

## Before-reading questions

- 1 *Reader's own answers.*
- 2 Eight
- 3 Yes. They are called Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
- 4 A person who goes into space.
- 5 In a spaceship.
- 6 Russia and the United States
- 7 Russia, the United States, China, Japan and many European countries.
- 8 A thing that lives on another planet.
- 9 *Reader's own answers.*

## During-reading questions

### CHAPTER ONE

- 1 The Sun.
- 2 Different suns.
- 3 It is easier to send machines into space.
- 4 National Aeronautics and Space Administration in the United States of America

### CHAPTER TWO

- 1 He was the first man to travel into space.
- 2 1969
- 3 It took three days.
- 4 Because sometimes astronauts are not well and sometimes they can have accidents.

### CHAPTER THREE

- 1 An Unidentified Flying Object.
- 2 Because there is water, rocks, the right atmosphere and weather on Earth.
- 3 They are studying the atmosphere.
- 4 It looks at groups of stars in space.

### CHAPTER FOUR

- 1 Mars
- 2 Jupiter
- 3 Io
- 4 It is the nearest extrasolar planet to Earth.

### CHAPTER FIVE

- 1 **Model answer:** Difficult places, the light from the sun, the atmosphere, gravity, other solar systems, ice, water, rocks and trees.

### CHAPTER SIX

- 1 TESS will study brighter stars in a bigger part of the sky and not only extrasolar planets.
- 2 For about ten minutes.

### CHAPTER SEVEN

- 1 They want to send astronauts to Mars.
- 2 It must not be too heavy, and it must be big and strong.

## After-reading questions

- 1 *Reader's own answers.*
- 2 They are both spaceships. A satellite orbits the Earth, another planet, a star or a moon, and a probe lands on other planets or moons.
- 3 A supernova happens when a star dies.
- 4 Black holes are places in space. Gravity is very strong in black holes.
- 5 **Model answer:** Hubble found extrasolar planets for the first time and studied supernovae. Chandra is studying supernovae and black holes. COROT is looking for extrasolar planets. Kepler is looking for other small planets with Earth's atmosphere.
- 6 **Model answer:** There is no gravity in spaceships and your body flies up. You cannot stay in one place. You have to put something over your eyes in bed because the sun comes up every ninety minutes in space. Food is not as good in space as it is on Earth, and you sometimes have to add water to it. No gravity is bad for your body. You must move your body a lot because it helps you stay well.

7 *Reader's own answers.*

8 *Reader's own answers.*

## Exercises

### CHAPTER ONE

- 1 1 d    2 f    3 g    4 h  
5 e    6 c    7 b    8 a

### CHAPTERS ONE AND TWO

- 2 1 Extrasolar planets are very **far** from the Earth.  
2 In 1957, Russia sent the first **satellite** into space. It was called Sputnik 1.  
3 Cassini-Huygens was very big and heavy, and it travelled 7,800,000,000 **kilometres**.  
4 The Curiosity probe is exploring the ground, the **air** and the rocks on Mars.  
5 Hubble also studies stars before they die. When a star dies, there is sometimes a **supernova**.  
6 **Gravity** is very strong in black holes, and nothing can leave them.  
7 On July 20th, two astronauts **landed** on the Moon.

### CHAPTER THREE

- 3 1 There are seas and rivers everywhere on Earth, but other planets are too **dry**.  
2 The Earth's **atmosphere** has the right air for living things.  
3 Things cannot live on Venus, because it is too **hot**.  
4 This is because Venus is too **near** the Sun.  
5 Maybe things cannot live on Mars, because it is too **cold**.  
6 Mars is **far** from the Sun.

### CHAPTER FOUR

- 4 Astronomers <sup>1</sup> **are looking** (look) for life on extrasolar planets. They <sup>2</sup> **would like** (want) to find an "Earth" in a different solar system.

Maybe things are living and growing on it. Finding extrasolar planets <sup>3</sup> **is not** (not be) easy, because they <sup>4</sup> **are** (be) very far from Earth. But astronomers <sup>5</sup> **use** (use) space telescopes and then <sup>6</sup> **see** (see) a lot of extrasolar planets. Things live or grow on "hot Jupiter" extrasolar planets. But astronomers <sup>7</sup> **have found** (find) other extrasolar planets, too.

### CHAPTER SIX

- 5 1 When did TESS go into space?  
2 What is TESS doing?  
3 Where is TESS looking for new extrasolar planets?  
4 Which other telescope is going into space in 2020?  
5 Who is going to send Webb into space?  
6 What will Webb study?
- 6 1 NASA **is sending** two new machines to Mars.  
2 InSight **will study** Mars under the ground, and **it will** tell us more about Mars in the past and now.  
3 Then the probe Mars 2020 **will take off** from Earth in 2020.  
4 It **will land** on Mars and study the rocks and the ground.  
5 Later, another spaceship **will carry** the rocks back to Earth.  
6 The ESA **is also sending** a probe to Jupiter and its moons in 2022.  
7 It **will take** 7.6 years for the Jupiter ICy Moons Explorer (JUICE) to travel to Jupiter.

### CHAPTER SEVEN

- 7 Sending people to other <sup>1</sup> **planets** is very difficult – we know that. But NASA would like to send astronauts to <sup>2</sup> **Mars** in 2036. Can that really happen? First they must build the right <sup>3</sup> **spaceship**. It cannot be too heavy, or it will not <sup>4</sup> **take off** from Earth. It must also be big and strong because it has to carry the

<sup>5</sup> **astronauts** and everything they will need.  
Mars is about 78,340,000 <sup>6</sup> **kilometres** from  
the Earth. Astronauts have to travel for about  
260 days there and 260 days back. They would  
not be able to get any help from <sup>7</sup> **Earth**  
because it is too <sup>8</sup> **far** away.

**CHAPTER SEVEN****8** 1 b    2 a    3 b**Project work***Reader's own answers.*