

Activity 1 – sheet 1 of 2

Programme Questions

Food Tests

1. Staple foods make up the bulk of a meal. Staple foods like bread contain a lot of starch. Which other foods would you expect to contain starch?

2. How could you use the Benedict's test to decide which fruits contain the most sugar? Would the test be reliable?

The Digestive System

1. It is possible to drink a glass of water whilst standing on your head! Can you explain this using the idea of peristalsis? Why doesn't the water run back out of your stomach?

2. If you eat a very large meal you may feel a burning at the back of your throat. This is called heartburn, but it has nothing to do with your heart! Can you explain how we get heartburn using information about secretions in the stomach?

3. The surface area of the small intestine is 9m^2 . How is such a large area achieved?

4. How does the structure of the small intestine help it to absorb food?

5. Can you list the organs that food passes through from the mouth to the anus?

Activity 1 – sheet 2 of 2**Programme Questions****Digestive Enzymes**

1. During digestion larger nutrient molecules are broken down into smaller ones. Complete the table to show how certain enzymes help to break down nutrients into smaller molecules.

Nutrient	Enzyme	Product of digestion
starch		
protein	protease	
fat		fatty acids and glycerol

2. Bile salts neutralise acids made in the stomach. Can you explain how this helps amylase to break down starch?

3. When investigating the digestion of fat we use a phenolphthalein indicator. Why is a dilute base added to the mixture before the start of the investigation?

Activity 2 – sheet 1 of 1

Digestion Taboo

- Cut out the cards below.
- Then take turns to choose a card.
- The person with the card has to explain the word highlighted in bold but cannot use any of the taboo words listed on the card.
- The other members of the group have to guess which part of the digestive system is written on the card.

<p>pancreatic duct <i>taboo words:</i> pancreas small intestine pancreatic juice</p>	<p>teeth <i>taboo word:</i> mouth</p>	<p>tongue <i>taboo word:</i> mouth</p>	<p>epiglottis <i>taboo words:</i> oesophagus trachea wind pipe</p>
<p>circular and longitudinal muscles <i>taboo words:</i> movement peristalsis</p>	<p>oesophagus <i>taboo words:</i> mouth stomach</p>	<p>stomach <i>taboo words:</i> oesophagus acid pepsin</p>	<p>gastric pit <i>taboo words:</i> stomach acid pepsin</p>
<p>anus <i>taboo words:</i> faeces large intestine</p>	<p>appendix <i>taboo words:</i> large intestine appendicitis</p>	<p>mouth <i>taboo words:</i> teeth tongue saliva</p>	<p>small intestine <i>taboo words:</i> absorption digestion enzymes</p>
<p>villus <i>taboo words:</i> absorption small intestine blood capillaries</p>	<p>salivary gland <i>taboo words:</i> words mouth saliva amylase</p>	<p>bile duct <i>taboo words:</i> bile gall bladder small intestine</p>	<p>large intestine <i>taboo words:</i> absorption water small intestine</p>
<p>pancreas <i>taboo words:</i> pancreatic juice small intestine enzymes</p>	<p>liver <i>taboo words:</i> bile gall bladder</p>	<p>gall bladder <i>taboo words:</i> bile duct liver bile</p>	<p>rectum <i>taboo words:</i> large intestine anus faeces</p>

Activity 3 – sheet 1 of 1

Enzyme True or False

- Decide whether each statement is true or false.
 - Then decide if the second statement explains the first.
- 1. A)** Bile digests fats.
B) Bile does not contain enzymes.
 - 2. A)** Enzymes are sensitive to temperature.
B) The shape of an enzyme molecule can be permanently altered by high temperature.
 - 3. A)** The optimum pH for all enzymes is pH 7.
B) Pepsin works best in acid conditions.
 - 4. A)** Enzymes only work with one substrate.
B) Enzymes are produced by a particular gland in the digestive system.
 - 5. A)** An enzyme molecule can help to digest many molecules of its particular substrate.
B) Enzymes are biological catalysts.
 - 6. A)** In the stomach proteins are mainly digested by acids.
B) Hydrochloric acid is secreted in the stomach where protein is digested.
 - 7. A)** Enzymes are denatured by cold temperature.
B) Enzymes work more slowly at low temperatures.
 - 8. A)** All nutrients have to be digested before they can be absorbed into the blood.
B) Large molecules cannot pass through the wall of the small intestine.
 - 9. A)** Pink phenolphthalein indicator is decolourised when fat is digested by lipase.
B) Fatty acids are made when fats are digested by lipase.
 - 10. A)** Amylase digests starch to make glucose, a simple sugar.
B) Starch is a complex carbohydrate made up of many thousands of glucose molecules.