BRITISH COUNCIL

LearnEnglish

Reading: B2

Asteroids

Read a scientific article about asteroids to practise and improve your reading skills.

Before reading

Do the preparation task first. Then read the text and do the exercises.

Preparation task

Match the definitions (a–h) with the vocabulary (1–8).

Vocabulary	Definitions
1. ..... an asteroid	a. to record or make note of something
2. ..... an orbit	b. a rock that flies through outer space
3. ..... to pick up	c. the path of an object around a planet
4. ..... to track	d. to be in an unknown location
5. ..... infrared	e. dangerous
6. ..... to log	f. a kind of light humans can't see without special glasses
7. ..... hazardous	g. to follow the movement or progress of something
8. ..... to be unaccounted for	h. to notice

Reading text: Asteroids

A

In 2010, the planetary defence team at NASA had identified and logged 90 per cent of the asteroids near Earth measuring 1km wide. These 'near-Earth objects', or NEOs, are the size of mountains and include anything within 50 million kilometres of Earth's orbit. With an estimated 50 left to log, NASA says none of the 887 it knows about are a significant danger to the planet.

B

Now NASA is working towards logging some of the smaller asteroids, those measuring 140 metres wide or more. Of the 25,000 estimated asteroids of this size, so far about 8,000 have been logged, leaving 17,000 unaccounted for. Considering that a 19-metre asteroid that exploded above the city of Chelyabinsk in Russia in 2013 injured 1,200 people, these middle-sized asteroids would be a serious danger if they enter Earth's orbit.

C

Whether NASA can find the remaining middle-sized NEOs depends on getting the money to build NEOCam, a 0.5-metre space telescope which would use infrared light to locate asteroids. If it did get the money, it could probably achieve its goal in ten years. Once logged, the planetary defence team would still need to work out how to defend the planet against being hit by the truly worrying asteroids – the PHAs.

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D

'Potentially Hazardous Asteroids' are rocks close enough to pass within 7.5 million kilometres of Earth's orbit. NASA has created a map of 1,400 PHAs, none of which are expected to be a threat in the next one hundred years. With technology already available, NASA can track these objects and make predictions about possible impact, at which point two defence solutions could be launched.

E

The first is DART – the Double Asteroid Redirection Test. Plans are scheduled to test DART on the moon of an asteroid called Didymos. 'Didymoon' is 150 metres wide, orbiting its 800-metre mother, and hopefully the impact of DART will knock it out of its orbit enough for Earth-based telescopes to pick up.

F

Another suggested defence against a PHA on course to hit Earth is to blow it up using a nuclear weapon. It may sound like a plot from a film, and it was the subject of the 1998 film *Armageddon*, but the Hypervelocity Asteroid Mitigation Mission for Emergency Response (HAMMER) is a genuine NASA proposal. The eight-ton rockets would be fired at an approaching asteroid with the hope of bumping it off course. If the asteroid was too close to Earth for this plan to work, the rockets would carry nuclear bombs to blow it up instead.

Tasks

Task 1

Match the paragraph (A–F) with the information it contains (1–6).

A	B	C
D	E	F

1. ..... Information about a plan that needs finance before it can happen
2. ..... An unrealistic-sounding way to solve the problem of an asteroid crashing into Earth
3. ..... Information about asteroids that are the biggest danger to Earth
4. ..... Information about the numbers of unidentified asteroids near Earth
5. ..... Information about NASA's most successful project to record asteroids near Earth
6. ..... A solution planned for testing

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Task 2

Are the sentences true or false or is the information needed to answer them not given?

1. Earth does not appear to be in any danger from any asteroids that measure one kilometre wide.

   True False Not given

2. We don't need to worry about small asteroids under 20 metres wide.

   True False Not given

3. A special telescope will provide a complete defence against asteroids hitting Earth.

   True False Not given

4. PHAs are the biggest concern, but they're still not an immediate threat.

   True False Not given

5. Didymoon's orbit is not stable.

   True False Not given

6. HAMMER may or may not need nuclear weapons to save Earth from an asteroid.

   True False Not given

Discussion

What would you do if you heard that an asteroid was near Earth?

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