What’s That Up In The Sky???

The difference between Comets, Meteors and Asteroids
Comets .......... Dirty Chunks of Ice

https://www.youtube.com/watch?v=fGTq14qCwJk

* They look like a star with a ghostly white tail.

* The term "comet" comes from the Greek “aster kometes”, which means “long-haired star”.

Comets are dirty chunks of ice.
Comets........Dirty Chunks of Ice

The icy, hard part of the comet is called the nucleus. The gas and dust are released and form an atmosphere around the comet called the coma. The comet's tail is made of material from the comet.
Comets………Dirty Chunks of Ice

They can be seen when they pass by the sun and the sun’s heat melts them.

The tail always points away from the sun due to the solar winds (movement of heat away from sun).
Comets —— Dirty Chunks of Ice

They travel around the sun in long looping orbits that bring them near the sun and to other parts of the solar system.

http://www.windows.ucar.edu/tour/link=/comets/comet_model_interactive.html
Asteroids are **LARGE** chunks of rock and metal that orbit the sun. They range from just over ½ a mile (1km) to a few hundred miles in diameter (diameter = how wide across).
Asteroids......Rockin’ Around

Most **asteroids** travel **in the wide gap between the inner planets and outer planets** (between Mars and Jupiter).

Some travel in paths across Mar’s orbit and some even cross in Earth’s orbit.
Asteroids......Rockin’ Around

Most of the chunks or rock and metal in space came together long ago to form the planets and moons.

Asteroids are leftover pieces of rock from when the solar system was formed.
Meteors...Shooting Stars or Space Garbage

https://www.youtube.com/watch?v=ILyCtPmuZ8Y

Meteors are also called **shooting stars**

Meteors are small pieces of **space debris (junk)** pulled into Earth’s atmosphere by gravity.

Meteorites are metallic rocks broken off from **asteroids and comets**

Meteors fall to Earth at speeds from **22,000 MPH to 64,000 MPH** (8x shuttle speed)
Most meteors are only as big as a grain of sand and burn up while entering Earth’s Atmosphere.

Scientists have studied craters that show that one about the size of a house landed about 250,000 years ago!

Is that what killed the dinosaurs?
Entering the Earth’s atmosphere so fast creates a lot of friction. The friction causes them to heat up and give off light.

The light trail may stay in the sky for up to 30 minutes and end with a “POP”.

REALLY bright meteors are called FIREBALLS.
Meteors...Shooting Stars or Space Garbage

Meteors are falling all the time.

http://earthsky.org/astronomy-essentials/earthsks-meteor-shower-guide

On a clear, dark night you may see one.

During the annual meteor storms, you may see 100 per hour.
What’s *That Up In The Sky??*

[https://www.youtube.com/watch?v=kAJHVII3-_0](https://www.youtube.com/watch?v=kAJHVII3-_0)

<table>
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<tr>
<th>COMETS</th>
<th>ASTEROIDS</th>
<th>METEORS</th>
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<tbody>
<tr>
<td>Made of ice-</td>
<td>Made of rock and metal</td>
<td>Made of rock and metal</td>
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<td>have tails</td>
<td>(Usually) Stay in space</td>
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<tr>
<td>Stay in space</td>
<td>Orbit the sun</td>
<td>Fall into Earth’s atmosphere</td>
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<tr>
<td>Orbit the sun</td>
<td>Orbit the sun</td>
<td>Gravity pulls to Earth; they burn up as they fall</td>
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Meteor Madness!!!

- Played like “Battle Ship”
- Secretly place your planets
- One guess per turn (example: A10)
- Keep track of your guesses and your opponents guesses!
- Destroy all of your opponents planets to win!
  OR
  Person with the most hits wins!
How big do the planets need to be?