

Comets and Asteroids

Part II

Purpose

The purpose of these activities is to learn about comets and asteroids, exploring their compositions and the paths they each take through space.

Students will be able to

1. Understand the components of a comet, noting in particular the different types of comet tails.
2. Describe the path of a comet.
3. Describe what happens as a comet nears the sun.
4. Understand the components of an asteroid.
5. Describe the path of an asteroid.

Important Vocabulary (key terms in bold)

comet	coma	halo	nucleus	head
tail	gas	water	envelope	ion tail
dust tail	ecliptic	parallax	orbit	solar wind
asteroid	planetoid	asteroid belt	Kirkwood gaps	impact
Trojan	Near-Earth	Ceres	Ida	crater
meteorite	meteoroid	meteor		

About Asteroids

Students read about and view images of asteroids. (Alternatively, the teacher can play a recorded reading of the background information as the images are viewed.) This is followed by discussion about asteroids, including topics such as asteroid origins and composition. Students define terms related to asteroids, taking notes for future reference.

Comets and Asteroids: What's the Difference?

After reviewing notes regarding comets, students compare and contrast comets and asteroids. Students note differences and similarities on activity sheets. (Note: a Venn diagram can be used for this comparison. A printable version, along with answer key, can be found online at the Enchanted Learning website, <http://www.enchantedlearning.com/subjects/astronomy/comets/weblinks.shtml>.)

(** See below for printable activity sheet.)

Helpful Resources

1. A very student-friendly read, great for basic background on asteroids
<http://whyfiles.org/074asteroid/index.html>
2. Short articles relating to asteroids
<http://skyandtelescope.com/observing/objects/asteroids/>
3. More good background information, including a helpful table for asteroid comparisons
<http://www.nineplanets.org/asteroids.html>
4. An interesting site with very basic information
<http://www.surfnetkids.com/asteroids.htm>
5. A book about comets and asteroids, written for students from about age 12
Comets and Asteroids, by Don Nardo, © 2003
6. A book about asteroids, written for students from about age 12
Ultimate Asteroid Book: the Inside Story on the Threat from the Skies, by Mary A. Barnes, Ellen Krieger (Editor), Kathleen Duey, © 1998

KEY

Comets and Asteroids

What's the Difference?

There are some differences and some similarities between comets and asteroids. Do you know what they are? Place a 'C' for comet, an 'A' for asteroid, or 'C' and 'A' for both next to each phrase/sentence below, which describes some aspect of either or both.

1. C has a halo, or coma around its nucleus
2. A made of rock and/or metal
3. AC orbits the Sun
4. A has no tail
5. A also known as minor planets, or planetoids
6. C made of dust and ice
7. AC leave impact craters on planets/moons after crashing
8. C Many are found in the Kuiper Belt, beyond Pluto.
9. C Halley's and Hale-Bopp are famous.
10. A Most are found in the major orbital path is between Mars and Jupiter.
11. A Called near-Earth objects, these travel close to the sun, and cross the Earth's orbit.
12. C Millions of these make up the Oort Cloud, which extends from the Kuiper Belt partway to the nearest star.
13. A The Trojan type orbit the Sun in the same orbit as Jupiter.
14. C "Sungrazers" crash into or pass the Sun very closely and burn up.
15. A largest known is Ceres
16. C has an ion tail, and a dust and gas tail

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