

# Unit 11: Science

## Lesson 11.1: Reading and understanding writing

### Part 1: Introducing the topic

#### Task 1

An alternative way of presenting this task (especially if your class is quite strong or has good 'world knowledge') is to ask the students to keep their books closed and to discuss with a partner the questions in Task 1 and Task 2. Once they have done this (for around 1–2 minutes), they can open their books and alter their answers as appropriate.

If you do not do the above, at first you should elicit from the class the meaning of *emit* and *carbon dioxide*. Students should do this activity in groups of 3–4, to ensure that there is a good chance of someone in the group knowing about the countries mentioned.

Check answers in class. You could ask one group to present their list of answers to the class, and the other groups to say why they agree or disagree.

#### Answers

1. China
2. United States
3. India
4. Russia
5. Japan

#### Task 2

In feedback, discuss with the students whether they were surprised by any of these answers, and also to try to explain why this might be the case (e.g., increased use of cars).

#### Answers

1. United Arab Emirates
2. Australia
3. Saudi Arabia
4. United States
5. Canada

### Part 2: Preparing for the text

#### Task 3

Before doing this task, it might be interesting and useful to discuss with students what the *purpose* of the task is (i.e., to understand the structure and skeleton of a piece of writing). When reading, especially in an exam situation, reading only the topic sentences can be a useful way of gaining an understanding of the whole piece of writing.

Students should complete the task individually before comparing with a partner. They should come up with a joint answer which they are both happy with. Then do class feedback.

## Answer

3 – 5 – 4 – 1 – 2

### Task 4

Once students have discussed this question in groups, the activity could be expanded by combining two pairs together, where they compare their answers. Take brief feedback from 3 or 4 groups. These points could be written on the board, with students checking their predictions after doing the reading in Task 5.

## Part 3: Reading the text

### Task 5

**Note:** This text is also available as a downloadable audio file (Track 11) at [garneteducation.com/caw](http://garneteducation.com/caw).

Students will need around 6 minutes to read the passage, which is 774 words long.

## Part 4: Understanding the text

### Task 6

When discussing question 1 with students, explain that this kind of question is very common in English exams. One tip for answering these questions well is to replace the word/phrase in the text with the word/phrase in the question to see if it still makes sense. If you have time, either now or later on, students could write questions for their classmates based on the same principle.

## Answers

- humankind
  - per capita
  - greenhouse
  - excessive amount
  - colder regions
  - coastal cities
  - disastrous consequence
  - radical steps

### Task 7

To check the students' answers to question 2, you could ask one student to explain the first stage, then another student to explain the next stage, and so on.

## Answers

- Evidence used: ... *the 10 warmest years since 1880 have all occurred since 1998.*
- Relevant passage in the text: *When sunlight hits the Earth, some of it is absorbed, some of it is reflected as light, and the rest of it is reflected or radiated back into space in the form of heat. As this heat, in the form of infrared radiation, passes back through the atmosphere towards outer space, excess greenhouse gases absorb it. This makes the atmosphere warmer, and as the Earth's atmosphere warms, so too does the Earth's surface.*

### **Task 8**

For question 1, encourage students to scan the text for the countries to help them answer the questions. For question 2, give the students the clue of the fairy tale, and they may be able to infer (i.e., work out) the meaning.

### **Answers**

1. They are the world's worst polluters in terms of volume.
2. They are the world's worst polluters in per capita terms.
3. They are coastal cities which could be flooded at some point in the future if sea levels continue to rise.
4. It's the city where major climate change talks took place in 2015.

### **Part 5: Understanding the writing point**

#### **Task 9**

Individually, students should be given around 2 minutes to answer the questions. They should refer back to the essay in Part 3 as necessary. After this, they should compare their answers with a partner, and agree on a joint set of answers.

### **Answers**

- a. False
- b. True
- c. False
- d. True
- e. False

#### **Task 10**

Ensure that students cover the table while doing this activity. Once they have made their prediction, take class feedback. Get students to explain their decision. Hopefully, collectively they will identify that Type 3 (causal chain/domino) is the correct answer. Before looking at the table, ask them to predict what they think the structure of the other two types of essays would be.

Following these discussions, students should read through the table and see the outline structure of these three types of essay.

#### **Task 11**

Help students by telling them to try to think of how they would use these words in a sentence. This may help them identify whether the language is to introduce causes or effects. Students should complete this activity individually and then check with a partner.

An optional activity if you have time (or if a student/pair finishes before others) is for students to find as many examples as they can of cause and effect language in the essay in Part 3. They could also orally produce their own sentences, showing their understanding of the language.

| Introduces causes   | Introduces effects  |
|---|---|
| <p><i>Owing to ...</i><br/> The main reasons for this are ...<br/> One reason for this is ...<br/> Since ...<br/> As ...<br/> This is caused by ...<br/> This is because/due to ...</p> | <p><i>Therefore, ...</i><br/> As a result, ...<br/> Consequently, ...<br/> So ...<br/> Hence, ...<br/> Thus, ...<br/> This means that ...<br/> The result of this is ...<br/> The consequence of X is ...</p> |

**Part 6: Checking your understanding**

**Task 12**

Initially, elicit a definition of *water pollution* from the group, and even write up a definition on the board if you think it would be useful for your class. This activity would work best in pairs or even small groups, with students putting forward their ideas and then editing them and adding to the diagram.

It would be useful to take brief class feedback after 3 or 4 minutes of discussion. Each group could put forward 1 or 2 ideas, depending on how large the class is.

**Task 13**

Ideally, students should work in the same groups as in Task 12. Students may benefit initially from completing this activity by themselves and then presenting their answers to the group.

## Lesson 11.2: Vocabulary, grammar and practising writing

### Part 7: Recapping the last lesson

#### Task 14

One point which you might point out to students in this activity, especially if they are reasonably high level, is about the difference between *causation* and *correlation*. In this activity, and in cause and effect essays in general, this is a very important point to remember. *Causation* means when there is a direct link between two things (i.e., *X happens because of Y*), whereas *correlation* is when one thing happens after something else but there is no direct relationship. You might give an example from football to make this clear, e.g., *a team is losing 1-0. A substitute comes on. The team wins 2-1. How would you decide whether it was correlation? You would need evidence to do this (e.g., the substitute scored both goals).*

### Part 8: Understanding the grammar point

#### Task 15

You might use this task as a way in to talking about the importance of proofreading and checking your work carefully. These small mistakes are very easy to make, but not correcting them can lead to the person marking the essay getting a negative view of the student. This is why it can sometimes be very useful to get somebody else (a friend/colleague) to proofread your essays. It is very difficult to see our own mistakes.

#### Answers

1. Missing comma before *which*, since the information which follows is not essential.
2. Incorrect preposition – should be *by* more than 40%.
3. This sentence is incomplete – the use of *as* in the clause means that further information is expected and required. It should be completed with an additional clause, namely *so too does the Earth's surface*.
4. *The* Paris Climate Change Summit in 2015 is unique, so the definite article is required.
5. *That* is needed after the reporting *verb* reveals.
6. The verb form (past simple) and the time word (*since*) do not match. The present perfect is needed (*have occurred*).

#### Task 16

There is a quite a lot of information here for students to process, so they may need some time. You may also need to clarify some points with them, in particular some of the metalanguage used (e.g., *auxiliary; uncountable; relative clause; time word*).

The ideal activity to check students' understanding would be to get them to come up with their own questions and then to ask them in small groups. This could also be made into a competition. You might get the class to come up with 2 or 3 questions at first to show the model (e.g., *When do you use apostrophes? or Should uncountable nouns have a singular or plural verb?*)

#### Task 17

Students should refer back to the information in Task 16 to answer these questions. The ten types of problems outlined in Task 16 are each represented once in the ten sentences found here. Students should complete the task individually and then compare their

answers with a partner. Try to elicit the correct answers from the class when you go through in feedback.

### Answers

1. Wrong form – it is a noun, but needs to be *per cent*.
2. This is not a sentence – no verb and no information following the subject.
3. This is a direct question – should not be used. Better would be: *The question of the major impacts of climate change in the 21st century will be addressed.*
4. No comma is necessary after *that* in this type of relative clause.
5. This ‘sentence’ is composed of just one dependent clause and so is not a full sentence.
6. Wrong preposition: should be *on* or *about* pollution. *In* describes physical space.
7. *Evidence* is an uncountable noun – *s* needs to be deleted.
8. Missing *that* – *The data suggest **that** behavioural change is needed immediately.*
9. 2 x apostrophe errors – should be: *Gore’s view is that air pollution is a major problem in developing countries.*
10. Uncountable noun – no *the* needed: *Air pollution is a major concern.*

## Part 9: Understanding the language point

### Task 18

Students should complete the sentences individually, before checking in pairs and then taking class feedback. As students do this activity, one tip you might give them is to write a sentence using the phrase in the book. Once they have done this and created a context, it will be easier for them to work out what word can replace it.

### Answers

1. evaluate
2. regarding
3. although
4. consensus
5. remain
6. most
7. inform
8. destroyed
9. research
10. can
11. fact
12. before
13. have/has
14. shorter
15. status

## Part 10: Creating your own text

### Task 19

Students should take their time to choose the topic sentence they wish to use. It would not be a good thing for students to make their choice, write half a paragraph, and then decide they do not know how to finish it. If you think this may be a problem in your class, tell students that they must get your ‘sign-off’ for a paragraph. By doing that, you can ensure that students have thought properly about what they are going to write.

Students will need around 15 minutes to do this task. Once they have written their paragraph, they should, if there is time, share it with a partner. The role of the partner is to read through and be a critical friend.

### **Part 11: Consolidating your knowledge**

#### **Task 20**

Once students have discussed together, take brief general feedback to ensure that all members of the class are clear about these key points. Where possible, try to get students to explain the points to each other, rather than you doing it. This could also be done as a piece of written homework as well.