

Mission to Mars: Crib Sheet For Parents

To get the most out of this activity it would be good for the children to discuss the challenge and the choices they are making. Below is some useful information that you can use to discuss their challenge and give them some facts around the choices.

Fact or Fiction:

Question 1: Correct Answer 3. This is to check that the children understand how the questions work, and how important it is to read the question thoroughly.

Question 2: Correct Answer 1. Planets and space bodies are usually named by the International Astronomical Union (IAU) but the close planets can be seen without a telescope and so were first named by the Romans. Neptune and Uranus were discovered more recently, but the IAU decided to continue calling them after Roman (and Greek) gods.

Question 3: Correct Answer 1. The gravity on Mars is 0.376 x gravity on Earth. This is because Mars is a lot smaller. The larger a planet is, the stronger the gravitational force is. Mars is actually about half the size of the Earth.

Question 4: Correct Answer 2. Mars is further from the Sun than the Earth, so less sunlight reaches it. It actually gets only 43% of the amount of sunlight that Earth gets.

Question 5: Correct Answer 2. Mars has a very thin atmosphere. It also has no magnetic field. This means that a lot of harmful radiation from the sun reaches Mars's surface, which creates an extra danger for astronauts. On Earth we use suntan lotion to protect ourselves from any radiation that gets through, but that wouldn't be enough for astronauts on Mars.

Other planets:

Mercury is the god of commerce, travel and thievery in Roman mythology. The Planet probably received this name because it moves so quickly across the sky.

Venus is the Roman goddess of love and beauty. The planet is aptly named since it makes a beautiful sight in the sky, with only the Sun and the Moon being brighter. Earth is the only planet whose English name does not derive from Greek/Roman mythology. The name derives from Old English and Germanic. There are, of course, many other names for our planet in other languages.

Mars is the Roman god of War. The planet probably got this name due to its red colour. Jupiter was the King of the Gods in Roman mythology, making the name a good choice for what is by far the largest planet in our solar system.

Saturn is the Roman god of agriculture. Uranus is the ancient Greek deity of the Heavens, the earliest supreme god.

Question 6: Correct Answer 3. Mars has water ice caps at the poles and also there is likely to be water under the surface of Mars. Other features that Mars has that are similar to Earth's are deserts, volcanoes and valleys. Long ago, water probably flowed on the surface of Mars. Scientists see evidence of past water from the shapes of canyons and dried up streams in images sent to Earth by our Mars orbiting space craft. Mars rovers have found evidence of past water in the minerals found in surface rock samples. There is no surface liquid water on Mars at this time.

Question 7: Correct Answer 3. The first astronaut to go to Mars probably won't be until 2030. How old will the children (and you ☺) be when this happens? Do they think it will be as exciting as the first man on the moon? There are no men on Mars yet, but there are 8 Mars Rovers! The first landed on Mars in 1971.

Question 8: Correct Answer 2. Not only is the atmosphere on Mars very thin, but there is very little oxygen in it!

Mars' atmosphere:		Earth's atmosphere:	
Carbon dioxide	95.7%	Nitrogen	78.0%
Nitrogen	2.7%	Oxygen	20.9%
Argon	1.6%	Argon	0.9%
Oxygen	0.2%	Carbon dioxide	0.04%
Carbon monoxide	0.07%	Water vapour	1%-4% at the surface
Water vapour	0.03%		
Nitric oxide	0.01%		

Question 9: Correct Answer 1. It is the largest volcano in the solar system and is 3 times the height of Mount Everest! Scientists believe the volcano has managed to become this large because the planet's crust doesn't move like on Earth. It is not known if Olympus Mons is still active or not.

Question 10: Correct Answer 3. This is much bigger than the Grand Canyon! It would stretch all the way from Los Angeles to New York if it was on Earth. It is just south of Mars' equator.

Picture Cards:

Bicycle - will be too hard to ride in a space suit! How bumpy is Mars?

Biro Pen - does not work in space because needs gravity to pull ink to tip, but might work on Mars.

Compass - How does a compass work? It points north to the North Pole due to Earth's magnetic core. Will not work as Mars has no magnetic core.

Digital Camera

Drinking Water - how will you drink it without taking off your spacesuit?

Empty Containers - to collect samples of Mars soil

Family photo

GPS - will not work as the satellites that make GPS work are around Earth

Hiking Boots

Laptop

Mars Rover

Mobile phone - will not work as the satellites that make GPS work are around Earth

Pencil

Pick Axe

Picnic—how will you eat without taking off space helmet?

Rucksack

Sandwiches - how will you eat without taking off space helmet?

Solar Panel - to create electricity. What would need the electricity? How much electricity would be created? (Mars is further from sun)

Spacesuit - What does a spacesuit do? What parts of a spacesuit are there?

Spade

Spare Oxygen

Sunglasses - Mars is further away from the sun, will these still be needed?

Toothbrush

Two-way radio

Watch - Can talk about Mars days as compared to Earth days, or timing how much oxygen you have left.