


Dereham Church Infant and Nursery School- Science

	Year group: 2, Spring 1	Area/topic: Humans
<p><i>(Objectives from NC/ELG/Development matters)</i></p> <p>Working scientifically:</p> <ul style="list-style-type: none"> *Asking simple questions and recognising that they can be answered in different ways (A1) *Observing closely, using simple equipment (A2) *Performing simple tests (A3) *Identifying and classifying (A4) *Using their observations and ideas to suggest answers to questions (A5) *Gathering and recording data to help in answering questions. (A6) <p>Animals, including humans (Human focus) :</p> <ul style="list-style-type: none"> *Notice that animals, including humans, have offspring which grow into adults (C5) *Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (C6) *Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (C7) 		

Prior learning	Future learning
<p>Animals, including humans (human focus):</p> <ul style="list-style-type: none"> *Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Year 1) *Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Year 1) 	<p>Animals, including humans:</p> <ul style="list-style-type: none"> *Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. (Y3 - Animals, including humans) *Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) *Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats) *Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)
Working scientifically & encouraging scientific enquiry	

Observations

- *Children will be given the opportunity to observe and hold a real organ. Children will draw the organ and look at it closely using simple equipment.
- *Children will make observations of body parts and compare with their peers such as height.
- *Children to investigate germs using a UV light and glitter gel.

Comparative and fair testing

- *Children will record their resting heart rate. They will then have the chance to complete a range of activities and measure beats per minute after each activity. Children will compare the results for their own heart rate after each activity as well as with the results of their peers.
- *Children will measure the amount of sugar contained in a variety of food and drink items to compare.
- *Children will complete an investigation by measuring their body parts and comparing these recognising similarities and differences.

Identifying and classifying

- *Name the different food groups and sort items of food into the correct groups (Carbohydrates, protein, dairy, fruit & vegetables, fats and sugar).
- *Children will identify and name the different stages of a human life cycle.

Pattern seeking

- *Children will record their resting heart rate. They will then have the chance to complete a range of activities and measure beats per minute after each activity. Children will compare the results for their own heart rate after each activity as well as with the results of their peers.
- *Children will compare their own measurements of body parts as well as with those of their peers.

Research using secondary resources

- *Children will see drawings, labelled diagrams and photos of humans, organs and skeletons.
- *Children will use a 3D model of a human to understand where different organs are in the body.
- *Children will use a skeleton puzzle to understand how the bones are connected.

What pupils need to know or do to be secure

Key knowledge and skills	Possible evidence
<ul style="list-style-type: none">*I understand that humans need air, food and water to survive and be healthy. (C6 & C7)*I understand that meat comes from an animal as well as that fruit and vegetables are grown	<p>There will be evidence of children meeting the 'I can' statements through:</p>

from seeds or bulbs. (C7)

*I can use and understand the correct vocabulary for carbohydrates, protein, fruit, vegetables, dairy, fats and sugar whilst being able to sort food into the correct group. (C7)

*I understand the importance of a healthy balanced diet and the amount that should be eaten from each food group. (C7)

*I understand that each food group provides something important for the human body to survive and be healthy; I know that food gives us energy. (C7)

*I can design a healthy plate. (C7)

*I can explain how my body feels when I exercise; I understand that exercise keeps my body healthy and working correctly. (C7)

*I can explain how my heart feels when I exercise compared to when I rest. (C7)

*I understand that my body has organs which need to be looked after by exercising and eating well. I can name a *few* major organs. (C6 & C7)

*I can explain that I breathe in oxygen and breathe out carbon dioxide. (C6)

*I understand the importance of rest after exercise so that my body can recover. (C7)

*I understand the word 'hygiene' and recognise the different ways I can look after my body and have good hygiene including washing my body, wearing clean clothes, brushing my hair and teeth. (C7)

*I can recognise the impact bad hygiene can have on a person's body including what happens if people do not brush and clean their teeth. (C7)

*I can recognise that hygiene is also looking after belongings and cleaning where you live as well as objects around you. (C7)

*I understand what germs are and how to stay safe from germs. (C7)

*I understand how germs can spread as well as how to prevent this. (C7)

*I recognise how to prevent illness from germs and the importance of cleaning areas of injury or when I am dirty. (C7)

*I can understand and correctly order the life cycle of a human recognising and naming the different stages. (C5)

*I can explain and compare what a human can do at each stage of the life cycle, describing a human's growth and changes. (C5)

*I can measure body parts, comparing measurements whilst recognising similarities and differences between parts of my own body as well as compared to my peers. (C4 & A6)

*I can ask questions about the measurements of body parts and how these will change over time. (A1)

*Quotes taken from discussions.

*Children can correctly use the key vocabulary during lessons.

*Children recording through drawing and taking measurements using appropriate equipment.

*Photographs of children's learning.

*Written explanations of understanding or adult scribing a child's understanding depending on individual needs.

*Children asking and answering questions.

Key vocabulary

Reproduction, offspring, growth, baby, toddler, child, teenager, adult, elderly, survive, survival, water, food, air, oxygen, carbon dioxide, exercise, heartbeat, heart rate, beats per minute, hygiene, germs, disease, food groups, carbohydrates, protein, dairy, fruit, vegetables, fats, sugar,

vegetarian, vegan, muscles, skeleton, skull, organs, brain, heart, lungs, intestine, blood, liver, veins, balanced diet, digestion, nutrients, vitamins, calcium, energy.

Common misconceptions

- *Children may confuse oxygen and carbon dioxide, misunderstanding which one humans breathe in/out.
- *Children may think their heart rate returns to 'normal' (resting) immediately after stopping exercise.
- *When measuring the amount of sugar in an item of food, children may not understand the total amount is the whole product and therefore if eating part of the product you would only have part of the sugar.
- *Any amount of germs is bad.
- *Moving through the life-cycle automatically means certain things will happen e.g. an adult will always be a mum or dad, an elderly person will always be a grandparent.

Memorable first hand experiences

- *Children will carry out an investigation to measure heart rate after a variety of activities.
- *Children will be given the opportunity to observe and hold a real life organ (heart).
- *Children will measure the amount of sugar in different items of food and drink, placing the physical amount of sugar into labelled bags so they can compare.
- *Children to complete a germ investigation using glitter gel and a UV light.

Books linking to this area

- *The body book by Hannah Alice
- *The couch potato by Jory John
- *Healthy me: Keeping clean by Katie Woolley
- *Healthy me: Exercise and play by Katie Woolley
- *Give me back my bones! By Kim Norman
- *Funnybones by Janet * Allan Ahlberg
- *Aargh! There's a skeleton inside you! By Idan Ben-Barak
- *Skulls! By Blair Thornburgh
- *Who says women can't be Doctors? By Tanya Lee Stone

Opportunities for communication

- *Children to be given opportunities for communication with partners, groups and whole class to discuss as completing practical activities and also to share findings.
- *Children to discuss first-hand experience of seeing and feeling a real organ.
- *Children to share with partners and whole class what they found during investigations.
- *Through the use of Explorify.

DCINS Reasonable adjustments for pupils with SEND

<p>Communication and Interaction</p> <ul style="list-style-type: none">*Visual aids, pictures of equipment with words labelled, word mats with pictures for key words in that lesson.*Freedom to explore scientific equipment and investigate in own way.*Hands on experiences to encourage communication and interaction with others.*Pre teaching any new vocabulary.	<p>Cognition and Learning</p> <ul style="list-style-type: none">*Opportunity for lots of hands on exploration and verbally sharing thoughts and ideas.*Freedom to explore scientific equipment and processes.<ul style="list-style-type: none">*Pre teaching new vocabulary or concepts.*Activities adapted if needed for safety and ease.*Visual aids, pictures of equipment, mats with key words and pictures*Learning recorded through photos and adult quotes, children not expected to write for recording their understanding.*Using working walls to aid learning and remind of previous learning.
<p>Social, Emotional and Mental health</p> <ul style="list-style-type: none">*Awareness of individual needs, any potential triggers within the curriculum and the child's background.*Pre prepare children for any activity they could find triggering or difficult in some way.*Practical activities or experiments to be completed within a smaller group or 1:1 if needed.*If the class are sharing their learning within a large group, take the child in a smaller focus group if they struggle with social situations.*Adjustments made where needed to suit individual.	<p>Sensory and Physical</p> <ul style="list-style-type: none">*Adult support with any practical activities.*Awareness of the individual's likes or dislikes and their own reactions to sensory activities.*If a child enjoys sensory activities, then plan for this wherever possible within the lesson.

