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S2G1 DE BITZ

Reading for Main Ideas

In this chapter, you will:

1. learn to describe what main ideas are.
2. identify the main idea of each paragraph in a passage.

Finding the main idea

The main idea of a paragraph is the author's message about the topic. It is often expressed directly or it can be implied.

Where are the main ideas found?

It is easy to identify a main idea that is directly expressed in the text.

- Main ideas are often found at the beginning of paragraphs. The first sentence often explains the subject being discussed in the passage.
- Main ideas are also found in the concluding sentences of a paragraph. The main idea can be expressed as a summation of the information in the paragraph as well as a link to the information in the next paragraph.

The main idea is not always clearly stated. It is more difficult to identify a main idea when it is inferred or implied. It can be implied through other words in the paragraph. An implied main idea can be found in several ways.

- Several sentences in a paragraph can imply the main idea by introducing facts about the topic before actually stating the topic.
- Implied ideas can be drawn from facts, reasons, or examples that give hints or suggestions concerning the main idea. These hints will be clues leading you to discover the main idea in the selected text.

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Try the passage below to see if you can pick out the main idea.

"Aluminium is highly reactive. This means that it changes chemically when it comes into contact with certain other substances. When aluminium is exposed to oxygen, it reacts. The result is a string but thin oxide film on the surface of the aluminium. If the film is damaged, it forms against in most conditions. This gives aluminium excellent corrosion resistance. It also makes aluminium easy to colour and decorate. This, along with ease of recycling, makes it perfect for drinks cans and other food packaging."

Use the hints below to determine the correct main idea of this paragraph.

After reading a paragraph ask, "What point is the author making in this passage?"

Ask the following questions:

- Who - Does this passage discuss a person or group of people?
- When - Does the information contain a reference to time?
- Where - Does the text name a place?
- Why - Do you find a reason or explanation for something that happened?
- How - Does this information indicate a method or a theory?

How can I determine if I have selected the correct main idea of a paragraph?

If you are able to summarize the information in the passage in your own words, you have absorbed the correct main idea. To accomplish this goal, try the steps listed below after reading a short section of your textbook.

- Write a short summary in your own words about what you have read.
- Does your summary agree with this general topic?
- Does your summary contain the same ideas being expressed by the author?
- Could you write a headline (or textbook subheading) that would express your summary in less than five words?

If you are able to rephrase your choice of a topic sentence into a question and then determine if the passage answers your question, you have been successful at selecting a main idea.

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Let's read

A) Read the paragraphs below and identify the main point in each paragraph. The paragraphs are part of a longer article entitled **Helping to save the planet**.

Experts agree that the earth's climate is changing, and that this global warming may be caused by the combustion of fossil fuels and the subsequent release of carbon dioxide and other gases into the atmosphere. The greenhouse effect probably plays an important role in global warming. In the same way as glass traps radiant solar heat in a greenhouse and warms the interior, the increased level of carbon dioxide in the atmosphere is likely to be raising global temperatures, causing drought and more frequent severe weather effects.

Fossil fuels were formed from plants and animals millions of years ago when the carbon dioxide content of the atmosphere was much higher than today, turning carbon dioxide into oxygen. We are now burning fossil fuels at an increasing rate and returning this carbon dioxide to the atmosphere. International agreement is needed to halt this trend and methods are already being developed such as alternative fuels and more energy efficient products, insulation of homes and the increase use of solar, wind, wave, and tidal energy, as well as the increased use of nuclear energy.

More radical methods may be needed. Some scientists are proposing geo-engineering projects – large-scale technology designed to change the earth's climate. Ideas include deflecting sunlight from space or generating clouds to create shade. However, conventional technology can be used to remove carbon dioxide emissions at source from large pollution generators such as power stations, cement and steel works. Artificial trees are also being developed as a means of removing carbon dioxide from the atmosphere. This process uses man-made leaves coated with carbon dioxide absorbing material from which the carbon dioxide can be chemically removed.

To complete this cycle of removal, the capture of carbon dioxide has to be followed by permanent storage or sequestration. There is already well-established technology for pumping carbon dioxide into depleted oil wells in order to enhance oil recovery. Carbon dioxide in its liquid state occupies significantly less volume than it does as a gas. Suitable sites, where the geology is well understood, would provide a permanent store for carbon dioxide, using some existing equipment and infrastructure. The process, known as carbon capture and storage (CCS), needs to be proven by integrating the different stages of the process and proving it on large-scale plants to verify the economics. Other methods of storage are being investigated but there are risks of unforeseen effects on the environment. Whatever processes are used, there is no doubt that reducing carbon dioxide levels will increase the cost of energy in the future, but the price of allowing climate change to continue would be even higher.

Every year 8 billion tons of carbon dioxide is being put into the atmosphere and this quantity is still increasing. The Earth's temperature is steadily rising, so there is a huge task for engineers to develop energy conservation, energy efficient generation and use, and economic and safe methods of removing carbon dioxide from the atmosphere.

Paragraph	Main idea
1	earth's climate is changing
2	We are now burning fossil fuels at an increasing rate and returning this carbon dioxide to the atmosphere
3	More radical methods may be needed
4	To complete this cycle of removal, the capture of carbon dioxide has to be followed by permanent storage or sequestration
5	The Earth's temperature is steadily rising

B) Read the article below and write out the main point of paragraphs which are italicised.

Dealing with heat

Heat can be important factor – and a big problem – in almost any engineering project. Here are four very different examples of the role of heat in engineering.

Microprocessors

Computer chips generate heat because electrical resistance in their circuits. In fact, it's this heat problem rather than microprocessor size that currently limits the speed of CPUs. A safe operating temperature is in the range of 50 - 70 ºC. Computer design engineers keep computes cool by installing fans that increase air circulation, heat sinks (solid materials that transfer heat away from hot spots), and by trying to reduce the amount of waste heat that is generated by making CPUs as efficient as possible.

> *Computer chips generate heat because electrical resistance in their circuits*

Motorcycle brakes

When brakes are applied, the friction of the brake pads on the brake disc creates heat. When brakes become very hot – around 400 ºC – friction is reduced. This means that the brakes are less effective, which is dangerous. Engineers design brake discs with holes in them. The holes allow the air to circulate more freely around the disc to dissipate the heat. They also help remove rain water.

> *When brakes are applied, the friction of the brake pads on the brake disc creates heat*

Gas-fired boilers

Gas-fired boilers are used in homes and industry for space heating and hot water. Chemical heat is generated by burning gases such as propane or butane. The temperature of a gas flame burning in air is almost 2000 ℃. At this high temperature, heat is easily transferred to heat exchangers and water pipes to heat air and water between 20 and 60 ℃. Heat transfer is aided by convection; as air or water is heated from bottom, it rises, and the colder fluid sinks. This forms a circulating flow so that the cooler fluid is constantly heated.

Chemical heat is generated by burning gases

Nuclear reactors

Heat is generated in the reactor core when uranium-235 is split into lighter elements. The heat turns water into steam, which turns the turbines. The turbines turn generators and make electricity. Most reactors operate with a water temperature of around 315 ℃ and pressure around 155 bar. In these extreme conditions, engineering design is critical particularly of safety and shutdown systems. The 2011 Fukushima plant disaster in Japan made worse by the failure of water pumps that were needed to cool the reactor core.

Heat is generated in the reactor core when uranium-235 is split into lighter elements

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C) Read the article below and state the main point of each paragraph.

Computers in design and modelling – oil platform design

Thirty years ago, design engineers didn't have powerful office computers. They had to use plastic models of oil platform to visualize coordinate and check the complicated design process. Now design and construction is faster, cheaper, and better using advanced computer techniques.
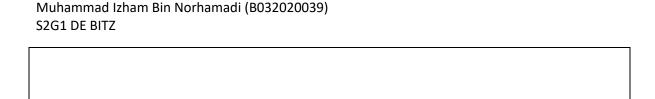
CAD (computer-aided design)

CAD is used to produce drawings and design documentation. The drawings are detailed pictures that explain a design. They can be two-dimensional, like a plan showing the arrangement of a room, or three-dimensional, like the picture on the left showing pipes and structural details. Documentation includes lists of structural drawings, materials, etc. CAD checks for design clashes- for example, places where parts don't fit together – and produces walk-through videos to check ergonomic features such as access for maintenance.

CAD is used to produce drawings and design documentation

FEA (finite element analysis)

Today's oil platforms are designed for difficult environments with natural forces such as seismic activity (earthquakes), waves, wind, and ice. FES is an essential tool in making the design work. FEA divides the structure into a network of elements and solves many complicated equations. It shows hoe the whole structure will work together to stand against high winds, strong waves or big earthquakes.

FES is an essential tool in making the design work

CFD (computational fluid dynamics)

CFD uses complex equations to model the interaction of fluids (liquids and gases) with surfaces. In oil platform design, engineers need to know the effect the wind has on the structure, including the parts such as cranes and helicopter decks. This helps engineers to create a safe desin.in the past, engineers used wind tunnel tests on a physical model, but now CFD allows engineers to try different designs to get the best result.

CFD uses complex equations to model the interaction of fluids (liquids and gases) with surfaces

D) Read the text below and identify the main ideas for paragraphs 3-8.

Cyberculture: The artificial world of the internet

1. The internet and the World Wide Web have provided a new medium for culture, generally labelled **cyberculture**, because it exists in cyberspace, 'the conceptual space where computer networking hardware, network software and users converge' (Gauntlett 2000: 220).

2. The internet and the Web made possible a culture apparently free of many of the constraints that operated in other media. The Web was decentralized and outside the control of governments, elites and business corporations. Information could be freely exchanged without anyone censoring or editing it. When on the Net, people were

anonymous and could assume, and play with any identity they chose. With others they could construct their own virtual communities, their own society, their own world. They were free of their relationships, their communities, their bodies.

3. Indeed, Sherry Turkle (1997) argues that they can become free of themselves in a world of screens, this virtual world can become more real to people than the 'real world' and can shape their behavior in the 'real world'. Aspects of identity developed in the virtual world can form the bases for relationships in the 'real world'.

4. With the growth of what Silver (2000) has labelled 'critical cyberculture studies', the celebration of cyberculture has been moderated by a growing awareness of its limitations. Many familiar constraints are at work behind the scenes.

5. The inequalities found in society at large are present in the world of internet too. The rapid rise in numbers of those using the internet led people to view cyberculture as a new popular culture, but there is plentiful evidence of a growing 'digital divide' between 'haves' and 'have-nots'. Cyberspace has also been considered a predominantly male space, with a typically male 'frontier culture' (Silver 2000: 26-7).

6. Arguably, a 'technopower spiral' has brought about control by a technical elite. This spiral is the result of the vast, and ever increasing, amount of information available on the Web, which has led to the invention of the advanced tools and enable users to find way they are seeking and manage the flow of information. It has become increasingly difficult for ordinary users to operate according to their own values, as they are dependent on the tools created and controlled by the technical elite. These tools are constructed according to the beliefs and values of the elite in the language it has developed (Jordan 1999: 101).

7. Nor is cyberculture free of commercial and political pressures. Commercial pressures are blatantly present in the pop-up advertising which finances so much 'free' activity. Commercial interests also steer and manipulate users in covert ways, and governments can find ways of censoring web content.

8. This raises the broad question of how different cyberculture is from other cultural media. That it is different to some degree is undeniable. It does provide opportunities for individuals and groups to engage in cultural exploration in a relatively unconstrained way. Cyberculture is by no means immune, however, from the social processes of

manipulation, domination, and commercialization that operate in society at large and shape culture in general.

Source: Fulcher, J & Scott J. (2011), pp 367-d Sociology (4th ed.) Oxford. Oxford University Press.

Note down the main ideas for the following paragraphs. Paragraph 2 is done for you.

Paragraph	Main ideas
2	The internet made possible a relatively free culture
3	Sherry Turkle (1997) argues that they can become free of themselves in a world of screens
4	the celebration of cyberculture
5	The inequalities found in society at large are present in the world of internet too
6	a 'technopower spiral' has brought about control by a technical elite
7	Cyberculture is not free of commercial and political pressures
8	how different cyberculture is from other cultural media