

About this Issue

The article "[How Earth got its moon](#)" describes theories of how the Earth's moon formed. Did it form as the result of a collision with a large protoplanet called Theia, or did multiple impacts create many mini moons that then merged over time? Computer modeling and isotopic analyses provide some data used to support or refute current theories. Scientists are still searching for other moon formation ideas and ways to test them.

Students can focus on details in the article, follow connections to earlier articles about the origins of Earth's moon, explore cross-curricular connections to other major science topics and calculate relevant lunar properties for themselves. *Science News for Students* provides another version of this article written at a lower Lexile level (7.9 readability score):

"[How Earth got its moon](#)." [Power Words](#) are defined at the end of the *Science News for Students* article.

Want to introduce your students to an interesting STEM career related to this article? Check out [Cool Jobs: Probing Pluto](#) by *Science News for Students*.

Women's contributions to scientific endeavors, including planetary science, have been the subject of award-winning movies this year including *Hidden Figures*, which focused on African-American mathematicians who were crucial to the first launch of an American into space orbit. Want to introduce your students to some other women pursuing STEM careers? Check out "[A woman's place is in science](#)" in *Science News for Students*.

Connections to Curricula:

- History of the Earth
- Computer modeling
- Thermodynamics
- Geology
- Igneous rocks
- Solar system
- Asteroids and meteorites
- Angular momentum
- Centrifugal/centripetal acceleration
- Gravitational acceleration
- Isotopes

What's in this Guide?

- [Article-Based Observation](#): These questions focus on reading and content comprehension by drawing on information found in the article "[How Earth got its moon](#)." Questions focus on ideas about the origin of Earth's moon and evidence that supports multiple explanations of its formation.
- [Quest Through the Archives](#): With Internet access and your school's digital access to *Science News*, your students can use this short section to explore other articles about our moon's origin as reported by *Science News* since 1922.
- [Cross-Curricular Discussion](#): These questions and extension prompts connect to the article "[How Earth got its moon](#)" and encourage students to think in more detail about scientific areas related to

the articles. The section is divided roughly by science subdiscipline for educators who would like to focus on one topic area. The extension prompts for each subdiscipline include some that are topic-specific and others that are more conceptually advanced. **Earth and Space Sciences questions** address types of rocks and minerals found on Earth, how they formed and how they might provide clues to the moon's formation. **Physical and Chemical Sciences questions** involve defining isotopes and physical applications of measuring isotope ratios. **Biological Sciences and Engineering questions** concern biomedical applications of certain isotopes and questions regarding isotopic measuring techniques and other applications.

- **Activity:** Students can calculate the angular momentum and density of the moon and consider the implications of the results for various theories of the moon's origin.

Standards Alignment

Next Generation Science	Common Core
Earth's Place in the Universe: History of Earth: HS-ESS1-5 , HS-ESS1-6	ELA Standards: Reading Informational Text (RI): 1, 2, 4, 5, 7
Motion and Stability: Forces and Interactions: HS-PS2-2 , HS-PS2-3 , HS-PS2-4	ELA Standards: Writing (W): 1, 2, 3, 4, 6, 7, 9
Matter and Its Interactions: HS-PS1-5 , HS-PS1-8	ELA Standards: Speaking and Listening (SL): 1, 2, 4, 6
Engineering Design: HS-ETS1-2	ELA Standards: Reading for Literacy in Science and Technical Subjects (RST): 1, 2, 3, 4, 5, 7, 8, 9
	ELA Standards: Writing Literacy in History/Social Studies and Science and Technical Subjects (WHST): 1, 2, 4, 6, 7, 9