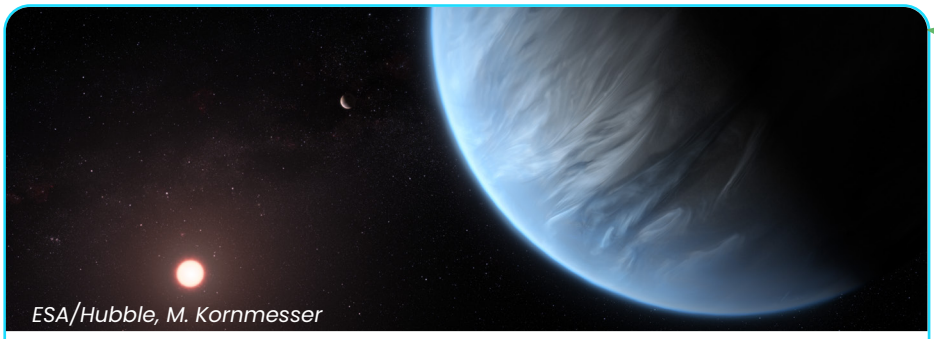
Content Spotlight:

Space Aliens? . . . Not So Fast!: Evaluating Science in the News

Britannica Expedition:LEARN!



ESA/Hubble, M. Kornmesser

Is there life on other planets? Recently, NASA announced an amazing discovery. Analysis of data from the James Webb Space Telescope indicates that an exoplanet, called K2-18b, has gases in its atmosphere that just might indicate the presence of living things.

Exoplanets are planets outside our solar system. They orbit stars other than the Sun and are vast distances from Earth. There are more than 5,000 confirmed exoplanets out there, with many, many more waiting to be confirmed. Is exoplanet K2-18b home to living things? How does exoplanet K2-18b compare to the eight planets in our solar system? There's so much to learn about this exciting breakthrough.

Why It Matters

Where do we get information about scientific breakthroughs? The answer might be anything from social media to academic journals. No matter where the information comes from, it must be carefully evaluated. Providing students with the skills needed to obtain reliable information about the world they live in (and other "worlds" in distant space!) can help them avoid dangerous misinformation and **become well-informed consumers of scientific information**.

See how Britannica experts teach the featured lesson!

Britannica's Expedition: Learn! Science platform contains **hundreds of curriculum-aligned lessons** that develop foundational science knowledge and build STEM skills.

Click the image below to preview The Solar System lesson.

GRADES 6 - 8

The Solar System

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Evaluating Resources

Website Name: Website Address:

Criteria	Questions	Yes	No
Authorship	Is the author an authority or a reliable source on your subject?		
Publishing Body (Publisher)	Is the website from a recognized organization or publisher?		
Point of View or Bias	Is this website neutral and unbiased?		
Source Credibility and Verifiability	Does the website include a bibliography and acknowledge its sources? Can the information on the website be confirmed or verified?		
Currency	Is the information current and up-to-date?		
Conclusion	Is this website a good source of information for this research project?		

This checklist is based on the website "Evaluating Information Found on the Internet" written by Elizabeth E. Kirk and published by Johns Hopkins University's Sheridan Libraries. This website can be found at https://guides.library.jhu.edu/evaluate

In Practice

Evaluate Information

Use the **Evaluating Resources graphic organiser** to help students assess the accuracy and credibility of information about scientific breakthroughs and discoveries.

- Review and discuss the criteria in the left column.
- Have students assess an article using the questions in the middle column.
- Encourage students to evaluate the overall reliability of the article after they respond to all of the questions.

Australian Curriculum, Version 9.0

Strand: Science inquiry | Sub-strand: Evaluating

Students learn to consider the quality of available evidence, and the merit or significance of a claim, proposition, explanation or argument with reference to that evidence. Students engage in the practices involved in refining and revising scientific ideas.

Learn more:
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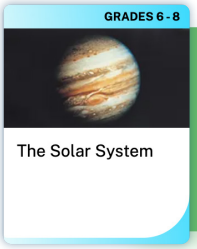
Classroom Guide
The Solar System

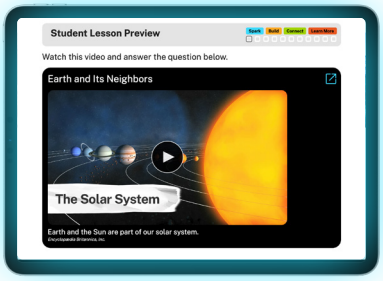
Britannica Expedition:LEARN!



Get free access to this lesson and more in Expedition: Learn!
Request Now

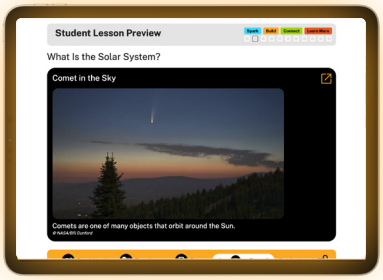
Spark

- Play the **Spark** video and give students time to respond to the question.
- Invite students to share their answers. Use their responses to prompt discussion and elicit questions to be explored during the lesson.
- Then, invite students to participate in a word association activity to activate prior knowledge about the lesson's vocabulary terms. After students complete the lesson, they can revise their word lists based on the knowledge they have gained.



Build

- Model the first two **Build** pages for students by annotating the text and demonstrating how to extract important takeaways.
- Guide students through the two assessment questions by thinking aloud as you critically consider the answer choices and illustrate how to eliminate incorrect choices.
- Display the following questions to guide students' thinking as they read:
  - What are some objects other than planets found in the solar system?
  - What force keeps all objects in the solar system in orbit around the Sun?
  - What are some properties of the inner planets? What are some properties of the outer planets?

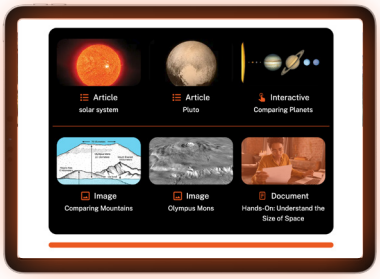


Connect

- Arrange students in pairs or small groups to complete **Connect** pages 7, 8, and 9.
- Use the **Assessment Item Analysis graphic organiser** to explain how to break down questions.
- Review responses as a class by discussing key takeaways and highlighting information about constructing and using models.
- For the final short-response **Connect** question, prompt students to work independently to write and submit their response. Then, invite them to create a poster based on their response.

Learn More

- Have students read the article "Pluto" and ask: What is a dwarf planet? Why is Pluto considered a dwarf planet? Do you agree with Pluto's current classification as a dwarf planet? Why or why not?
- Assign the Hands-On Activity **"Understand the Size of Space"** to encourage students to analyse and interpret data about solar system objects.



Extend

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Create a Travel Brochure

- Ask students to choose a planet (other than Earth) and create an imaginative travel brochure that promotes a visit to their planet. Students can use information found in the lesson if they choose to focus on a planet in our solar system. Students who want to focus on an exoplanet, such as exoplanet K2-18b, should gather information from reliable sources. Students can be creative and use a fun, visually engaging style, but the brochure should include factual information about their planet, such as:
  - its distance from the Sun (or the star it orbits)
  - its distance from Earth
  - its diameter
  - the number of moons it has.

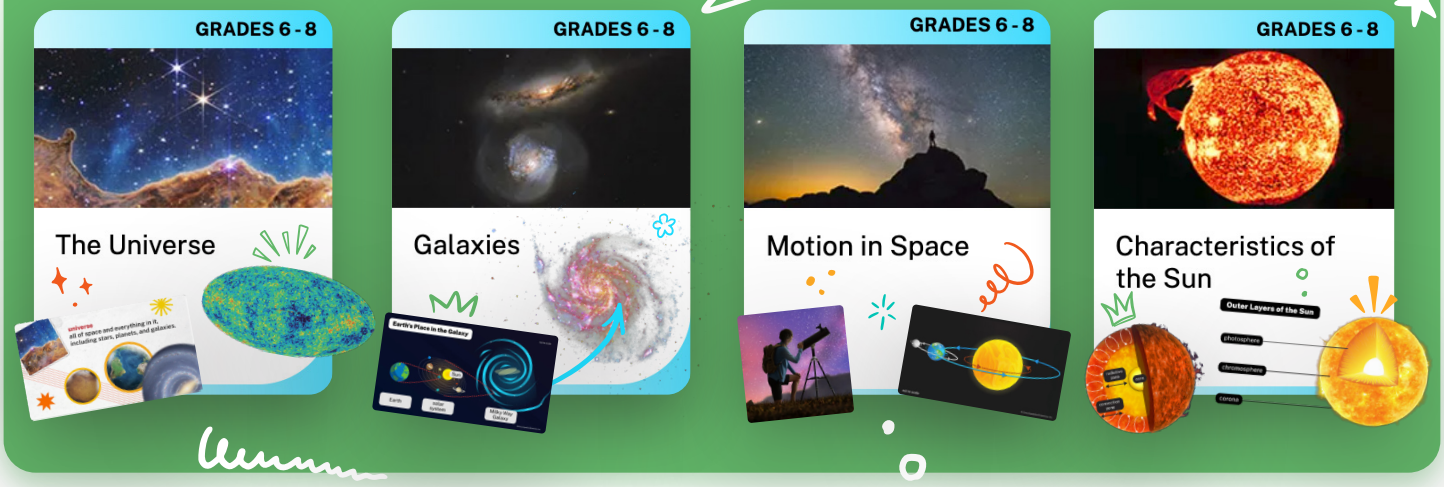
Explore Careers

- Working within your school's guidelines and firewalls, invite students to research a career in planetary science and then create a blog post from the perspective of someone who works in the field. Blog posts should focus on "a day in the life" of a planetary science professional. Students can choose from the following specialities if desired: planetary astronomy (the observation and study of planets), planetary geology (the study of the geology of other planets), planetary atmospheric science or meteorology (the study of the atmospheres of other planets), exoplanetology (the search for and study of planets outside our solar system), astrobiology (the study of the origin of life, the habitability of other planets, and extraterrestrial life).

Apply Ideas

- Explain to students that a scale model is a three-dimensional representation of an object or system.
- Ask students to work in pairs to come up with as many familiar scale models as possible and discuss how each scale model helps them understand an idea.
- After students have time to create their lists and discuss ideas with their partners, ask them to share their ideas with the class. Connect the discussion to the solar system by asking how scale models of the solar system are helpful.

Continue the *Expedition* with these related lessons!



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