

**Links with National Curriculum:** Space Physics - The main features of the Solar System

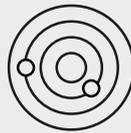
**Matter:** Physical changes - Solids, Liquids & Gases Sublimation.

## Our Earth Under Threat

Name:

School:

Date:



To begin the trail, go to the **Our Solar System** gallery

### Question 1

Find the Martian meteorite.

**How do scientists conclude this rock came from Mars?**

**Formed 1.38 billion years ago so is much younger than meteorites forming from asteroids and it contains more varied minerals than those found in asteroids.**

### Question 2

Find the asteroid belt.

**Why are asteroids valuable?**

**They can tell us what conditions were like when our Sun was born and they hold a wealth of rare metals.**



## Question 3

Find Jupiter.

**In 1994 Jupiter had a collision with comet Shoemaker-Levy.  
How does Jupiter keep life on Earth safe?**

**Acts as a cosmic vacuum cleaner. The strong pull of Jupiter's gravity distorts the orbits of comets and asteroids and keeps them away from Earth.**

## Question 4

Now find Calisto, one of Jupiter's moons.

**Why is it the most cratered object in the solar system?**

**4 billion year old, almost as old as the Solar System and there has been little, if any, geological activity to renew the surface.**

## Question 5

Now go to the comets at the edge of the solar system.

**Why are scientists interested in comets?**

*(Hint, find the Rendezvous with a Comet panel).*

**They are the oldest material in the Solar System. They can tell us what conditions were like when planets were first forming.**

## Question 6

Find the computer terminal called Destroy the Planet.

**Approximately how many casualties would there be if a very big meteorite hit?**

**10,000,000 +**



## Question 7

Find the Near Earth Objects.  
**How fast do they travel?**

**10 - 30 kilometres per second.**

## Question 8

Find the astronomers who look at Near Earth Objects.  
**What instrument does Dr John Davies use to discover what asteroids are made of?**

**Optical telescope - detects light & infrared telescope - detects heat.**

## Question 9

Examine the meteorites on display.  
**How do they differ from Earth rocks?**

**Magnetic, as most meteorites contain iron & nickel and the surface is different, can look dark and dimpled.**



Now leave the gallery and go to **The Universe.**



## Question 10

Find the tools of the trade section.

**We use telescopes to search for Near Earth Objects. When viewing the sky with telescopes, what makes it difficult and why?**

**The atmosphere. It's always moving so by the time starlight has passed through the atmosphere to a telescope, it's distorted.**

## Question 11

**How do we solve this problem?**

**Build telescopes on mountains, launch them into space or use adaptive optics.**



Now go to the **Into Space** gallery and find the Orlan spacesuit.

## Question 12

When you're in space, it's not just large rocks that pose a threat. An astronaut's spacesuit protects them from high speed micrometeorites.

**List three other things spacesuits need to protect against.**

**Temperature extremes.**

**High-energy radiation.**

**Loss of pressure as space is a vacuum.**



# Question 13

Find the Protecting Crew section

**Have a look at the objects damaged by micrometeorites, where did the solar cells come from?**

**Hubble Space Telescope.**

# Congratulations!

You have finished the Our Earth Under Threat trail.