

Planetary Puzzle

Name: _____
Class: _____ Date: _____

Instructions

Eight pilots from eight nations on Earth have been stationed on the other planets in the solar system for a few years. They're now coming home and have just taken off from their bases. Each spacecraft displays a different colour and features a different propulsion system. Your mission is to solve two puzzles:

- ★ What propulsion system does the American pilot's spacecraft use?
- ★ Which planet did the Russian pilot's spacecraft take off from?

Important

Before starting your mission, research the following:

- Roman and Greek mythology (gods and goddesses).
- The number of moons orbiting each planet in the solar system.
- Recent discoveries by the Voyager, Pioneer and Viking probes and other space missions.
- The physical and orbital features of the planets and their satellites.

Clues

- 1 The Japanese astronaut is piloting a white spacecraft.
- 2 The planet whose name refers to the god of war has an enormous volcano on its surface.
(A.: Mars)

- 3** The red spacecraft, which features an ion propulsion engine, takes off from the sixth planet in the solar system.
(A.: Saturn)
- 4** The orange spacecraft departs from a planet with a single moon.
(A.: The Earth or Pluto, but the answer is Pluto because the astronauts are returning to Earth from other planets.)
- 5** The Australian pilot lifts off from a planet that has rings and is tipped on its side.
(A.: Uranus)
- 6** The grey spacecraft is outfitted with magnetic propulsion engines.
- 7** The American is flying a blue spacecraft that lifts off from a planet with two moons.
(A.: Mars)
- 8** The eighth planet in the solar system is named after the god of the sea.
(A.: Neptune.)
- 9** The purple spacecraft, which has an electric engine, flies off from the planet whose name refers to the messenger of the gods.
(A.: Mercury)
- 10** The spacecraft powered by a liquid-fuel engine launches from the second planet in the solar system.
(A.: Venus)
- 11** The green spacecraft lifts off using its solid-fuel engines.
- 12** The South African spacecraft travels from the ninth planet using its antimatter engines.
(A.: Pluto)
- 13** The second planet in the solar system, which features an atmosphere of carbon dioxide, was named after the goddess of beauty and love.
(A.: Venus)
- 14** The Chinese pilot takes off from the largest planet in the solar system.
(A.: Jupiter)

- 15** The green spacecraft lifts off from the planet with 18 moons.
(A.: Uranus)
- 16** The Quebec pilot is aboard a yellow spacecraft powered by a fusion engine.
- 17** In Greek mythology, the king of the gods is represented by a planet with 28 moons.
(A.: Jupiter)
- 18** The planet with a cratered surface (like our Moon's) has no satellites and lies closest to the Sun.
(A.: Mercury)
- 19** The French pilot leaves the ringed planet named after the god of time.
(A.: Saturn)
- 20** The spacecraft running on solar energy lifts off from the fourth planet in the solar system.
(A.: Mars)
- 21** The blue planet has eight moons.
(A.: Neptune)
- 22** The white spacecraft lifts off from a moonless planet.
(A.: Mercury or Venus. But since a previous clue shows that a purple spacecraft took off from Mercury, the answer is Venus.)
- 23** The grey spacecraft takes off from the fifth planet in the solar system.
(A.: Jupiter)
- 24** The yellow spacecraft flies away from the planet named after the god of the sea.
(A.: Neptune)

Solutions to the puzzles

- ★ What propulsion system does the American pilot's spacecraft use?

Solar-energy system

- ★ Which planet did the Russian pilot's spacecraft take off from? .

Mercury.

Note: This answer results from a process of elimination. This increases the activity's level of difficulty and stresses the importance of properly using all the clues rather than simply solving the two puzzles.

Planetary Puzzle

Need to organize your findings?

Use the spaces below to jot down the answers to the clues given in the "Planetary Puzzle" student handout.

Astronaut (nationality): (A.: *Russian*)
 Propulsion system: (A.: *electric propulsion*)
 Spacecraft colour: (A.: *Purple*)
 Planet liftoff: **Mercury**

Astronaut (nationality): (A.: *French*)
 Propulsion system: (A.: *Ion propulsion*)
 Spacecraft colour: (A.: *Red*)
 Planet liftoff: **Saturn**

Astronaut (nationality): (A.: *Japanese*)
 Propulsion system: (A.: *Liquid-fuel propulsion*)
 Spacecraft colour: (A.: *White*)
 Planet liftoff: **Venus**

Astronaut (nationality): (A.: *Australian*)
 Propulsion system: (A.: *Solid-fuel propulsion*)
 Spacecraft colour: (A.: *Green*)
 Planet liftoff: **Uranus**

Astronaut (nationality): (A.: *American*)
 Propulsion system: (A.: *Solar energy*)
 Spacecraft colour: (A.: *Blue*)
 Planet liftoff: **Mars**

Astronaut (nationality): (A.: *Quebec*)
 Propulsion system: (A.: *fusion propulsion*)
 Spacecraft colour: (A.: *Yellow*)
 Planet liftoff: **Neptune**

Astronaut (nationality): (A.: *Chinese*)
 Propulsion system: (A.: *Magnetic propulsion*)
 Spacecraft colour: (A.: *Grey*)
 Planet liftoff: **Jupiter**

Astronaut (nationality): (A.: *South African*)
 Propulsion system: (A.: *antimatter*)
 Spacecraft colour: (A.: *orange*)
 Planet liftoff: **Pluto**