

# Year 8 Biology - Objectives and Assessment

Lesson	Range and Content Objective	Skills Objective	Activities	Formal Assessment	Success Criteria
1.	To know the main nutrients in food and their jobs in the body		<ul style="list-style-type: none"> <li>Children list food eaten in last 24 hrs and try to explain where they came from. Realise that all food is animal or plant based (i.e. living thing)</li> <li>List reasons we eat, define the main nutrients and their jobs in the body. Look at food packaging and labelling.</li> <li>Consider a 'balanced diet (food pyramid) (supporting worksheets e.g. 'what's missing?')</li> </ul>		<ul style="list-style-type: none"> <li>Must: Name the main nutrients in food, and give examples of foods that contain them.</li> <li>Challenge: Give their function in the body</li> </ul>
2.	To understand that balanced diets vary depending on lifestyle.	Recognise how aspects of science affect groups of people.	<ul style="list-style-type: none"> <li>Who eats what? (<b>there are big versions of the meal plates in the cupboard by the door and a scanned version on the shared drive</b>) Matching meal to person task, listing nutrients and considering needs of person related to lifestyle, giving explanations.</li> </ul>	In assessment books. (assess knowledge of food groups)	<ul style="list-style-type: none"> <li>Must match a meal to a person, giving at least one reason for your choice.</li> <li>Challenge, give several reasons for your choice and use nutrients in your answer.</li> </ul>

# Year 8 Biology - Objectives and Assessment

3.	Different and special diets	Recognise how aspects of science affect groups of people.	<ul style="list-style-type: none"> <li>• Nutrient deficiency ppt (<b>remind me and I'll email it to you</b>) outlines conditions that can arise if nutrients are deficient.</li> <li>• Pregnancy, diabetics, coeliac, scurvy, rickets...</li> <li>• Groups can research these.</li> <li>• Salt-good or bad worksheet</li> </ul>		<ul style="list-style-type: none"> <li>• Must describe 2 conditions that can arise from an unbalanced diet.</li> <li>• Challenge: Suggest reasons that a lot of these conditions have become rare over time.</li> </ul>
4.	How do we know what nutrients are in food?	Recognise aspects and applications of science within particular jobs or roles (food scientists)	<ul style="list-style-type: none"> <li>• May take 2 lessons</li> <li>• Demo tests for starch, protein and fat.</li> <li>• Children carry out tests on a pre-packaged sandwich, or other foodstuffs, recording nutrients found</li> <li>• NB you will need to define starch as a type of carbohydrate.</li> <li>• Demo test for glucose (again define) and carry out on food samples.</li> <li>• Food tests error spotting worksheet.</li> </ul>		<ul style="list-style-type: none"> <li>• Must describe how to test for 2 of the 4 nutrients shown</li> <li>• Challenge describe how to test for all of the nutrients shown giving the names of the chemicals used and what a positive outcome would look like.</li> </ul>
5.	To understand what happens to food when we eat it.		<ul style="list-style-type: none"> <li>• Groups label blank digestive system, annotation with what they think happens to food once its eaten</li> <li>• Outline the main parts and jobs of the digestive system. Children</li> </ul>		<ul style="list-style-type: none"> <li>• Must be able to label a diagram of the digestive system</li> <li>• Challenge: state what happens to food at each stage.</li> </ul>

# Year 8 Biology - Objectives and Assessment

			<p>label a copy.</p> <ul style="list-style-type: none"> <li>Focus on small intestine...food must be small (broken down/digested) to be able to pass through.</li> </ul>		
6.	To understand how the small intestine works.	To use models to describe a scientific process.	<ul style="list-style-type: none"> <li>Set up a model small intestine using visking tubing, starch + glucose 'meal' as contents and water as surrounding 'blood'</li> <li>What should happen? Children make predictions (groups can set up own models)</li> <li>Test 'blood' for starch and glucose.</li> <li>Groups come up with theories as to why the starch didn't come through.</li> <li>Can use a molecular model to show this in big or online animation.</li> </ul>	Are diagrams labelled and explained correctly?	<ul style="list-style-type: none"> <li>Must explain what the model and its parts represent.</li> <li>Challenge: Explain your findings and relate this to the human body.</li> </ul>
7.	To understand how food is digested.	To use models to describe a scientific process.	<ul style="list-style-type: none"> <li>Discuss ideas as to what has to happen to starch, discuss idea of enzyme action.</li> <li>Supporting worksheets</li> <li>Add amylase to starch and leave. Test for glucose before and after adding enzyme, to show starch breaks down into glucose.</li> </ul>		<ul style="list-style-type: none"> <li>Must explain what an enzyme is and does using diagrams.</li> <li>Challenge: explain how this helps us absorb food in the small intestine</li> </ul>
8.	To understand how food is digested.	To use models to describe a scientific	<ul style="list-style-type: none"> <li>When enzymes attack task.</li> </ul>	In assessment books. AF1 levelled	AF1 levelled S/C

# Year 8 Biology - Objectives and Assessment

		process.		criteria	
9.	What conditions do enzymes need to work best?	AF3 Decide on the most appropriate format to present scientific data.	<ul style="list-style-type: none"> <li>Exploring science Saliva and starch task (the one that has a spotting tray of starch and enzymes at various temps that is tested with iodine)</li> <li>Graph drawing and answering questions</li> <li>Can extend to pH needed for enzyme action.</li> </ul>	AF3 graph levelled s/c	Graph S/C <ul style="list-style-type: none"> <li>Must give optimum temperature for enzyme action and explain this.</li> <li>What pH do you think enzymes work best at?</li> </ul>
10.	To know how the body releases energy from food.		<ul style="list-style-type: none"> <li>Where does glucose go after it enters the blood stream? Why?</li> <li>Recap burning as a means to release energy.</li> <li>How is this similar to our bodies? (look at equations for burning and respiration and compare)</li> <li>Prove burning and respiration are similar by looking at the by products of each (see practical task sheet) (I usually get them to discover what products the body makes and work the eqn backwards)</li> <li>Record findings.</li> <li>Define respiration as an equation.</li> </ul>		<ul style="list-style-type: none"> <li></li> </ul>
11.	To understand that respiration is one of the 7 characteristics		<ul style="list-style-type: none"> <li>Rearranging of respiration equation in groups to reinforce.</li> <li>Pea problem task (group work)</li> </ul>		<ul style="list-style-type: none"> <li>Must give 7 characteristics of living things</li> </ul>

# Year 8 Biology - Objectives and Assessment

	of ALL living things.		<ul style="list-style-type: none"> <li>Respiration review task.</li> </ul>		<ul style="list-style-type: none"> <li>Challenge: explain this importance of respiration to all living things.</li> </ul>
12.	To know where the oxygen for respiration comes from.		<ul style="list-style-type: none"> <li>Group ideas on how oxygen enters body and what happens in the lungs.</li> <li>Diagram of lung explained and labelled. (I do have a ppt on this if you would like it please email me)</li> <li>Looking at a pigs lung (this can take a lesson in itself)</li> <li>Alveoli labelled diagram showing gas exchange and features.</li> </ul>		<ul style="list-style-type: none"> <li>Must label a diagram of the lung showing the main parts.</li> <li>Challenge: explain the job of the alveoli.</li> </ul>
13.	To apply knowledge of gas exchange.	<p>To make comparisons and explain them</p> <p>Repeat readings and averaging.</p>	<ul style="list-style-type: none"> <li>Discuss composition of air (as a pie chart? Or percentages)</li> <li>Groups discuss and sketch/estimate what they think is the composition of exhaled air.</li> <li>How can we test this? Demo burning candle as a means of measuring the amount of oxygen in air.</li> <li>Children collect exhaled air and measure the amount of oxygen.</li> </ul>		<ul style="list-style-type: none"> <li>Must describe the differences between inhaled and exhaled air in terms of more/less</li> <li>Challenge: explain why there are differences and how these differences have arisen.</li> </ul>
14.	Smoking and the lungs		<ul style="list-style-type: none"> <li>Composition of cigarette smoke.</li> <li>Effects of smoking on the</li> </ul>		<ul style="list-style-type: none"> <li></li> </ul>

# Year 8 Biology - Objectives and Assessment

			respiratory system, to include: <ul style="list-style-type: none"> <li>➤ Mouth</li> <li>➤ Trachea, bronchi, bronchioles (cilia cells)</li> <li>➤ Alveoli</li> </ul>		
15.	To know how glucose and oxygen are transported around the body	To use models to explain a scientific process	<ul style="list-style-type: none"> <li>• Circulation system diagram/model, emphasising what is happening at each point and the contents of the blood at any one point.</li> <li>• Historical Theories on circulation system</li> </ul>		<ul style="list-style-type: none"> <li>• Must describe the journey of blood around the body</li> <li>• Challenge: explain what would be in the blood at any point on its journey.</li> </ul>
16.	To know the components of blood		<ul style="list-style-type: none"> <li>• Group research task, researching the components and jobs of the main parts of blood.</li> <li>• I've done it as a kagan structure as a group research task with feedback at the end.</li> </ul>		<ul style="list-style-type: none"> <li>• Must name and describe the 4 main parts of blood.</li> <li>• Challenge: describe the function of each of the parts.</li> </ul>
			<ul style="list-style-type: none"> <li>• END OF TOPIC TEST</li> </ul>		