



Cambridge International AS & A Level

THINKING SKILLS

9694/22

Paper 2 Critical Thinking

May/June 2021

1 hour 45 minutes



You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **all** questions.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

This document has **8** pages. Any blank pages are indicated.

Section A

Study the evidence and then answer Questions 1 and 2.

Source A**Extract from scientific journal**

Scientists at the University of Bonn in Germany found that a dishwasher uses only half the energy, one-sixth of the water, and less soap than handwashing an identical set of dirty dishes. Even the most sparing and careful handwashing could not beat the modern dishwasher. The study also found that dishwashers excelled in cleanliness over handwashing.

Most dishwashers manufactured since 1994 use 7 to 10 gallons of water per cycle, while older machines use 8 to 15 gallons. Newer designs have also improved dishwasher efficiency immensely. Hot water can now be heated in the dishwasher itself, not in the household water heater, where heat gets lost in transit. Dishwashers also heat only as much water as needed. If you have an older, less efficient machine, handwashing is recommended for the smaller jobs, saving the dishwasher for big events.

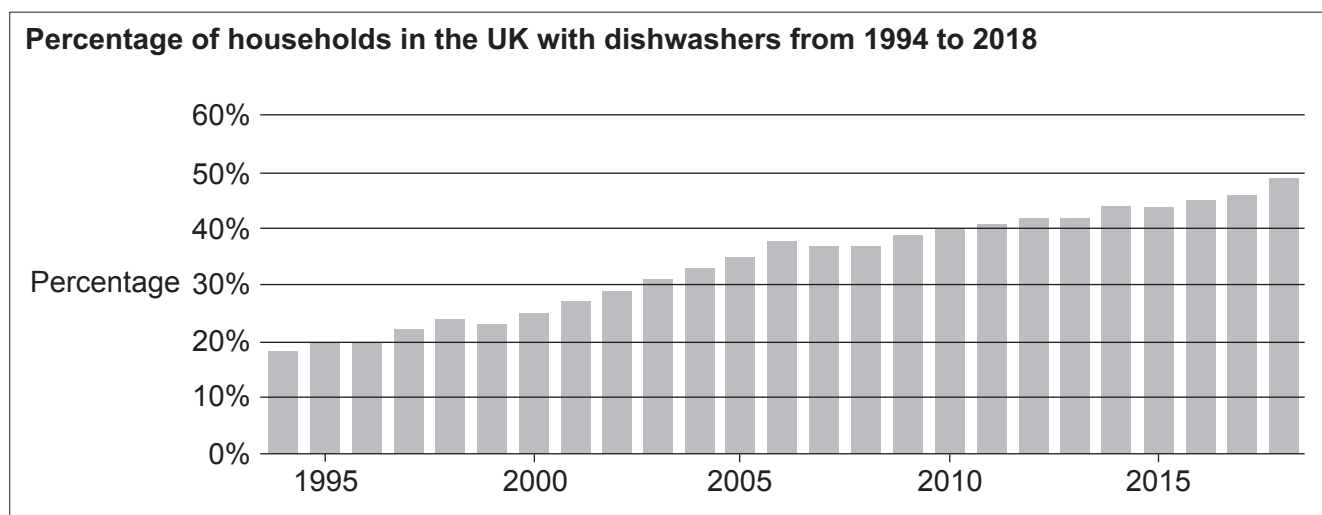
Source B**Extract from book *Back to basics – the need to tackle our addiction to technology***

In considering the environmental impact of dishwashers in comparison with handwashing, a number of factors need to be taken into account. Dishwasher manufacturers have emphasised research which suggests dishwashers use less hot water than even very careful handwashing. However, this is true only if a dishwasher is fully loaded. Whilst a family might produce enough washing-up to need daily use of a dishwasher, households of just one or two people would have to go several days before a dishwasher was fully loaded. The practical difficulties arising from this, for instance running out of clean plates etc., mean that such households usually run their dishwashers only partially loaded. So it is not true that dishwashers make a significant contribution to energy conservation.

Source C**Extract from environmental magazine**

The debate about how environmentally friendly dishwashers are needs to take into consideration the environmental impact of the manufacture of the machines. This is extremely difficult to determine, as it depends on the source of energy the factory uses and the environmental impact of extracting the materials needed in the construction of the machines. It is quite possible that a machine which is extremely energy efficient when used has been produced in a factory using fossil fuels and with materials that were extracted in such a way as to cause damage to delicate environments.

Source D



Source E

Information booklet from a leading dishwasher manufacturer

The Megawash 666 dishwasher is a robust large machine designed for use in the catering industry. It is not suitable for ordinary families, as they would need enormous amounts of crockery and cutlery before the dishwasher was full. It can deal with the washing-up generated by a restaurant seating up to 50 guests. It uses the minimum amount of water and is highly energy efficient, thus keeping costs to a manageable level for a restaurant business. Restaurants in areas with hard water that generates a lot of limescale should consider installing a water softener to keep the machine working at maximum efficiency.

- 1 (a) 'People who own dishwashers tend to create more dirty dishes than those people who have to handwash them.'
- Assess the impact of this statement, if true, on the significance of the research findings in Source A. [3]
- (b) Explain why the conclusion in the last sentence of Source B cannot reliably be drawn from the information provided. [2]
- (c) To what extent should the information in Source C act as a deterrent to somebody considering buying a dishwasher to help the environment? [3]
- (d) 'The trend shown in Source D suggests people in the UK have become increasingly aware of the environmental benefits of using dishwashers.'
- Explain **one** problem with drawing this conclusion. [2]
- (e) Assess the usefulness of the information in Source E. [4]
- 2 You are advised to spend some time planning your answer before you begin to write it.
- 'The invention of the dishwasher represents a major contribution to protecting the environment.'
- To what extent do you agree with this claim? Write a short, reasoned argument to support your conclusion, using and evaluating the evidence provided. [8]

Section B

Read the following passage and then answer Questions 3, 4 and 5.

- 1 A key principle used by makers of films about wildlife is that they should observe the animal world but not intervene in it. For example, if a vulnerable animal is about to be captured and eaten by a predator, the film makers should not try to save the victim even if they are in a position to do so. This is because such an intervention would be in danger of upsetting the natural order and would make an illegitimate move beyond simply observing the animal world. This principle should be rejected. Filming animals in itself represents human intervention in the animal world – taking action to save vulnerable animals from predators is simply another example of this and so it is justified.
- 2 We would not hesitate to intervene if a child was about to be attacked by a predator such as a lion. Children and animals are both biological organisms and share the characteristics of feeling pain and experiencing fear. It is inconsistent to intervene in one case but not the other.
- 3 A number of charities treat animals injured through such things as pollution caused by oil spills when ships run aground on rocks. They also mount campaigns to protect endangered species that have declined due to developments such as intensive agriculture or the clearing of rainforests. These are clearly cases of people interfering with nature. When wildlife programme makers help to save prey from a predator they are simply engaging in this sort of charitable intervention.
- 4 Some might argue we should accept nature as it is, 'red in tooth and claw', even if we are uncomfortable with observing the results of this. However, the moral codes of many societies rightly condemn cruelty to animals and enshrine this in laws to prevent such cruelty. We are therefore justified in taking action to stop animals from treating each other cruelly in the natural world.
- 5 At the dawn of time people had to hunt animals for food in order to survive. Our ancestors were not in a position to have moral sensibilities about killing animals to provide their next meal. But we have moved on from those times. We should not stand aside and watch as an innocent animal dies in the jaws of an aggressive predator.

- 3 (a) Using the exact words from the passage as far as possible, identify the *main conclusion*. [2]
- (b) Using the exact words from the passage as far as possible, identify **three** *intermediate conclusions* in paragraphs 1 to 4. [6]
- (c) Identify an *unstated assumption* required by the reasoning in paragraph 2. [2]
- (d) Identify the argument element and explain the function of the following words from paragraph 5:

‘But we have moved on from those times.’ [2]

- 4 (a) Identify and explain **one** flaw or weakness in the reasoning in paragraph 1. [2]
- (b) Identify a flaw of *conflation* in paragraph 3. [2]
- (c) Explain how the reasoning in paragraph 4 is weakened by *reliance on a questionable assumption*. [2]
- (d) Explain why the reasoning in paragraph 5 fails to support the main conclusion. [2]

- 5 *You are advised to spend some time planning your answer before you begin to write it.*

‘The continued development of human society is not compatible with the preservation of the natural world.’

Write your own short argument to support **or** challenge this claim. The conclusion of your argument must be stated. Credit will not be given for repeating ideas from the passage. [8]

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