# Unit 3.1.1

# Appetite, Satiety, and the Sensory Appreciation of Food

## Key Knowledge and Key Skills

### Key Knowledge

#### 3.1.1

The physiology and conditioning of appetite, satiety, and the sensory appreciation of food.

### Key Skill

#### 3.1.1

Explain appetite, satiety, and the sensory appreciation of food.

**VCE Food Studies Study Design p. 20 and 21**

## Key Terms and Definitions

**Appetite** is the desire for food.

**Conditioning** is a behavioural process whereby a response becomes predictable and expected due to increased exposure.

**Physiology** is the branch of biology that deals with the normal functions of living organisms and their parts, the physical component.

**Satiety** is the feeling of fullness or satisfaction after eating food.

**Sensory appreciation** refers to how we use our senses to determine how we feel about a particular food.

## The Physiology of Appetite

The two main factors that influence whether we eat are hunger and appetite.

Hunger is an uncomfortable feeling associated with a lack of food. A few hours after last eating, we begin to experience hunger pains caused by an empty stomach contracting. Hunger is a physical response to the body's need for food and cannot be ignored.

In contrast, appetite is defined as the desire for food, even when the body is not hungry. Appetite can be triggered by the sight of appealing food, the aroma of food, or even talking about food. Our eyes, ears, and nose send messages to our brain, which send messages to other body parts that food is available to eat. Our bodies have physiological responses to these messages, including releasing saliva in the mouth, producing a tingling sensation in the pit of our stomachs to encourage us to eat, contracting the stomach, and starting to produce digestive chemicals in the intestinal glands.

An important hormone that plays a role in the body's physiological response to appetite is ghrelin. This hormone is an appetite-enhancing hormone. Several organs release this hormone; however, it is mainly secreted by the stomach. People often say that their stomach is growling when they are hungry. This 'growling' occurs because the stomach is producing ghrelin.

**Watch** this video to discover more about appetite:
https://youtu.be/IXiG1_OrPS4

*We often eat dessert after a meal due to appetite rather than hunger.*

## The Conditioning of Appetite

If the image of a chocolate chip cookie makes your mouth water (salivate), you have learned that when you see or smell food like this, you usually get to eat it! This type of learning is called 'conditioning.' Your mouth salivating is a physiological response to appetite and your learned behaviour is a conditioned response.

In the 1920s, a Russian physiologist, Ivan Pavlov, conducted tests on animal digestion. During Pavlov's experiments, he noticed that just seeing the food dish that was used to feed the dogs would cause them to salivate (drool). He wondered why the dogs responded to the dish before seeing the food. Pavlov set up an experiment where he would ring a bell and give the dogs some meat powder. After repeating this a few times, he noted that the dogs salivated as soon as he rang the bell. The dogs had become conditioned to expect food on hearing the bell. This is referred to as conditioning in relation to appetite.

Some people are conditioned to keep eating when they have an appetite and when they are satisfied. Despite experiencing all the physical signs of fullness, people sometimes continue to eat.

Sometimes we might eat cake at a birthday celebration, despite being full, because we have been taught that it is good manners. We might eat when we are stressed or anxious. We may even seek food as a form of comfort. As children, we may have been made to eat all the food on our plate, despite being full, and then being praised. After years of repetition, we become conditioned to eat the food given even if we are satisfied and no longer require food.

## The Physiology of Satiety

Once they have eaten, most people feel full and satisfied and their eating behaviour stops. Feeling a sense of fullness in the absence of hunger is called satiety. Like the beginning of eating, satiety (the end of eating) is also regulated by several physiological responses.

As blood glucose levels increase, the pancreas and liver send signals to the brain to tell the person to stop eating. Fat cells release leptin, also known as the 'satiety hormone,' when someone is satisfied. This process can take around 20 minutes and is our body's physical response to feeling full/satiety. The main role of leptin is to suppress appetite and hunger and control energy intake. The more a person eats, the more leptin is released. The more leptin that is released, the more appetite is suppressed. This results in less food being consumed.

## Foods that Provide Satiety

The nutrients food contains and how food is processed determine how satisfying it will be, not the amount of kilojoules in the food. Foods that contribute to satiety (filling foods) can delay hunger, help you eat less at the next meal and ultimately help you lose or maintain weight. Filling foods are often high in protein, low in glycaemic index (GI), high in fibre and unprocessed. Foods high in sugar and, to some extent, fat tend to make us feel 'full' for a short period of time; however, relatively soon, we begin feeling hungry again.

### Foods High in Protein

Protein is the most filling macronutrient as it may reduce the hormone ghrelin, which activates hunger, and increases the levels of hormones that signal satiety. It is the same in kilojoules per gram compared to carbohydrates. Protein stays in the stomach longer than carbohydrates and for this reason may be more likely to contribute to feelings of fullness.

Lean meats, poultry, legumes and beans, fish and seafood, eggs, dairy foods, nuts, and seeds are all excellent protein sources.

### Low GI Foods

Carbohydrates with a low GI value (55 or less) keep you feeling full for longer because they are more slowly digested, absorbed, and metabolised. They cause a lower and slower rise in blood glucose and, usually, insulin levels.

Low GI foods include some high-fibre breads and cereals, pasta, basmati, low GI rice, quinoa, barley, legumes, low-fat dairy products, and some fruit.

### Foods High in Fibre

Fibre provides bulk and helps you feel full for longer. Fibre may slow down the emptying of the stomach and increase digestion time.

High amounts of fibre can be found in fruits and vegetables, wholegrain foods, oat bran, barley, seed husks, flaxseed, psyllium, beans, and legumes.

### Unprocessed Foods

Whole unprocessed or slightly processed foods are also generally more filling than highly processed foods.

Unprocessed foods include vegetables, grains, legumes, fruits, nuts, meats, seafood, herbs, spices, garlic, eggs, and milk that has undergone very little processing.

**Watch** this video to discover more about foods that contribute to satiety: https://youtu.be/80m7sElfNgc

**Watch** this video to find out more about low GI foods: https://youtu.be/xm2T2LXZLtU

## Foods that Do Not Provide Satiety

The amount of kilojoules in a portion of food has little to do with how satisfied or full a food makes a person feel. The way nutrients in the food are digested and utilised by the body influences satiety. While fats still provide some degree of satiation, protein and carbohydrates are better choices for longer-term satiety. In contrast, foods containing high amounts of sugar only stimulate satiety and reduce food intake in the short term.

*Foods high in sugar.*

*Drinks high in sugar.*

*Highly processed foods.*

## The Sensory Appreciation of Food

Several studies have investigated how our sensory appreciation of food (how much we like the sensory properties of food) influences our appetite and satiety. The results from these studies suggest that the sensory properties of food play a very important role in how people select their food and how much they eat, and that all five senses, hearing, sight, smell, taste, and touch, contribute to an individual's appetite and satiety.

Our senses strongly influence our likes and dislikes, which impacts our sensory appreciation of food. Taste and smell are important sensory properties of food but the look, feel, and even the sound of food can also influence how we feel about it and determine how much we want to eat.

### Appearance

Size, shape, colour, temperature, and texture contribute to our first reaction to food. If a food does not look appetising, we will be unlikely to eat it. Appearance is important if we want our food to be enjoyed. We often associate particular colours with certain flavours, for example, when we see a pink food product, we often assume it has a strawberry flavour. Also, the stronger the colour, the more intense we imagine the flavour to be.

Words used to describe food appearance include firm, dry, golden brown, round, flat, colourful, and dull.

### Sound

The sounds of food being prepared, cooked, served, and eaten all help influence our preferences and sensory appreciation of food. Hearing the sounds of a meal being cooked and eaten enhances our enjoyment of eating.

Words to describe the sounds include loud, popping, bubbling, spitting, breaking, subtle, sizzling, and crackling.

### Texture

When we look, touch, and chew food, we evaluate how it feels. When food is placed in the mouth, the surface of the tongue and other sensitive skin reacts to the feel and texture. This is called mouth-feel. Viscosity can be used to describe texture. Viscosity refers to thickness of a liquid and its resistance to flow.

Words to describe texture include crunchy, brittle, smooth, glossy, thick, thin, and runny.

### Aroma/smell

The olfactory receptor cells in the nose detect aromas released from food and send messages about the smells to the brain. The sense of smell works with taste to identify the flavours of food. Aroma and taste work together to produce flavour. Words such as strong or weak can also be used to describe the intensity of food smells.

Words that we associate with food are often used to describe aroma, for example, herby, cheesy, and fishy.

### Taste

Taste and smell work in unison and the term we use to describe this is flavour. An adult has around 2000–4000 taste buds on the tongue, mouth walls and at the back of the throat. Taste receptors in the mouth send messages to the brain that a particular flavour has been detected.

The tongue can detect five tastes: bitter, salt, sour, sweet, and umami. Umami is a savoury taste associated with ripe tomatoes, vegemite and cheese.

The taste of food gives us clues about what we are eating and contributes to our eating experience. Food that tastes sour often indicates that it is unripe, salty foods indicate that a food contains minerals like sodium, and bitter foods are often considered poisonous.

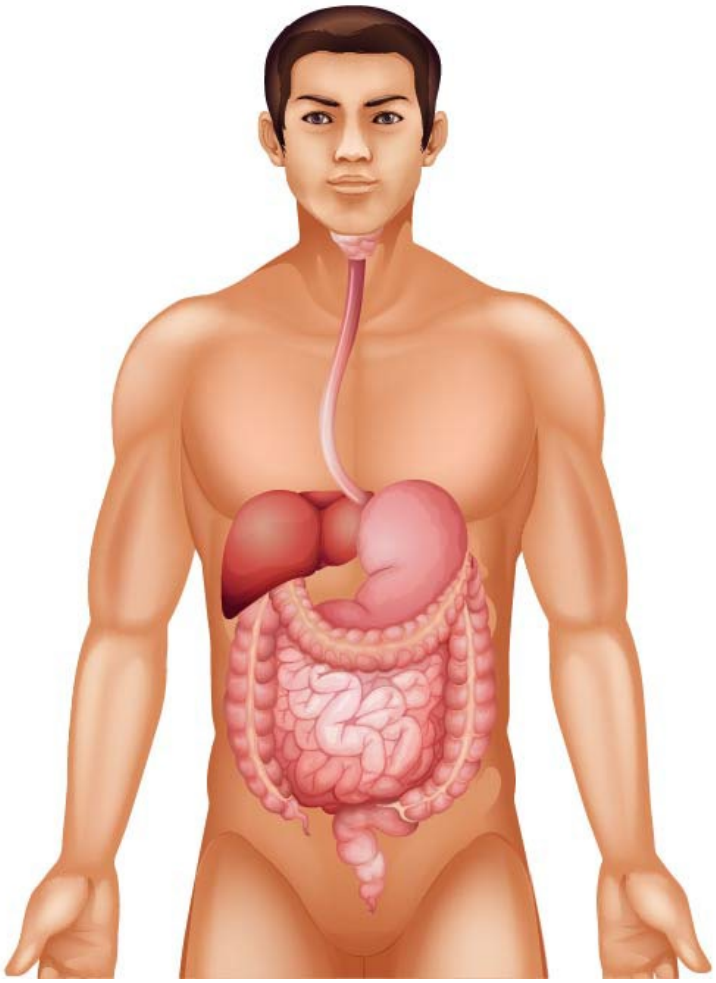
Words to describe taste include sweet, mild, spicy, weak, strong, fruity, cheesy, tart, and tangy.

*The Five Senses*

# Written Activity One

## The Bodies Response to Appetite and Satiety

**Add** notes to the diagram below that explain the body's physiological response to appetite and satiety.



# Written Activity Two

## What are the Most Filling Foods?

**Read** the article at this link: https://www.medicalnewstoday.com/articles/324078#takeaway

In the table below, **list** four different ingredients you would include in a meal.

**Explain** why each of the foods in this meal contributes to satiety.

| Food | Why does this food contribute to satiety? |
|---|---|
| | |
| | |
| | |
| | |

# Written Activity Three

## Describing the Senses

We use our five senses when we decide to eat a portion of food. These senses are hearing, sight, smell, taste, and touch. Our senses help us evaluate food, develop personal food preferences, and make choices. It is important to avoid using terms like delicious, nice, and scrumptious when describing foods. These adjectives say how much you like food, not why you like it. When describing food, it is important to use words about sensory properties, including taste, texture, appearance, aroma, and sound.

Think of your most and least favourite dish.

Describe the taste, texture, appearance, aroma, and sound of these dishes in the table below.

| Dishes | Taste | Texture | Appearance | Aroma | Sound |
|---|---|---|---|---|---|
| **Most favourite dish** | | | | | |
| **Least favourite dish** | | | | | |

Visit this website to find out some adjectives to describe foods:

http://archive.foodafactoflife.org.uk/attachments/ee816658-1eed-4b1756de6e61.pdf

# Practical Activity and Record: One

## Response to a Design Brief: Will it fill me up?

Read the forum post below:


Hi All,

I'm looking to start eating healthier and eat more foods from the five food groups, not lose weight, just to be healthy. I work all day at a call centre, and by afternoon I have no energy and can't concentrate. Has anyone come across some quick and easy meals to make that contain chicken? I love chicken! I found this recipe for a stir-fry that I like the look of, but I'm not sure if these foods will fill me up. I'm decent in the kitchen, but I'm no chef! I like my food to that looks too good to eat, I just like food that looks appealing!

Your task is to design a meal for Ben that meets the criteria listed below.

Ben's meal must:

- Be healthy and contain foods from the five food groups;
- Fill him up, give him some energy and help him maintain concentration at work;
- Be quick and easy to make.
- Contain chicken;
- Use the stir-fry recipe at the link below; and
- Look appealing.

Click here to access the stir-fry recipe that Ben likes.

Note: Substitute the sweet sherry in the recipe with 2 teaspoons water, 2 teaspoons apple cider vinegar, and a pinch of sugar.

### Step 1

Your task is to **modify** this recipe with ingredients that are high in protein, low in GI, and high in fibre.

Click here to access a database where you can search for the GI value of food. Foods in the database with GI values less than or equal to 55 are considered low GI.

**Brainstorm** some ingredients you could use in the stir-fry and **record** them in the table below.

| High in protein | Low in GI | High in fibre |
|---|---|---|
| | | |

### Step 2

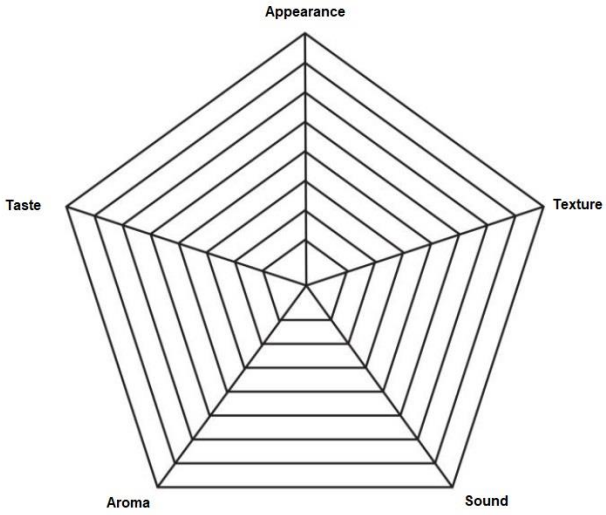
**Fill in** the recipe template for the stir-fry you will make.

### Step 3

**Make** the stir-fry in class.

## Step 4

1. **Conduct** a sensory evaluation of your stir-fry using the diagram below:
   - Mark a dot on the continuum that best represents how you feel the food meets each desired sensory characteristic.
   - After rating the sensory characteristics of each sample food, join the dots together.
   - The more the dots represent a hexagon shape, the more the food product evaluated meets the sensory characteristics listed.




2. Use descriptive words to **describe** the sensory properties of your stir-fry in the table below.

| Appearance | Texture | Sound | Aroma | Taste |
|---|---|---|---|---|
| | | | | |

3. In the table below, **discuss** how the stir-fry you made best met the criteria in the design brief.

| Design Brief Criteria | In what ways did or didn't you meet this criterion? |
|---|---|
| Be healthy and contain foods from the five food groups; | |
| Fill him up, give him some energy and help him maintain concentration at work; | |
| Be quick and easy to make. | |
| Contain chicken; | |
| Use the stir-fry recipe at the link below; and | |
| Look appealing. | |

## Recipe Template

| **Student Name:** | | **Recipe Name:** | |
|---|---|---|---|
| **Source/ Weblink:** | (please print) | | |
| **Serves:** | | **Cooking Method:** | (no deep-frying) |
| **Preparation Time:** | | **Cooking Time:** | |

**Food Order:** (include ingredient measurements and quantities)

| **Fruits and Vegetables** | **Meat, Fish and/or Poultry** | **Refrigerator/ Freezer** | **Pantry** |
|---|---|---|---|
| | | | |

| **Specialised Equipment:** | |
|---|---|

**Method:**

| **Safety Rules:** | **Process/ Terms:** |
|---|---|
| | |

# Practical Activity and Record Two

## Sensory Analysis

Sensory analysis is also called a sensory evaluation or sensory test. Sensory analyses help describe the physical properties of food and determine how well-liked a food product is. In the food industry, approximately 100 people would be employed to participate in sensory taste tests.

This task involves completing a range of sensory taste tests as a means to explore the sensory appreciation of different foods. Completing this task will give you the required skills to undertake sensory tests in school-assessed coursework throughout the year; however, you will not be asked to remember the specific types of tests.

***Test A: Conducting a Preference (Hedonic Scale) Sensory Test***

Preference sensory tests supply information about people's preferences for a food product. A hedonic rating scale is a type of preference test. The term hedonic means having to do with pleasure, so rating scales with likes or dislikes are called hedonic rating scales. They involve rating food to determine how much sensory testers like or dislike a food product.

**Aim:** To determine the extent of liking/appreciation for three foods.

**Materials per student:**

1 tray | 1 glass of water | 1 record sheet

3 varieties of food

**Procedure:**

The person conducting the test arranges the food on three individual plates. They code each plate with the slices of different food on them with a ○, □ and ✳ (they must remember which code they assigned to each sample of food).

The sensory testers record how they feel about each sample of the hedonic chart below.

The person conducting the test collects the scoresheets and calculates the results.

They then reveal the sensory testers' most and least liked varieties of food.

**Results:**

| |  Like a lot |  Like a little |  Neither like nor dislike |  Dislike a little |  Dislike a lot |
|---|---|---|---|---|---|
| Sample ○ | | | | | |
| Sample □ | | | | | |
| Sample ✳ | | | | | |

***Test B: Conducting a Difference (Triangle) Sensory Test***

The triangle test is used to see if there is a noticeable difference between two similar products. In this type of sensory test, the sensory tester is presented with three coded samples; two samples are the same, and one is different. The tester is asked to identify the sample that is different.

**Aim:** To determine if there is a detectable difference between two varieties of foods, such as grapes.

**Materials per student:**

1 tray 1 glass of water 1 record sheet

2 samples of one type of food and 1 sample of a similar variety of food, e.g., one type of grape is compared to another grape variety

**Procedure:**

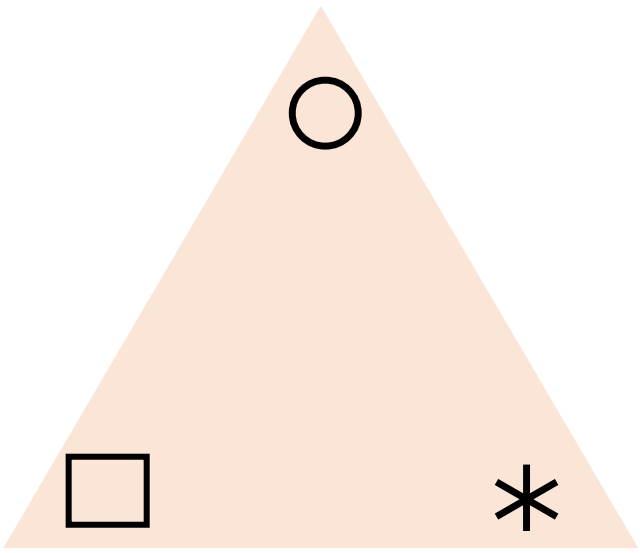
The person conducting the test arranges the food samples on each of the corners of the triangle on the ○, □ and ∗ (they must remember which codes they assigned to each sample).

In front of you are three coded samples, two are the same, and one is different.

Observe each sample's appearance, aroma, texture, sound, and taste.

Circle the one that is different from the other two.

**Results:**




**Discussion questions:**

Did you identify which samples were the same and which were different?

Which five senses did you rely upon most to help you decide? Or did you use a combination of your senses?

***Test C: Conducting a Descriptive Sensory Ranking Test***

Descriptive rating tests are used to evaluate pre-selected sensory characteristics of a food. The sensory characteristics can be rated using star diagrams.

**Aim:** To compile a sensory profile of two varieties of similar types of food.

**Materials per student:**

1 tray 1 glass of water 1 record sheet

2 samples of similar foods

**Procedure:**

Decide on the sensory characteristics of the similar foods you have decided to rate, e.g., nutty flavour.

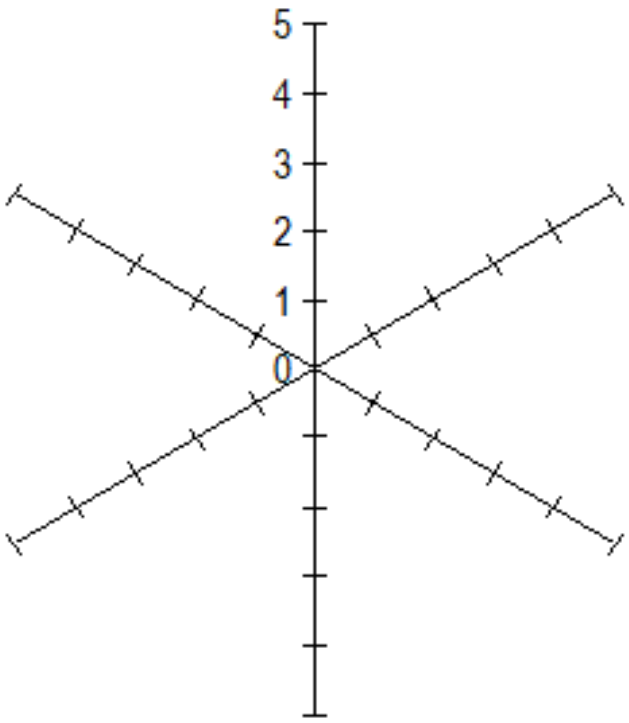
Label the star diagram below with the sensory characteristics at the end of each line.

Mark a dot on the continuum that best represents how you feel the food meets each desired sensory characteristic.

After rating the sensory characteristics of each sample food, join the dots together. Use a different colour pen to rate each sample.

The more the dots represent a hexagon shape, the more the food product being evaluated meets the sensory characteristics listed.

**Sample A**



| **Discussion questions:** |
| --- |
| Which sensory characteristic received the highest rating? |
| Which sensory characteristic received the lowest rating? |
| Were you surprised by any of the results? |
| What was your overall sensory appreciation of the dish like? |

Visit this website to find out some adjectives to describe foods:

http://archive.foodafactoflife.org.uk/attachments/ee816658-1eed-4b1756de6e61.pdf

# Summary Activity

**Complete** the summary activity below.

<table>
<tr><td colspan="2">Appetite</td></tr>
<tr><td>What is appetite?</td><td>What is the body’s physiological response to appetite?</td></tr>
<tr><td rowspan="3"></td><td></td></tr>
<tr><td>Explain the relationship between appetite and conditioning.</td></tr>
<tr><td></td></tr>
<tr><td colspan="2">Give an example of when you had an appetite for food and describe what was happening to your body.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Satiety</td></tr>
<tr><td>What is satiety?</td><td>What is our body’s physiological response to satiety?</td></tr>
<tr><td></td><td></td></tr>
<tr><td colspan="2">Give an example of when you experienced satiety and describe how this felt.</td></tr>
<tr><td colspan="2"></td></tr>
</table>

# Exam Preparation

## Section A – Multiple Choice Questions (5 marks)

**Question 1**

Sweet potatoes provide good satiety because they are:

a. low in fat.
b. high in protein.
c. low GI.
d. high in starch.

**Question 2**

A student hears the school bell at 1 pm and begins to think about eating lunch. This is an example of:

a. appetite.
b. physiological response.
c. hunger.
d. conditioned response.

**Question 3**

Which of the statements below best reflects someone with an appetite for food?

a. Peter has eaten a salad sandwich and an apple but wants a sweet 'treat.'
b. John has eaten a salad sandwich and an apple. He has no desire to eat any more food.
c. For the last hour, Sam has been experiencing hunger pains.
d. Ian ate a large breakfast and had his apple around 10 am; he is not hungry and plans to eat his salad sandwich a little later.

**Question 4**

Which of the following terms are best used to describe the sensory properties of food?

a. tart, creamy, rich, and delicious.
b. sour, sweet, crunchy, and thin.
c. spicy, colourful, crisp, and beautiful.
d. awful, bland, dull, and yucky.

**Question 5**

Sam ate a large breakfast earlier in the morning. He was still quite satisfied and had no desire to eat more food until he smelt some freshly baked cookies. He eats a few of the cookies. This is an example of:

a. hunger.
b. hormones.
c. appetite.
d. satiety.

## Section B – Short Answer Responses ( 20 marks)

**Question 1** (6 marks)

The weight and number of kilojoules found in various foods are listed below.

| Foods | An orange | Plain chocolate bar | Chunky homemade vegetable and legume soup |
|---|---|---|---|
| **Weight (g)** | 190 | 50 | 200 |
| **Energy value (kJ)** | 187 | 1120 | 410 |

a. Select one food that is more likely to help someone achieve satiety.

Justify your selection. (3 marks)

b. Select one food that is less likely to help someone achieve satiety.

Justify your response. (3 marks)

**Question 2** (3 marks)

High protein foods help individuals achieve satiety. Provide an example of a food that is a good source of protein and explain why foods containing protein provide satiety. (3 marks)

**Question 3** (5 marks)

Explain the difference between appetite and satiety.

Give an example of when someone may experience an appetite and satiety at the same time. (5 marks)

**Question 4** (2 marks)

Outline the body's physical response to appetite. (2 marks)

**Question 5** (4 marks)

Some parents enforce a rule that their children must eat everything on their plate or else they cannot eat dessert. This is often referred to as 'clean plate syndrome.'

Discuss how this syndrome could influence the conditioning of appetite and satiety. (4 marks)

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a. Select one food that is more likely to help someone achieve satiety.

Justify your selection. (3 marks)

The student needed to select one food more likely to help someone achieve satiety.

1 mark was awarded for selecting the orange or the homemade soup.

For 2 marks, the student needed to provide two valid reasons for selecting this food.

One of the following responses would be suitable:

The homemade vegetable soup is likely to help someone achieve satiety because it is chunky. Generally, the less food is cut up, the longer it takes the body to digest it.

The homemade soup is the highest in weight and, therefore, more likely to contribute to satiety by making someone feel full for longer.

The homemade soup contains vegetables that might be low GI, and the orange is low GI. This means that glucose from these foods is released into the body more slowly; this slow energy release reduces the need for someone to eat more food.

The homemade soup and the orange contain fibre, which would slow digestion down and make someone feel full for longer.

The legumes in the soup contain protein. It takes longer for protein to be digested in the stomach, making a person feel full for longer.

b. Select one food that is less likely to help someone achieve satiety.

Justify your response. (3 marks)

The student needed to select one food less likely to help someone achieve satiety.

1 mark was awarded for selecting the chocolate bar.

For 2 marks, the student needed to provide one valid reason for selecting this food.

The chocolate bar weighs less and is energy-dense. The energy is likely to come from sugar, which means there would be a quick release of glucose in the blood after consuming it. The person who consumed it would be hungry again soon.

**Question 2** (3 marks)

High protein foods help individuals achieve satiety. Provide an example of a food that is a good source of protein and explain why foods containing protein provide satiety. (3 marks)

For 1 mark, the student needed to identify a food that is a good source of protein.

Some possible answers include red meat, chicken, eggs, cheese, yoghurt, legumes, and tofu.

For 2 marks, the student needed to explain why protein helps someone achieve satiety.

Protein makes someone feel full for longer because protein takes a long time to be digested in the stomach.

Or

Protein may make someone feel full for longer because reducing the level of the hormone ghrelin, which activates hunger and increases the levels of hormones that signal satiety.

**Question 3** (5 marks)

Explain the difference between appetite and satiety.

Give an example of when someone may experience an appetite and satiety at the same time. (5 marks)

For 2 marks, the student needed to explain what appetite refers to.

For 2 marks, the student needed to explain what satiety refers to.

A comparison between the two must be made for full marks.

Satiety is the full feeling that someone has after eating food. They may not feel overfull, but they do feel comfortably satisfied. In contrast, appetite can occur regardless of whether someone feels full. Appetite means someone is eating or wants to eat because they desire a particular food.

For 1 mark, the student needed to explain when someone may experience appetite and satiety at the same time. The student should not receive a mark if they only referred to appetite or satiety. No half marks are to be awarded.

Someone may experience satiety after eating a roast meal. They may see the dessert that is being offered and may want to eat it. Therefore, they may eat the dessert because they have an appetite, even though they are already satisfied after eating the roast meal.

**Question 4** (2 marks)

Outline the body's physical response to appetite. (2 marks)

The student needed to explain how the body responds to appetite.

Any two of the following responses are acceptable.

When people see food they desire, they produce saliva from the salivary glands.

The stomach begins to release digestive juices so that it is ready to digest the food that the body is expecting.

A message is sent from our eyes, ears, and nose that signals to the brain that food is about to be eaten.

**Question 5** (4 marks)

Some parents enforce a rule that their children must eat everything on their plate or else they cannot eat dessert. This is often referred to as 'clean plate syndrome.'

Discuss how this syndrome could influence the conditioning of appetite and satiety. (4 marks)

The student needed to explain how the clean plate syndrome impacts the conditioning of appetite and satiety.

Satiety is when a person has eaten enough food to give them a feeling of fullness. When we tell children they must eat all the food on their plate; we are conditioning them to eat until they have eaten all their food. We should be telling them to eat until they feel full. If we continue telling them to eat all the food on their plate, they will be conditioned to keep doing so.

We often eat foods like desserts because we have desire and an appetite for them, rather than needing them to satisfy our hunger. When parents tell their children they can have dessert if they eat all their dinner, they are conditioning their children to believe they can eat dessert once they have finished their dinner. In the future, these children may continue eating after dinner merely because they are conditioned to do so rather than still being hungry.

| 0 marks | 1 mark | 2 marks | 3 marks | 4 marks |
|---|---|---|---|---|
| The student's response does not relate to the question. | The student provides a very brief response that refers to appetite and satiety only. | The student provides a limited discussion about appetite and satiety. They discuss the clean plate syndrome or conditioning, but not both. | The student provides a brief discussion about conditioning, appetite, and satiety. They discuss the relationship between appetite and satiety with the clean plate syndrome. | The student provides a more detailed discussion about appetite and satiety. They discuss the relationship between appetite and satiety with the clean plate syndrome. |