Visit Trail

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 causalities 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 astronauts 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**.**