



SCIENCE YEAR 3-4 Cycle A – Unit 1

The human body

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RANGE

Interdependence of organisms

1. the names, position, functions and relative sizes of a human's main organs – **skeleton & teeth**

KEY VOCABULARY

skeleton
skull
ribs
spine
heart
lungs
brain
molar/canine/incisor
decay
protect/support
tally
table
bar chart
axes

Developing thinking

(Plan-Develop-Reflect
integrated into activities)



LNF – Main Numeracy Strands covered*

Strand:

Developing numerical reasoning

Elements:

Identify process and connections
Represent and communicate
Review

Strand:

Using data skills

Elements:

Collect and record data
Present and analyse data
Interpret results

**Refer to LNF numeracy framework for details of
specific skills within each element.*

LNF – Literacy (writing) opportunities

Element: Organising information and ideas
Writing accurately

Writing to inform, instruct and explain

Developing ICT



*School to identify and provide opportunities for
developing this skill within the scope of the unit.*

Curriculum Cymreig



*School to identify and provide opportunities
for developing this skill within the scope of the
unit.*

Personal and social education



*School to identify and provide opportunities
for developing this skill within the scope of the
unit.*

Science – Medium Term Planning (half term)

Year Group	3/4	Term	Cycle A – Unit 1	Unit Title	<i>The human body</i>
Range: <i>Interdependence of organisms</i>					
1. the names, position, functions and relative sizes of a human's main organs					
Cross Curricular Links:					
Skills (Principal skills in bold italics)	Suggested activities	Resources and web links	Assessment Opportunities		
<p>COMMUNICATE Communicate clearly using speech and writing</p> <p>PLAN <i>Make comparisons and identify and describe trends</i></p> <p>REFLECT Suggest how the method could have been improved</p>	<p>1. Big Question: What do you know about the human body?</p> <p>Intro to topic and discussion of what pupils know about the human body. Show groups simple diagram of human skeleton and challenge them to label components using sticky labels. How much do they already know? Or, challenge pupils to sketch their own ideas about the skeleton and position of the main organs.</p> <p>Record diagnostic assessment – mind map, KWL grid or ideas poster etc.</p> <p>Give pupils a selection of pictures of various animal skeletons. Can they sort them into groups according to different criteria?</p> <p>Introduce the skill – <i>Sorting and comparing</i>. Human body activities: NGfL KS2 science</p> <ul style="list-style-type: none"> • Ask pupils to sort according to their own ideas. Can they justify groupings? Can they re-sort? • Are they able to use a variety of sorting strategies (Venn and Carroll diagrams)? • Are the numbers of ribs always the same in different skeleton images? • Do faster animals always have longer legs? <p>Practise the skill – <i>Sorting and comparing</i>.</p> <ul style="list-style-type: none"> • Challenge pupils to choose one of the previous questions to investigate, e.g do all mammals have the same number of ribs? Do all humans/apes/monkeys have the same number of ribs? • Tabulate findings – consider constructing a bar chart. 	<p>http://resources.hwb.wales.gov.uk/VTC/2008-09/science/cripsat/human_body/eng/index.html</p> <p>http://www.echalk.co.uk/</p> <p>http://www.bbc.co.uk/learning/subjects/science.shtml</p>	<p>Use preferred diagnostic strategy/tool</p> <p>Can pupils organise their findings and display these in a given format? (Level3)</p> <p>Can pupils organise findings and use relevant scientific vocabulary? (Level 4)</p> <p><i>Can pupils identify simple patterns and trends? (Level 3)</i></p>		

<p>COMMUNICATE <i>Search for relevant scientific information</i></p> <p>PLAN Plan method/approach</p> <p>DEVELOP Form considered opinions and make informed decisions</p> <p>REFLECT Describe how they have learned</p>	<p>2. Big Question: Do you know the main organs inside your body?</p> <p>Review pupils' ideas about the organs in the human body.</p> <p>Introduce the skill – Search for scientific information</p> <ul style="list-style-type: none"> Use interactive activities from web links to diagnose pupils' ideas. What organs do they already know about? Challenge pupils to sketch relative positions of the main organs. Ask them to add traffic light assessment by each organ to ascertain their confidence with its position as drawn. Introduce selection of books, websites etc and model key features of non-fiction text. Model how to find out about a chosen organ - contents, index etc. Challenge pupils to create a poem about the organs in the human body. <p>Practise the skill – Search for scientific information</p> <ul style="list-style-type: none"> Pupils to search for and record findings. Help pupils decide the most appropriate method of communicating their ideas, e.g. ideas poster or oral presentation etc. Consider producing a fact-file containing pupils ideas and the information they have gathered. <p>To write to inform Text type: non-chronological report</p>	<p>http://resources.hwb.wales.gov.uk/VTC/2008-09/science/cripsat/human_body/eng/index.html</p> <p>http://www.echalk.co.uk/</p> <p>http://www.bbc.co.uk/learning/subjects/science.shtml</p> <p>Velcro body model with organs Model skeleton</p>	<p><i>Can pupils suggest where to find information? (Level 3)</i></p> <p>Can pupils organise their findings and display these in a given format? (Level3)</p> <p>Can pupils organise findings and use relevant scientific vocabulary? (Level 4)</p>
<p>PLAN Plan the process/method to be used</p> <p>Plan the observations and measurements to take</p> <p>DEVELOP <i>Make careful observations and accurate measurements</i></p> <p><i>Make comparisons and identify patterns in data/findings</i></p> <p>REFLECT Suggest how the method could have been improved</p>	<p>3. Big Question: How do our skeletons differ?</p> <p>Discuss the variety of heights in class and how these are related to age, male/female etc.</p> <ul style="list-style-type: none"> - Are boys' arms always longer than girls' arms? - Do taller people have longer arms? - Do older pupils have longer legs? <p>Introduce the skill – Make careful observations.</p> <ul style="list-style-type: none"> Challenge pupils to select body dimensions to measure. Review simple equipment and standard measurements. How do we measure awkward shapes, e.g. skull, arm circumference, nose length etc. Recap on table use as a means of recording findings. <p>Practise the skill – Make careful observations.</p> <ul style="list-style-type: none"> Challenge pupils measure and record dimensions. Encourage pupils to 'check' measurements as an introduction to the concept of reliability. What are their findings? Do all boys have longer arms, legs, heads etc? Consider creating bar charts to communicate findings. Can pupils describe simple patterns and trends in findings? <p>Recap the principal functions of the skeleton: support, protection and enabling movement.</p> <p>To write to inform Text type: science write-up/report</p>	<p>http://www.echalk.co.uk/</p> <p>http://www.bbc.co.uk/learning/subjects/science.shtml</p> <p>Velcro body model with organs Model skeleton</p>	<p>Can pupils plan with some independence? (Level 3)</p> <p><i>Can pupils measure using simple equipment? (Level 3)</i></p> <p><i>Can pupils follow a simple series of instructions to gather findings? (Level 3)</i></p> <p>Can pupils make decisions by weighing up evidence? (Level 3)</p>

<p>COMMUNICATE Use scientific vocabulary</p> <p>PLAN Plan the process/method to be used</p> <p>DEVELOP <i>Make careful observations</i></p> <p><i>Make comparisons</i></p>	<p>4. Big Question: What do you know about teeth?</p> <p>Allow pupils to explore a selection of pictures of animal skulls with teeth visible.</p> <p>Introduce the skill – Sorting and making comparisons</p> <ul style="list-style-type: none"> Do all the skulls have the same type and number of teeth? Discuss how to sort the animal skulls according to the number, size, shape of teeth? Can they use a variety of sorting strategies (Venn and Carroll diagrams)? <p>Practise the skill – Sorting and making comparisons</p> <ul style="list-style-type: none"> Complete sorting activity and review strategies used. How are the groups related to mode of life and/or diet? Do any of the pupils' groups reflect herbivores, carnivores? Consider challenging pupils to count and record the number of teeth in different animals' skulls. Tabulate and create a bar chart of results. <p>To write to inform and explain Text type: science write-up/report</p>	<p>NFER Let's Think Through Science</p> <p>http://www.echalk.co.uk/</p> <p>http://www.bbc.co.uk/learning/subjects/science.shtml</p> <p>Large model teeth</p> <p>Pictures of teeth</p> <p>Pictures of variety of animal</p> <p>Skulls showing teeth</p>	<p>Can pupils plan with support? (Level 3)</p> <p><i>Can pupils follow a simple series of instructions to gather findings? (Level 3)</i></p> <p>Can pupils link outcomes to success criteria? (Level 3)</p>
<p>COMMUNICATE <i>Communicate using tables and bar charts</i></p> <p>DEVELOP <i>Make careful observations and use simple equipment</i></p> <p>REFLECT Suggest how the method could have been improved</p>	<p>5. Big Question: Why are our teeth different shapes and sizes?</p> <p>Introduce the skill – Make careful observations using simple equipment.</p> <ul style="list-style-type: none"> Allow pupils to explore their partner's teeth. Ask pupils to raise questions and record ideas. Do we all have the same number and type of teeth? Link to tooth fairy story. Introduce magnifying glasses and digital microscope (TTS Eaiscope) to help pupils make closer observations. Help pupils plan a simple table to record their findings. <p>Practise the skill – Make careful observations using simple equipment.</p> <ul style="list-style-type: none"> Complete survey/observation of teeth in class. Tabulate findings. Take pictures with digital microscope. Sort teeth shapes – what do pupils notice? Introduce key vocabulary – incisor, canine, molar. What are the main functions of each tooth – draw analogies to scissors, nut crackers etc. How do human teeth compare to other animals, including primates? Allow pupils to find information about the structure of a tooth. <p>To write to inform and explain Text type: science write-up/report</p>	<p>http://news.bbc.co.uk/cbbcnews/hi/find_out/guides/tech/teeth/new_sid_3830000/3830561.stm</p> <p>http://www.arkive.org/</p> <p>Large model teeth</p> <p>Magnifying glasses</p> <p>Digital microscope (TTS Eaiscope)</p>	<p><i>Can pupils begin to organize findings, including simple tables and bar charts? (Level 3)</i></p> <p><i>Can pupils follow a simple series of instructions to gather findings? (Level 3)</i></p> <p>Can pupils identify simple patterns? (Level 3)</p> <p>Can pupils suggest how the method could be improved? (Level 3)</p>

<p>COMMUNICATE <i>Use tables and bar charts and relevant scientific vocabulary</i></p> <p>PLAN <i>Make predictions using some previous knowledge</i></p> <p>DEVELOP Make comparisons and identify and describe patterns/trends in data</p>	<p>6. Big Question: Do all humans have the same number of teeth?</p> <p>Recap work on teeth. What are pupils' ideas on the how the number of teeth differs in humans? Help pupils forms questions to investigate, for example: - Do older pupils have more teeth than younger? - Do girls always have more teeth than boys?</p> <p>Introduce the skill – Make predictions using prior knowledge</p> <ul style="list-style-type: none"> • What are pupils' predictions? Why do they think that? • What makes a good prediction? • Discuss how pupils may go about gathering enough data to answer the question. • Model a planning template and discuss steps needed to carry out the task. <p>Practise the skill – Use tables and charts to record findings</p> <ul style="list-style-type: none"> • Pupils carry out investigation and record findings in a simple table. • Review use of tally charts (if necessary). • How are tables organised? • Discuss findings and help pupils identify patterns and draw conclusions. <p>To write to inform and explain Text type: science write-up/report</p>	<p>Concept Cartoons</p> <p>Interactive planning boards</p> <p>http://www.echalk.co.uk/</p> <p>http://www.bbc.co.uk/learning/subjects/science.shtml</p>	<p><i>Can pupils follow a simple series of instructions to gather findings? (Level 3)</i></p> <p><i>Can pupils make predictions using everyday ideas? (Level 3)</i></p> <p>Can pupils suggest how the method could be improved? (Level 3)</p>
<p>COMMUNICATE <i>Use tables and bar charts and relevant scientific vocabulary</i></p> <p>DEVELOP <i>Make comparisons and identify and describe patterns/trends in data</i></p> <p>REFLECT Suggest how the method could have been improved</p>	<p>7. Big Question: Do all humans have the same number of teeth? Cont.</p> <p>Practise the skill – Use tables and charts to record findings</p> <ul style="list-style-type: none"> • Model whole-class bar chart to communicate findings. • Challenge groups to construct their own bar chart using their findings. • What do their findings tell them? • Help pupils identify simple patterns and trends in their findings. • Pupils swap bar charts for peer- or self-assessment. • Identify 2-stars-and-a-wish for each other's work. 		<p><i>Can pupils begin to organize findings, including simple tables and bar charts? (Level 3)</i></p> <p>Can pupils identify simple patterns? (Level 3)</p> <p>Can pupils suggest how the method could be improved? (Level 3)</p>

<p>PLAN Find relevant information and ideas</p> <p><i>Know about hazards and risks</i></p> <p>DEVELOP <i>Use equipment correctly and safely</i></p> <p>REFLECT Link the learning to similar situations within and outside school</p>	<p>8. Big Question: How do we know some drinks harm our teeth?</p> <p>Elicit pupils' ideas on what food/drinks may harm our teeth. Challenge pupils to rank order the foods/drinks according to the potential harm they may cause. Discuss how sugary diets contribute to tooth decay.</p> <p>Introduce the skill – Know about hazards and risks and use equipment safely</p> <ul style="list-style-type: none"> • How can we devise a test to find out which drinks harm teeth? • Model possible ways to investigate the harm fizzy drinks cause to teeth. • What suggestions do pupils have? Can we use real teeth? Or do we need to model this using another material? • Suggest pupils use either chalk or eggshells for a 'model' tooth. <p>Practise the skill - Know about hazards and risks and use equipment safely</p> <ul style="list-style-type: none"> • Challenge pupils to select appropriate equipment in order to carry out the exploration/observation. • Remind pupils of safety hazards (tasting liquids and handling eggshells). • Record observations over a period of time. Can we draw a bar chart of these findings? Why not? (Only qualitative records.) <p>To write to inform and explain Text type: non-chronological report</p>	<p>http://www.healthyteeth.org/</p> <p>Large model teeth Toothpaste Toothbrushes etc Eggshells, chalk Fizzy drinks, milk, water Measuring cylinders</p>	<p><i>Can pupils measure using simple equipment? (Level 3)</i></p> <p>Can pupils say what they have found out from their work? (Level 3)</p>
<p>COMMUNICATE <i>Communicate clearly by speech</i></p> <p>DEVELOP <i>Use prior knowledge to explain</i></p>	<p>9. Big Question: Do you know how to look after your teeth?</p> <p>Invite the school nurse to address pupils on the importance on teeth cleaning. Pupils may wish to list questions to ask the school nurse. Consider asking pupils to present the ideas as part of a school or class assembly.</p> <p>Create a poem or short song to reinforce aspects of oral hygiene.</p>	<p>http://www.healthyteeth.org/</p> <p>Large model teeth Toothpaste Toothbrushes etc</p>	<p><i>Can pupils explain using some science vocabulary/ideas? (Level 4)</i></p>

<p>REFLECT Describe how they have learned, and identify the ways that worked the best.</p> <p><i>Link the learning to similar situations, within and outside school.</i></p>	<p>Revisit initial diagnostic assessment. Can pupils demonstrate understanding at end of topic and discuss new skills learned and/or practised?</p>	<p>Use preferred AfL strategy</p>	<p><i>Can pupils link their learning to familiar situations? (Level 3)</i></p>
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<p>Evaluation</p>			
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