

## Dead satellites are filling space with trash. That could affect Earth's magnetic field

### Level 3: Advanced

**Article summary:** The article discusses the rubbish produced by satellites and its potential effect on Earth's magnetic field.

**Time:** 60 minutes

**Skills:** Reading, Speaking, Writing

**Language focus:** Collocations

**Materials needed:** One copy of the worksheet per student

#### 1. Warmer

- a. Ask students to work in pairs and discuss the questions. Encourage them to give reasons for their opinions. After a couple of minutes, hold a brief discussion with the whole group so every pair can share their views.

#### 2. Key words

- a. Ask students to work individually or in pairs and complete the sentences using the words given. Tell them all the words appear in the article, so they can see them in context if they are unsure about their meaning. Allow some minutes for students to check answers in pairs or groups of three before checking with the whole group.

**Key:**

- |                |              |
|----------------|--------------|
| 1. ignite      | 9. ventures  |
| 2. rip through | 10. debris   |
| 3. deploy      | 11. wreckage |
| 4. disposable  | 12. deflect  |
| 5. shrouding   | 13. perturb  |
| 6. void        | 14. erode    |
| 7. sheer       | 15. demise   |
| 8. intertwined |              |

- b. Ask students to work in pairs again, this time to complete the sentences using words from the previous task.

**Key:**

- |                |               |
|----------------|---------------|
| 1. erode       | 6. disposable |
| 2. demise      | 7. deflect    |
| 3. void        | 8. perturbed  |
| 4. intertwined | 9. debris     |
| 5. deployed    | 10. venture   |

#### 3. Comprehension check

- a. Students first read the statements and decide whether they are true or false according to the article. Students correct the false sentences to make them true. They may do this in different ways, e.g. in item 1, they may say, 'There are currently nearly 10,000 active satellites,' or similar.

**Key:**

1. False. There are currently nearly 10,000 active satellites and companies are working as fast as possible to get tens of thousands more into orbit.
2. True
3. False The problem is that space, contrary to popular belief, isn't really a giant, self-cleaning void.
4. False. She's a plasma physicist and the author of recent research that found that the space debris generated by dead and dying commercial satellites could compromise our ionosphere or magnetosphere, also known as our planet's plasma environment.
5. True
6. True
7. False. What if space activities cause our planet's end?
8. True

#### 4. Key language

- a. a. Tell students you will now focus on some vocabulary used in the article. You may want to elicit what a collocation is and some examples before you ask them to carry out the task. Ask students to work in pairs and complete the sentences from the article by using the words in the box to form collocations.

**Key:**

1. keep; with
2. sheer
3. potential; vested
4. devoted
5. put
6. launching

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### 5. Discussion

- a. Students discuss the statements related to the article and give their reasons and justifications for each answer, referring to their own experiences or knowledge wherever possible.

### 6. In your own words

- a. In pairs, students make a list of the pros and cons of employing disposable satellites.
- b. Elicit the conventions of essay writing (academic purposes, formal style: no contractions, sophisticated, formal language). Then ask students to use the lists of pros and cons they created to write an essay on the topic, also including their own opinions.