

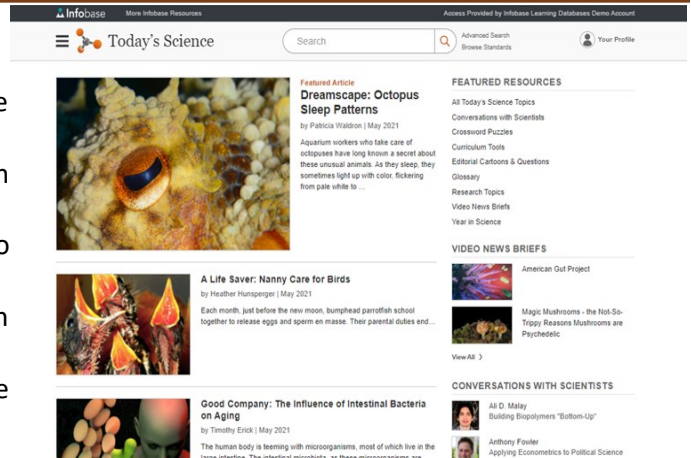


# EDUCATOR'S GUIDE

**Today's Science** bridges the gap between the science taught in the classroom and the science students read and hear about in the news. Written especially for students, this award-winning database provides students with a wealth of content spanning important advances in biology, chemistry, environmental science, space, physics, and technology that will help them comprehend and analyze real-world science while increasing those ever-important critical thinking skills. In addition to informative articles, **Today's Science** also includes a variety of rich resources that will engage your students and encourage learning: videos, images and diagrams, experiments, biographies, conversations with scientists, editorial cartoons, and a pop-up glossary. With an extensive back file illustrating how one scientific advance leads to another, **Today's Science** is an excellent resource for supporting science instruction while reinforcing science educators' traditional emphasis on the scientific method.

## Today's Science will help students to:

- ◆ relate what they learn in the science classroom to the outside world
- ◆ gain a deeper understanding of current science topics in the news
- ◆ appreciate the important and ongoing work scientists do each and every day
- ◆ utilize critical thinking skills to gather and discuss facts on a variety of science topics
- ◆ understand concepts, ideas, or processes through the use of videos, diagrams, and other visual media



Citation Information    MLA    APA    Chicago Manual of Style

Erick, Timothy. "COVID-19: Up Close and Personal." Today's Science, Infobase, Apr. 2020. <https://tsf.infobaselearning.com/recordurl.aspx?vid=105446&ID=44306>. Accessed 17 Apr. 2020.

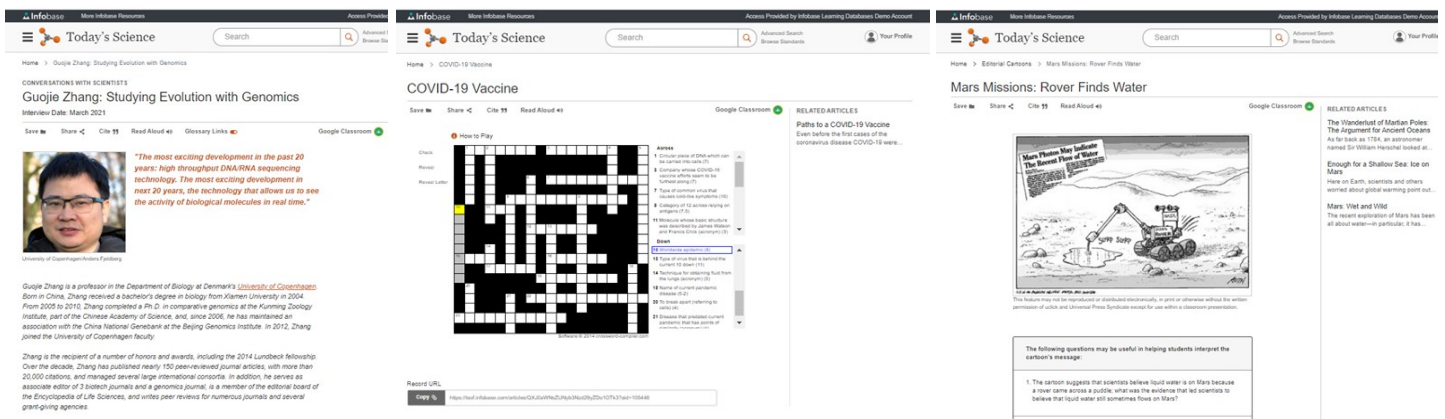


## Feature Highlights

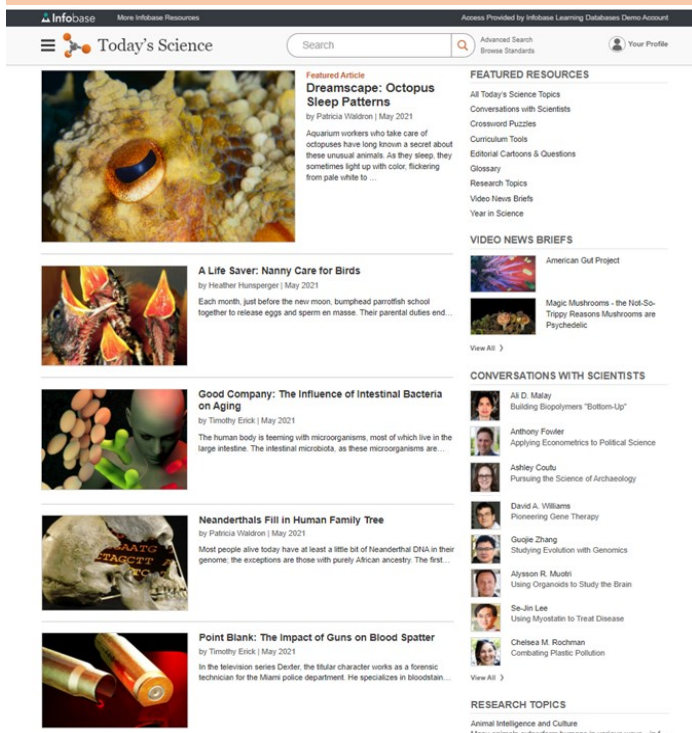
1. Dynamic citations in MLA, CMS, and APA formats
2. Authentication options such as library bar code, IP address, and Referring URL
3. A variety of integration options and partners, including Schoology, Canvas, Brightspace (formerly D2L), Follett One Search, and others
4. Google Tools for K-12 Educators: Share to Google Classroom; Google Translate (100+ languages)
5. Search by standards: state/provincial/international, National STEM Standards, Next Generation Science Standards, and AP standards to find correlating articles

# A Wealth of Content Designed to Encourage Students' Scientific Curiosity

1. **5,400+ Informative Articles** Covering a Dozen Main Topics and 200+ Subtopics, All Fully Hyperlinked
2. **720 Conversations with Scientists** Offering a Direct Window into the Lives of Scientists and the Work They Do
3. **40 Curated Research Topics** with Links to Related Articles to Use as a Starting Point for Research.
4. **365+ Inside Science Video News Briefs** From AIP Present Scientific Topics in the Form of Short, Engaging Videos
5. **300 Interactive Crossword Puzzles** Help Increase Comprehension & Vocabulary and Reinforce Scientific Concepts
6. **Thousands of Editorial Cartoons** Illustrate Scientific Principles and Engage Students in Critical Thinking
7. **8,000+ Embedded Pop-up Glossary Definitions** for Defining Scientific Concepts and Enhancing Vocabulary
8. **Thought-Provoking Discussion Questions** Accompany Every Article and Every Editorial Cartoon



## Robust Home Page



The *Today's Science* Homepage offers quick and easy access to all of the best and most useful content, providing both educators and student researchers with an enjoyable user experience.

- All Today's Science Topics
- Conversations with Scientists
- Crossword Puzzles
- Curriculum Tools
- Editorial Cartoons & Questions
- Glossary
- Research Topics
- Video News Briefs
- Year in Science

## Engage Students with Easily Accessible Multimedia and Interactive Content

### Use Videos to Enhance the Learning Experience

*Today's Science* includes hundreds of video news briefs to help reinforce visual learning, stimulate interest, and provide convenient overviews and discussion starters. All videos include full-text, searchable transcripts that are conveniently displayed directly below the video player. Each video also includes a dedicated record URL for online sharing, closed captions in English, and full citations in MLA and CMS for students who might be using these videos as part of a research project or for project-based learning.



Pollution and the Scent of a Flower



Magic Mushrooms - the Not-So-Trippy Reasons Mushrooms are Psychedelic



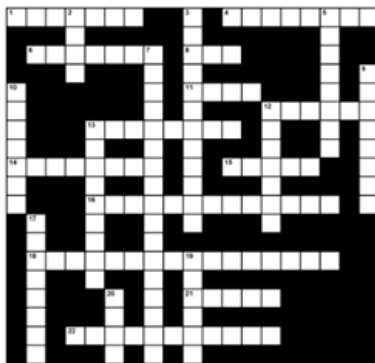
Wild Turkeys vs. Domestic Turkeys



American Gut Project

### COVID-19 Up Close

Print Download Share Save Interactive Crossword



#### ACROSS

1. Health problem of excessive weight (7)
4. Protein secreted by immune system; associated with 3 down (8)
6. These are found in the organ (in the upper torso) that handles oxygen exchange (3,4)
8. Common disease that causes discomfort and sometimes worse.

### Engaging Crossword Puzzles Reinforce Important Science Concepts

*Today's Science* includes hundreds of original, interactive crossword puzzles to help students learn and retain the key scientific terms and concepts used in *Today's Science's* news articles. Crossword puzzles are also available in a printable format and include answer keys. Topics include:

- \* *Alzheimer's Sensory Therapy*
- \* *Antimatter and Gravity*
- \* *Black Holes, White Holes*
- \* *Caterpillar Locomotion*
- \* *Climate Change Report*
- \* *Curiosity Lands on Mars*
- \* *Dark Matter and Mass Extinctions*
- \* *Fingertip Regrowth*
- \* *Global Warming*
- \* *Higgs Boson Coupling*
- \* *Mosquito Diseases*
- \* *Newton's Law Revisited*
- \* *Ocean Biodiversity*
- \* *Packing Tape Physics*
- \* *Secrets of the Genome*
- \* *Stem Cell Shake-Up*
- \* *Tomato Genetics*
- \* *Zombie Spiders*

### Thought-Provoking Editorial Cartoons and Challenging Discussion Questions

*Today's Science* contains thousands of editorial cartoons chosen specifically to support and illustrate a number of important scientific principles, to engage students in critical thinking, and to provide ample opportunities for them to consider and respond to document-based questions (DBQs). Topics include:



The following questions may be useful in helping students interpret the cartoon's message:

1. In March 2010, a group of about 40 researchers combined to assess the evidence so far gathered on what killed the dinosaurs. Does the cartoonist agree with the conclusion of the study? Can you name some other events that might explain the demise of the dinosaurs? [See *Dinosaurs Done in by Asteroid After All*, March 2010].
2. To what other, far more recent catastrophe of a different kind is the cartoonist linking the mass extinction of the dinosaurs?
3. The dinosaurs were the dominant land animals for more than 160 million years. Who are the dominant land animals now? Can you think of things that might doom them — other than their size?
4. What attitude is the cartoonist conveying in this cartoon? What persuasive techniques does the cartoonist use to support his way of thinking? Could the cartoonist have used other techniques to make his point more effectively?

- Bioterrorism: Are We Prepared?
- Cell Phones: Mixed Signals
- COVID-19: A Global Pandemic
- Darwin Revisited: Beetlemania
- Extrasolar Planets: Intelligent Life?
- Global Warming: King Coal
- Gulf Oil Spill: Finding Nemo
- Hurricane Katrina: The Next Bright Idea
- Jeopardy!: Man and Machine
- Mars Missions: Rover Finds Water
- Obesity: Kids in Trouble
- Pluto: Dwarf Planet
- Stem Cells: Hope or Hype
- Television: Cable-Ready



## Lesson and Project Ideas for Educators Using *Today's Science*

*Today's Science* is an ideal resource for bridging the gap between the science students learn in class and real-world scientific breakthroughs and discoveries. This versatile resource will ensure that students don't just learn about science but also engage with it while gaining a greater understanding of how the scientific method can be applied to everyday life, thus inviting students to think like scientists. Here are a few suggestions for using *Today's Science* in lessons and projects both in and out of the classroom.

### Classroom-Based Lesson and Project Ideas

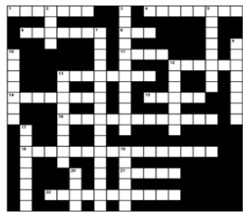
**Science of the Times** Ask students to choose one or more video news briefs from *Today's Science* that deals with a topic they're passionate about, such as climate change, healthy eating, space travel, etc. After viewing the video(s), students should then research the topic further using *Today's Science* and any other available resources to see what, if any, new information is available about their chosen topic. Based on this research, students should present their findings to the class by answering the following questions: How much has changed regarding this topic since the video was made? Do you find yourself agreeing more with the video(s) or with the information you found online? OPTIONAL: Challenge students to create their own video news brief that offers more current information about their chosen topic that they uncovered during their research.

**Topic-of-the-Month Club** Direct students to click "View All Research Topics" on the homepage and ask each student to select a topic from the list. From there, students will use the articles in *Today's Science* and any other available resources to research their topic and write a report according to pre-established requirements (number of pages, citation format, etc.). As needed, use the Curriculum Tools such as "Avoiding Plagiarism," "Evaluating Online Sources," "Writing a Research Paper," etc., to remind students not to copy someone else's work, to choose their sources carefully, and to thoughtfully complete each step in the research process. OPTIONAL: After a few months, reward students who have consistently written the best papers with the option to choose other possible assignment options such as a 3-D model, a video, a poster, etc.



**True or False?** Using information they find in *Today's Science*, plus any other available resources, have students choose a topic of interest from the list of research topics (after clicking "View All Research Topics" on the homepage) and find at least ten fascinating facts on their chosen subject. Have students write each of the facts on a separate index card. Divide the class into teams and have each team take turns reading one of their "facts" out loud, being careful to occasionally change some of the wording in order to present some true statements and some false ones. Members of the other teams should try to guess whether the statement read aloud was true or false, recording their guess on a piece of paper or via a notepad or other app on their phone. Assign points for each correct guess and, after all statements have been read, count up the points to see which team earned the most points. OPTIONAL: Award small prizes such as candy or a homework pass to the members of the team that earned the most points.

**Make Your Own Crossword Puzzle** *Today's Science* includes a number of fun and challenging crossword puzzles students can complete either on paper or interactively after reading about a topic in one or more related articles. For an added challenge, invite students to work either individually or in teams to create their own crossword puzzle on a topic of interest using information found in *Today's Science* or in other sources. Students may use an online puzzle creation tool such as Puzzlemaker, or they may design the puzzle by hand using pen/pencil and paper or any other materials they wish. Once all puzzles are completed, have students exchange them and try to solve all of the clues, allowing them to use *Today's Science* or to search online for answers.



**And Now For Today's News** The main goal of *Today's Science* is to report on the science that's happening in the news. Using that concept, ask each student go to the "Topic Index" tab and choose a topic that interests them to some degree. Working in groups, have students read one or more articles on their chosen topic (and conduct additional research using library materials or online sources) and then give an oral synopsis of the information as though they were news anchors delivering a report on the nightly news. Encourage students to have fun with this assignment! They may choose to designate one or more members of the group to occupy the anchor desk, while other members can serve as on-the-scene reporters, delivering different parts of the story from a variety of "locations" using green screens or created by hand in the form of painted backdrops and appropriate props. OPTIONAL: Record each news report and upload the videos to your school's YouTube channel or post them on your school's website.

## Lesson and Project Ideas for Educators Using *Today's Science*, cont'd.

### More Classroom-Based Lesson and Project Ideas

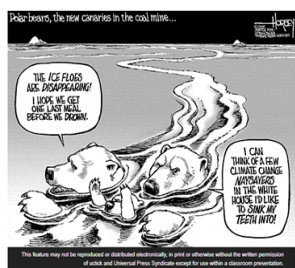
**Science in the News** This activity is designed to remind students that science isn't just something they learn about in the classroom but is also an ongoing process that touches so many of our lives in very real ways. Science is everywhere! Using *Today's Science*, the Internet, or a local or national newspaper, challenge students to search for something happening in the world that involves science. Some examples might be a new climate-related development, health crisis, the testing/approval of a new vaccine, or any number of other possible topics. Students should write a news article reporting on this event, with particular emphasis on the scientific information being presented. OPTIONAL: Students may choose to convert their article to a television news-type story and deliver it in front of the class, or make a video and share it with the class.

**Game On!** Who doesn't love playing games? This activity can be used as a review at the end of a lesson, or to prepare students for an upcoming quiz or test, or just as a fun, educational activity for whenever time allows. Using one or more articles from *Today's Science* that deal with a similar topic, along with a standard PowerPoint game template, choose a science-related subject area and create a Jeopardy-style game featuring a series of questions and answers, all of which should link back to information found in *Today's Science*. Divide the class into several teams and encourage students to work together with the other members of their team to answer the most questions. OPTIONAL: Award small prizes such as candy or a homework pass to the members of the team that answers the most questions correctly.

History	Nonlife-Process Science	Earth and Space Science	Life Science	Chemistry
10	10	10	10	10
20	20	20	20	20
30	30	30	30	30
40	40	40	40	40
50	50	50	50	50

**Interview with a Scientist** Direct students to the “Conversations with Scientists” section of the homepage and have them click on “View All Conversations with Scientists.” Once there, ask each student to select one of the available conversations from a topic of interest, such as Astronomy and Space, Medicine and Health, Technology, etc. There are more than enough conversations available so that no two students should be choosing the same one. Students should read through their chosen conversation, paying particular attention to how their work has impacted our lives to this day. After gaining a thorough understanding of the work being done by their chosen scientist, students should propose some new questions that they might ask in a follow-up interview. OPTIONAL: Students could try reaching out their scientist and ask their questions for real, either via email or during a phone call or virtual meeting. Remind students that scientists are extremely busy and they may not receive a reply.

**Draw My Life Opinion, Part One** First, locate the article “Using Editorial Cartoons” under Curriculum Tools (located at the bottom of any page of *Today's Science*). Activate students' prior knowledge regarding editorial cartoons by asking them to respond to the following questions, either orally as part of a class discussion, or in writing, to the best of their ability: What do you think the purpose of editorial cartoons is or should be? Should they always have a serious purpose? Are they meant to educate? Are cartoons meant to change readers' minds about a particular topic, or do they simply intend to inform and promote discussion? Do cartoons have to be funny to best get their point across? Why is humor an effective means to express an insight or point of view?



**Draw My Life Opinion, Part Two** Ask students to draw their own cartoons modeled after those found in *Today's Science*. To start, have them read news or historical coverage of a science topic they are studying. Advise them to jot down some notes reflecting their opinion on that topic, and to think about how they might go about making a visual representation of their opinions. When they have completed the cartoon itself, they should then write three thought-provoking questions to go with the editorial cartoons they created. Share these cartoons with the class and start a good discussion about the science topic!. OPTIONAL: Select the best cartoons and post them on the school or library's website, submit them to the school newspaper, or share them via the school's or the teacher's social media account.

**Additional Suggestions:** Write a summary and/or create an outline of an assigned article; Make a poster, draw a diagram, or create a 3-D model of a science-related concept based on their reading; After reading an article or a series of articles on a given topic, write down several questions about the article(s) and quiz each other; research and present on a science-related topic of interest.

## Help for Educators Using *Today's Science* for Distance Learning

**Distance Learning** allows you to continue the learning process anytime, anywhere. The virtual learning experience plays a key role in education and offers students another way to learn, connect and excel. Since Infobase's online resources are available 24/7, they are an ideal solution for your student's distance learning needs, offering access to curated content whenever and wherever they need it. Boasting easily accessible and engaging content and a user-friendly interface, our online resources make distance learning easy and stress-free. Below are some ideas and suggestions for using *Today's Science* in a virtual learning environment.

### Pop-up Glossary Ensures Comprehension Even While Students Engage in Virtual Learning

One of the many challenges of virtual instruction for teachers is their inability to work with students face-to-face to assist them with challenging vocabulary they encounter while reading subject-specific content. Thankfully, *Today's Science* includes an extensive glossary of all of the key scientific terms and principles used throughout the database in an easy-to-use A-to-Z index, as well as **pop-up glossaries** located in every article throughout the database. Students simply hover over the underlined term and a helpful definition immediately pops up, enabling them to continue reading without feeling frustrated by unfamiliar terminology, which typically results in decreased comprehension. Both the A-to-Z glossary and the pop-up glossary not only encourage science literacy but also help students with their vocabulary preparation for standardized tests.

#### FILED UNDER: AGE AND THE AGING PROCESS | CELLULAR BASIS OF DISEASE | DIET AND NUTRITION | DISEASE PREVENTION | GOVERNMENT HEALTH POLICY | INFECTIOUS DISEASES AND PANDEMICS + More

### COVID-19: Who Is Most at Risk?

**asymptomatic**  
In medicine, a disease in which a patient is a carrier for a disease or infection but experiences no symptoms, with respiratory ailments, the person usually has lower quantitative viral loads in secretions.

... person, infection might mean a bad intensive care unit (ICU). Yet another might be asymptomatic. They might never know they were infected but will still be able to spread the disease.



#### ACE2 and Inflammation

Obesity, diabetes and heart disease are never great for a person's health, but why should they be specific risk factors for this disease? Part of the answer may lie in how SARS-CoV-2 invades cells. The virus binds to a protein called angiotensin-converting enzyme 2 (ACE2), which is found on cells in our lungs and many other tissues. (See COVID-19: Up Close and Personal, April 2020.)

ACE2 breaks down a protein called **angiotensin II** that raises **blood pressure** and triggers **inflammation**. ACE2 is commonly used by **enzymes** (ACE) to increase ACE2 and increase a **protein** that drugs **block**. ACE2 is commonly used by **enzymes** (ACE) to increase ACE2 and increase a **protein** that drugs **block**.



### *Today's Science* also includes a full glossary of every term!

#### Glossary

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2	ACE2

### Creative At-Home Science-Based Activities and Projects for Students

**Make-At-Home Video News Brief** Select a science-related topic of interest—this might be an issue you feel passionately about or a question that particularly intrigues you - and record your own video news brief using your home, yard, or neighborhood as the setting. Videos should be no more than two or three minutes long and should present several interesting facts about your topic. Once completed, post your video on a class website/YouTube channel, or share it on social media.

**Be the Next "Science Guy/Girl"** Choose a topic or scientific principle of interest from *Today's Science* and create a video of yourself explaining this topic or principle to others as if you were the host of a science-based television show. Try to have fun and be as goofy or offbeat as possible. Once completed, post your video on a class website/YouTube channel, or share it on social media.

**Today's Science: Junior Edition** Since *Today's Science* is essentially aimed at students in middle school and above, your task is to create a "junior edition" for younger siblings or to share with students in lower grades! Choose a topic and select one or more articles from *Today's Science* about this topic. Use the information presented to write one or more articles that would be easily understood by kids in much lower grades (K-4). Present your work to your young siblings and be sure to share it with your teacher!

### Use *Today's Science* to Extend Learning Beyond the Classroom

- Assign one or more of the **interactive crossword puzzles** to your students (see page 3 of this guide for more information), either to review or reinforce previously taught concepts or to support or engage students who are behind or ahead of the others.
- Direct students to select any of the thousands of engaging **editorial cartoons** (see page 3 of this guide for more information) and invite them to first respond to the available discussion questions and then perhaps come up with questions of their own!

**Your feedback is important to us!** Tell us how you like *Today's Science* and share with us the ways you integrate this resource into your lessons. We love to hear your feedback—positive or negative. Please email: [onlinesales@infobaselearning.com](mailto:onlinesales@infobaselearning.com) and type "Today's Science Feedback" into the Subject line of your email.