

Nutrients

Below are two practice questions: the first question shows student responses and examiner feedback; the second question is for you to try yourself.

Chapter 1: Practice question 1 (with student responses and examiner feedback)

Look at the information below, which is taken from the Eatwell Guide.



- State **four** reasons why it is important for people to drink enough water and other fluids every day. (4 marks)
- Explain why the Eatwell Guide limits fruit juice and/or smoothies to a total of 150ml per day. (2 marks)
- Water is also supplied by foods in the diet. List **three** foods that contain useful amounts of water that the body can use. (3 marks)
- In the UK, drinking water is available from taps and can also be bought in bottles from shops. Justify which source of water is better for environmental sustainability. (3 marks)

(Total 10 marks)

Responses

The following responses were provided by students. The level and detail within the responses increases. More examples, with reasons, have been provided that allow students to achieve higher marks. The use of subject-specific language shows more informed understanding of the subject content.

Basic level response

- You need water so that you sweat, go to the toilet and don't get thirsty. (2 marks)
- Fruit juice and smoothies are part of your 5 a day so you need to have some each day. (0 marks)
- Bananas, apples, soup (2 marks)
- Water is sold in plastic bottles and if people throw them on the ground when they have finished, it causes litter. Water from taps doesn't need bottles so it is better for the environment. (1 mark)

Examiner feedback (5 marks)

- The student has demonstrated some knowledge of why water is needed by the body.
- The point of the question about the sugar content of fruit juice and smoothies has been missed.
- The student could have suggested fruit as a group of foods rather than naming individual fruits.
- The student has indicated understanding that plastic bottles cause litter problems but has not justified the reason more easily understood by students as to why tap water is better for environmental sustainability.

Medium level response

- You need water to stay cool, produce urine, stay hydrated and for chemical reactions. (3 marks)
- Fruit juice and smoothies are OK, but they can be rather sweet. (1 mark)
- Vegetables, fruits, eggs (3 marks)
- Bottled water uses lots of energy to make the plastic bottles which are thrown away which is a waste. Tap water is better because there are no bottles used so the environment doesn't get messed up. (2 marks)

Examiner feedback (9 marks)

- The student has identified three good reasons why water is needed, but has not clearly defined what is meant by 'stay hydrated'.
- The student has identified that there is sugar in fruit juice and smoothies but has not clearly related it to the Eatwell Guide limitations.
- The student has given three good sources of water.
- The student has identified the energy costs of bottled water and the fact that they are disposable, and has related this to the effects on the environment in terms of waste of resources. The student has not recognised that there are some sustainability issues with tap water, such as making it safe to drink.

High level response

- You need water to:
 - control body temperature by sweating
 - help the body get rid of waste products through the kidneys (urine) and faeces
 - keep the skin in good condition and prevent it from drying out
 - make body fluids such as blood, the fluid in joints and fluid in the eye (tears). (4 marks)
- The Eatwell Guide limits smoothies or fruit juice to 150ml per day because they are both high in sugar and acids. The sugar is 'free' sugar because it has been released from the fruit during processing and can be concentrated. This is not good for the teeth and means that the enamel can be damaged by bacteria in the mouth producing acids from the sugar and acids in the fruit. If you drink more than 150ml you would also be getting more sugar than is recommended. (2 marks)
- Fruits such as melon and oranges; vegetables, fish and shellfish (3 marks)
- Bottled water is sold in plastic bottles. These use a lot of energy and non-renewable resources (for example, oil to make plastics), and they are bad for the environment because they have to be disposed of, often in landfill sites. Some, but not all, of the plastics used are recyclable. Tap water has to be cleaned to make it safe to drink, which uses energy, but it does not have the same effects on environmental sustainability as the plastic bottles used for bottled water. (3 marks)

Examiner feedback (12 marks)

The student has thoroughly understood the subject of the question and has provided detailed reasoning in the answers. This is an excellent answer with good use of subject-specific terminology.

Mark scheme

For 10–12 marks: The response shows **thorough** knowledge and understanding of the need for water and other fluids in the diet. The answer gives several detailed reasons that relate to the Eatwell Guide, environmental sustainability, the composition of foods and dental health. Clear examples have been given.

For 6–9 marks: The response shows **good** knowledge and understanding of the need for water and other fluids in the diet. The answer gives several reasons that relate to the Eatwell Guide, environmental sustainability, the composition of foods and dental health. Examples have been stated but detailed reasons are not given.

For 0–5 marks: The response shows **some** knowledge and understanding of the need for water and other fluids in the diet. The answer gives a few reasons that relate to the Eatwell Guide, environmental sustainability, the composition of foods and dental health. Examples have been stated but reasons are not given.

Points to include in the answer

- The varied need for water in the body
- The composition of foods in relation to water content
- The composition of foods in relation to their sugar and acid content
- The need for hydration and recommendations of the Eatwell Guide in relation to this
- The environmental implications of selling water in bottles compared with drinking water from taps

Chapter 1: Practice question 2

Look at the information below, which is taken from the Eatwell Guide.



Eat less often and in small amounts

- Why are the foods in this section of the Eatwell Guide described as 'energy dense'? (2 marks)
- State **three** reasons why the Eatwell Guide recommends that people limit the amount of these types of food in their diet. (3 marks)

(Total 5 marks)

Chapter 1: Mark scheme for practice question 2

For 4–5 marks: The student has **thorough** understanding of the energy density of foods and their effects on long-term health and has provided relevant and detailed explanations to support their knowledge. Clear reasons have been given for limiting energy dense foods.

For 3 marks: The student has **some** knowledge of the energy density of foods and their effects on long-term health and has provided some relevant explanations to support their knowledge. Some reasons have been given for limiting energy dense foods.

For 0–2 marks: The student has a **basic or limited** understanding of the energy density of foods and their effects on long-term health and has provided few or no explanations to support their knowledge. Muddled reasons have been given for limiting energy dense foods.

Content

- a)
- Fat and sugar provide 9kcal per gram and 3.75kcal per gram respectively.
 - Several of the food products shown in this section of the Eatwell Guide contain high levels of fat and/or sugar and are therefore energy dense.
 - The fat and sugar in such products are often 'invisible', so it is not easy to tell by looking at them if they are energy dense.
- b)
- Many such foods are often eaten as snacks and are very appealing in terms of flavour and texture, so it is easy to consume high levels of energy from these products without realising.
 - Frequent consumption of energy dense foods can easily lead to weight gain and obesity if the energy they provide is not used in physical activity.
 - The consumption of high levels of fat and sugar is a risk factor in the development of a number of diet-related diseases including obesity, Cardiovascular Disease, Coronary Heart Disease, Type 2 diabetes and cancer.
 - High levels of sugar consumption can lead to tooth decay.
 - These foods often have high levels of salt added as well, which is a risk factor in CVD.