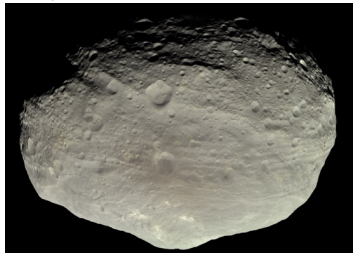
Asteroids, Meteors and Meteoroids: What's the difference?

An asteroid is a piece of rock left over from the birth of the solar system. Asteroids orbit the sun much like the planets do. They range in size from smaller than a school bus to even larger than the Grand Canyon. Currently, scientists have counted 958,636 different asteroids in the solar system.



The Dawn mission visited Vesta, the largest asteroid in the Asteroid Belt, in 2011 to create detailed maps. We now know that Vesta is dry and rocky.

Most asteroids are located between Mars and Jupiter in an area called the asteroid belt. Near Earth objects, or "NEOs" for short, are asteroids located close to Earth.

Asteroids are often confused with meteoroids, meteors, and meteorites. Although these words sound very similar, they are all different objects. A meteoroid is a tiny chunk of rock that broke off an asteroid or comet. This can happen when two asteroids collide in space, or when comets begin to melt. The smallest meteoroids are the size of a single grain of sand, and the largest are about three feet long. Even the largest meteoroids are smaller than the tiniest asteroid.

If a meteoroid gets too close to Earth, it will begin to burn and create a bright streak of light in the sky. When this happens, we call it a meteor. You might have also heard it called a "shooting star," even though they're not stars at all. The best time to spot a meteor is during a meteor shower, when you can see many shooting stars coming from a small part of the sky. During the Perseid meteor shower in mid-August and the Geminid meteor shower in mid-December, you can see between 50 and 75 meteors per hour, or about one per minute!

Here we see several meteors, or shooting stars, during a meteor shower.

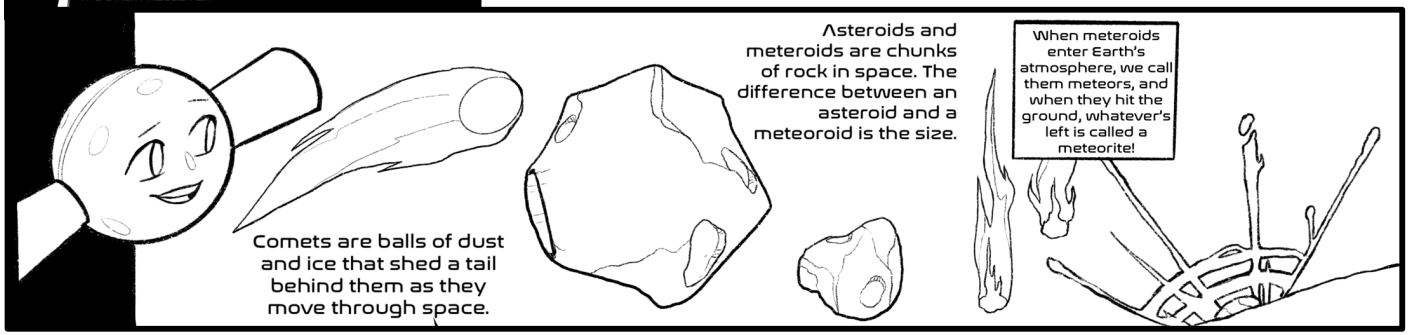
This meteorite is made mostly of iron. It landed in Russia in 1947.

Sometimes, a small piece of the meteor isn't completely burnt up in the atmosphere. When it lands on Earth's surface, we call it a meteorite. You can find meteorites anywhere on Earth, but scientists usually look for them in vast, dry areas (like a desert) and icy regions (like Antarctica) because they are much easier to spot. Meteorites teach us what asteroids are made of and give us hints about what our solar system used to look like.

Asteroids, meteoroids, meteors and meteorites are all unique objects that provide helpful hints about the history of our solar system.

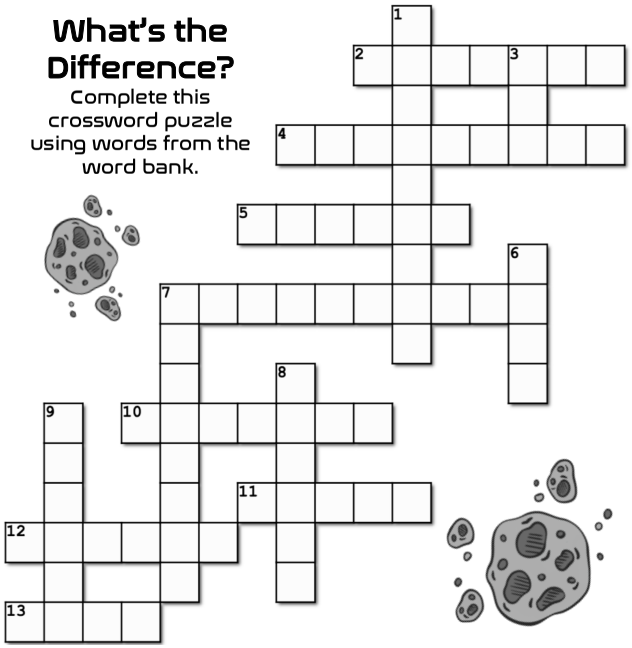
Konnie THE STAR PROJECTOR — COMETS AND ASTEROIDS

Konnie is the star projector in our planetarium.
Color in comets, asteroids and more as you explore with her!



What's the Difference?

Complete this crossword puzzle using words from the word bank.



Across

2. The name of a meteor shower that happens every December.
4. This is a small piece of an asteroid.
5. A dry place where scientists search for meteorites.
7. Scientists look for meteorites on this continent.
10. The name of a meteor shower that happens every August.
11. The largest asteroid in the asteroid belt is named ____.
12. A meteorite landed in this country in 1947.
13. Most asteroids in the solar system are found in the asteroid ____.

Down

1 A ____ lands on Earth's surface.
3. Short for "Near Earth Object."
6. Small meteorites are the size of a grain of ____.
7. This large rock orbits the sun.
8. This object is also called a "shooting star."
9. During some meteor showers, you can see one meteor per ____.

Word Bank

Antarctica	Meteoroid
Asteroid	Minute
Belt	NEO
Desert	Perseid
Geminid	Russia
Meteor	Sand
Meteorite	Vesta

When is the next meteor shower?

The **American Meteor Society** is a group of meteor enthusiasts. Learn how to spot a meteor, when the next meteor shower is, and more at their website: **amsmeteors.org**