

A closer look at long sentences EXERCISES ANSWER KEY

PART I.

1.

What is/are the purpose(s) of NASA's Earth science program?

What does *its* refer to?

The purpose of NASA's Earth science program is (1) to develop a scientific understanding of Earth's system and its[Earth's system's] response to natural or human-induced changes, and (2) to improve prediction of climate, weather, and natural hazards.

2.

What was achieved through space and airborne observations?

From the 1960s through the 1980s, space and airborne observations (1) **allowed the first global view of the Earth** and (2) **led to important discoveries such as the processes behind Antarctic ozone depletion, the Earth's response to incoming solar radiation, and the extent, causes, and impacts of land use and land cover**.

What important discoveries have been made?

From the 1960s through the 1980s, space and airborne observations allowed the first global view of the Earth and led to **important discoveries such as (1) the processes behind Antarctic ozone depletion, (2) the Earth's response to incoming solar radiation, and (3) the extent, causes, and impacts of land use and land cover**.

Important!

'AND'

Sometimes there may be many 'and's in one complex sentence, such as the ones you have just read above. For example, in the second question, there are 4 'and's! It's important to be able to see where they belong, that is, what each one of them functions as.

Let's take a closer look...

The first 'and' links the two achievements:

(1) allowed the first global view of the Earth and (2) led to important discoveries....

Then, there is another 'and' which links the three discoveries to one another:

...discoveries such as (1) the processes behind Antarctic ozone depletion, (2) the Earth's response to incoming solar radiation, and (3) the extent, causes, and impacts of land use and land cover.

Then, *within* the three discoveries, there are two more 'and's. Both are used while explaining what the *third* kind of discovery is:

...,and (3) the extent, causes, and impacts of land use and land cover.

The reader may interpret this in two ways:

1. ... [(1)the extent, (2)causes, and (3)impacts of land use] and [land cover]

(Here, 'the extent, causes, and impacts of' applies to only land use)

OR

2. ... (1)the extent, (2)causes, and (3)impacts of [land use and land cover]

(Here, 'the extent, causes, and impacts of' applies to both land use and land cover. So it says: 'the extent, causes, and impacts of land use and the extent, causes, and impacts of land cover'.)

We can see that unnecessary repetition of words (the underlined) has been avoided)

Looking at the context, the second interpretation is more meaningful.

commas (,) help the reader be able to separate one item from another when many items are listed and/or many 'and's are used in one sentence.

A comma right before an 'and' (...and...) is very helpful to see where the previous item (eg. phrase) ends and the last item starts, particularly if many 'and's have been used in the sentence:

... (1)the processes behind Antarctic ozone depletion, (2)the Earth's response to incoming solar radiation, and (3)the extent, causes, and impacts of land use and land cover.

, and (3) which is the last item

PART II.

- 3-- that sponsors and conducts flight missions
- 2-- established NASA as an aerospace research and development agency
- 4-- to obtain data in furtherance of its objectives
- 1-- the National Aeronautics and Space Act of 1958 (Space Act)

The National Aeronautics and Space Act of 1958 (Space Act) established NASA as an aerospace research and development agency that sponsors and conducts flight missions to obtain data in furtherance of its objectives.

PART III.

Sample sentences:

In 2011, NASA Planetary Science inserted the spacecraft *Messenger* into orbit around our solar system's innermost planet, Mercury, **providing** unprecedented images of that planet's topography **and improving** understanding of its core and magnetic field.

OR

In 2011, NASA Planetary Science inserted the spacecraft *Messenger* into orbit around our solar system's innermost planet, Mercury, **which provided** unprecedented images of that planet's topography **and [which] improved** understanding of its core and magnetic field.