating Information
- CROSSCUTTING CONCEPT: Stability and Change
- CORE IDEA: ESS3.D: Global Climate Change
- LITERACY IN SCIENCE: 7.
- Integrating quantitative or technical information expressed in words in a text with a version expressed visually.
- → Climate change video
- → Source-integration activity
- → Communicating-information activity
- → Integrating-visual-information activity

CORAL KILLER
- p. 18
- Lexile 1000
- PRACTICE: Planning and Carrying Out Investigations
- CROSSCUTTING CONCEPT: Cause and Effect
- LITERACY IN SCIENCE: 7.
- Integrating quantitative or technical information expressed in words in a text with a version expressed visually.
- → Integrating-visual-information activity
- → Conducting-investigation activity
- → Map activity

BALL GAME OVER?
- p. 20
- Lexile 1120
- PRACTICE: Analyzing and Interpreting Data
- CROSSCUTTING CONCEPT: Patterns
- CORE IDEA: ESS3.A: Natural Resources
- LITERACY IN SCIENCE: 7.
- Integrating quantitative or technical information expressed in words in a text with a version expressed visually.
- → How baseball bats are made video
- → Creating-a-comic-strip activity
- → Map activity
- → Defining-problems activity

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