Year 8 Digestion Worksheet

Year 8 · KS3 Biology · Nutrients, the digestive system and enzymes

Name: ..... **Class:** ..... **Date:** ..... **Score: / 56**

Section A: Nutrients and food tests [17 marks]

1 Complete the table to show the main job of each nutrient in the body. **[7]**

Nutrient	Main job in the body	Example of a food source
Carbohydrate		Bread, rice, pasta
Protein		Meat, fish, beans
Lipid (fat)		Butter, oils, nuts
Fibre		Wholemeal bread, vegetables
Water		Drinks, fruit
Calcium (mineral)		Milk, cheese
Vitamin C		Oranges, peppers

2 Complete the table for the food tests. **[8]**

Nutrient tested	Reagent used	Positive result
Starch		
Glucose (a sugar)		
Protein		
Lipid		

3 Describe two safety precautions when carrying out the Benedict's test. **[2]**

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Section B: The digestive system and enzymes [22 marks]

4 Put these parts of the digestive system in the order that food passes through them: stomach, mouth, anus, small intestine, oesophagus, large intestine. **[3]**

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5 Name the organ that does each job. Choose from: stomach, small intestine, large intestine, liver, pancreas, oesophagus. **[6]**

Job	Organ
Squeezes food down to the stomach by peristalsis	
Churns food and adds acid and protease	
Where most digestion and absorption of food happens	
Absorbs water from the undigested food	
Makes bile	
Makes enzymes such as amylase, protease and lipase	

6 Complete the table about digestive enzymes. **[6]**

Enzyme	Breaks down	Into
Amylase		
Protease		
Lipase		

7 Why do large food molecules need to be digested before they can be absorbed? **[2]**

8 Bile is made in the liver and stored in the gall bladder. Explain how bile helps digestion. **[3]**

9 The stomach produces hydrochloric acid. Give two functions of the acid. **[2]**

Section C: Absorption [6 marks]

10 The small intestine is lined with villi. Explain two ways villi are adapted for absorption. **[2]**

11 What is the main job of the large intestine? **[1]**

12 Teeth break food into smaller pieces. Explain why this helps digestion. **[2]**

13 State the name of the process in which undigested food leaves the body through the anus. **[1]**

Section D: Data and enzyme investigation [11 marks]

14 A food contains 20 g protein, 50 g carbohydrate and 10 g fat. Energy released: carbohydrate 17 kJ per g, protein 17 kJ per g, fat 37 kJ per g. Calculate the total energy in the food. **[3]**

15 A teenager eats very little fibre. Describe one possible problem and suggest one food to eat more of. **[2]**

16 A student investigates how temperature affects the enzyme amylase. Starch solution is mixed with amylase at three temperatures. Every minute a drop is tested with iodine. Results: at 20 °C starch gone after 8 minutes; at 37 °C starch gone after 2 minutes; at 60 °C starch still present after 10 minutes.

(a) At which temperature did amylase work fastest? **[1]**

(b) Explain the result at 60 °C. **[2]**

(c) What colour shows that the starch has been digested? **[1]**

(d) State two variables the student should keep the same. **[2]**