

# Mendell Primary School

*Aspire Challenge Achieve*

## Medium Term Plan Science



<b>Year Group:</b> 5	<b>Term:</b> Summer 2	<b>Teacher:</b> Miss Keelan	<b>Subject lead:</b> Sarah Bride	<b>Overview:</b> Animals including humans	<b>Key End Points:</b> By the end of this unit children will be able to:		
<b>Common Misconceptions:</b> <b>Some children may think:</b> <ul style="list-style-type: none"> <li>a baby grows in a mother's tummy</li> <li>a baby is "made".</li> </ul>		<b>Unit key Vocabulary:</b> Puberty – the vocabulary to describe sexual characteristics Gestation, fertilisation, sperm cell, egg cell, offspring, womb, foetus.		Describe the changes as humans develop to old age. <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>Pattern-seeking</b>  <small>Identifying patterns and looking for relationships in enquiries where variables are difficult to control.</small> </div> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>Research</b>  <small>Using secondary sources of information to answer scientific questions.</small> </div>	<ul style="list-style-type: none"> <li>Describe the changes of humans from birth to death</li> <li>Name and order the different stages of human life e.g. foetus, baby, child, adolescent, adult, old age</li> <li>Describe how a baby changes physically as it grows and what it is able to do</li> <li>Explain the changes during puberty for boys</li> <li>Explain the changes during puberty for girls</li> <li>Explain some of the difficulties involved with old age and how they can be treated</li> </ul>		
<b>Links to other learning:</b>  PSHE – Changes	<b>Prior Learning:</b> Notice that animals, including humans, have offspring which grow into adults. <b>(Y2 - Animals, including humans)</b>	<b>Future Learning:</b> Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. <b>(KS3)</b>		<b>High Quality Text:</b>  <b>Scientist to study:</b> Virginia Apgar (Doctor & Medical Researcher who developed a method of evaluating the well-being of newborn babies)	<b>Risk Assessment/Health and safety</b>	<b>Teacher CPD:</b>  PLAN ASE Melissa Unit of work.  Reach Out CPD - <a href="https://www.reachoutcpd.com/">https://www.reachoutcpd.com/</a> sign up for free.	
<u>Learning Intention</u>	<u>Lesson Outline (Key Questions in colour)</u>			<u>Resources</u>	<u>Vocabulary</u>	<u>Lowest 20% Adaptations</u>	
1	<b>This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is asking questions and making observations.</b>  Complete vocabulary check as pre assessment – repeat at the end of the unit.			Prepared resources in resource file – foetal development.	<b>Cell, foetus, foetal development, gestation, womb, sperm.</b>		

ent in humans.



**Pre assessment:** ask the children to create a timeline of the human life cycle. Allow them to suggest key stages and include labels/titles for each stage. Repeat this activity at the end of the unit and encourage the children to add detailed labels or create information boxes about what they have found out about each stage.

**Prior learning:**

**How do babies change over time?**

**Do offspring always look like their parents?**

**What does the word gestation mean?**

**Big Question: How does a human foetus develop over time?**

Ask the children what they know about a baby's development in the womb. **How long do babies develop before being born?**

**What key things happen at different times?** – Children who have recently had a sibling may have more experience.

Show the children either pictures of fruit and vegetables that represent the size of a baby at monthly intervals (or use real fruit and veg if available) ask the children to order the fruit and veg and make suggestions at the stages of development in weeks after ensuring the children are clear normal pregnancies last around 40 weeks. Explain that these are the sizes of a human foetus at 4 week intervals from a 4 week old zygote to a fully formed foetus that is ready to be born. – see resource for size and fruit and veg.

Explain the following facts to the children:

- A baby is 'viable' at 24 weeks, which means that if it is born early it may still survive.
- We call babies born before 37 weeks, premature.
- Human gestation is split into 3 'trimesters', each lasting about 12 weeks or 3 months.


Show the children the following video up to 1min28sec <https://www.bbc.co.uk/teach/class-clips-video/growing/zd7rkmn>



Allow the children to explore the NHS website which explains how a foetus develops over time – ask the children to focus on 4 week intervals and read the information about baby not the mother. The children can make notes to support their task later in the lesson.

**Task:** children use their research and the pictures of foetal development in four week intervals to create a flowchart of a baby's development in the womb. Children should correctly order the images, provide a label in terms of weeks and correctly select a statement to explain the development at this stage. To support children you could provide some or all of the prepared statements for them to correctly order and match. Lowest 20% use prepared statements. Middle ability children could have some prepared and then write their own statement using the NHS website for support. Higher ability children could complete their own flow chart including own drawings if time allows. – Resources can be found on the drive. NHS slides for development

<https://www.nhs.uk/conditions/pregnancy-and-baby/pregnancy-week-by-week/>

Children may also wish to include an image to represent the size of the baby at each 4 week interval from the beginning of the lesson.

2	<p>L.I. I can recognise and explore key milestones in baby and child development</p> <p>I can interpret and understand growth charts and plot personal data as a line graph</p> 	<p><b>This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is interpreting and communicating data.</b></p> <p>Prior to today's lesson ask the children if their parents still have their baby red book which contains their growth charts as babies and ask them to bring them in.</p> <p><b>Prior learning:</b></p> <p><b>How long is the human gestation period?</b></p> <p><b>At how many weeks is a baby ready to be born?</b></p> <p><b>What do we call babies born before 37 weeks?</b></p> <p><b>Big Question: How does the length and weight of a baby change over time?</b></p> <p>Explain to the children then after we are born and as we develop into children there are certain milestones that we will meet. Milestones don't happen at an exact time but within a time frame e.g. a few months 3- 6 months. Provide the children with a set of milestone cards to order in groups. Allow them to order the milestone cards into age brackets e.g. 0-2years. Discuss any differences between groups.</p> <p>Display one of the growth charts that the children have brought in and explain the centiles and what they mean (50<sup>th</sup> centile means that for every 100 children, 50 will be shorter and 50 taller, while on the 98<sup>th</sup> centile indicates that 98 in every 100 children will be shorter and 2 will be taller) Allow the children time to compare and look for patterns in the red book charts e.g. <b>Are two people who were plotting on the same percentile for height as a baby similar sizes now?</b></p> <p>Show the children the comparison charts for boys and girls from before breastfeeding advice was introduced and after. <b>Do the children notice a pattern between the old and new growth charts?</b> Ask the children some questions to ensure they can read the line graph e.g. <b>How heavy was boy A or 1 at 20 weeks on the old and new chart?</b> Etc...</p> <p>Provide the children with the semi completed table to match the charts (boys). Ask the children to work as a group to find the missing data and explain if they think the children will be a healthy weight. E.g 'If boy 'A' was 2 Kg when he was born, then, according to both growth charts, he would probably be overweight if he was 11Kg when he was a year old.'</p> <p>Provide the children with data from the World Health Organisation and the length of babies and how they change. Ask the children to use this data to create their own line graph.</p> <p>CH: Using their line graphs, the children could work out the probable length of babies when they are 4 months, 7 months, etc</p>	<p>Milestone cards.</p> <p>Children's red books.</p> <p>Growth chart.</p> <p>Growth data.</p> <p>Length data.</p>	<p><b>Milestone, baby, toddler, child, growth, centile.</b></p>	
3	<p>L.I. I can identify and recognise changes</p>	<p><b>This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is asking questions and communicating information.</b></p> <p><b>Prior learning:</b></p> <p><b>How do our bodies change over time?</b></p>	<p>The NHS has recommended the following on their website: <a href="#">'What's happening to me?'</a></p>	<p><b>Adolescence, adolescent, puberty, teenager,</b></p>	

	<p>that happen during puberty.</p> 	<p><b>What do we call the stage of the human life cycle before birth?</b></p> <p><b>Word of the week: puberty</b> – ask the children what they already know about puberty from their Jigsaw PSHE work. Ensure the children understand the sensitivity of today’s lesson and that children should feel secure and safe to share with the class.</p> <p><b>Big Question: What happens to the human body during puberty?</b></p> <p>Provide the children with a changes list and ask them to sort them into a Venn diagram indicating changes for boys and changes for girls or both. Go through the statements together (offering explanations where appropriate) and clarify that there are physical changes that we can see and hear alongside emotional changes that might be hard to see.</p> <p>At this point you may wish to separate the girls and boys or remain together. Allow children to explore the links in the resources section and the books ‘What is happening’ to understand more about what happens to their bodies during puberty. Provide the children with the FAQ list and ask them to research the answers. If children have developed additional questions this could be added to their list for research. Teacher to ensure appropriate research methods are used e.g. fact books and NHS information.</p>	<p>(girls) and ‘What’s happening to me?’ (boys), published by Usborne Children’s Book,. These are two books about puberty that are ideal for children aged nine and above.</p> <p><a href="http://www.dkfindout.com/uk/human-body/life-cycle/adolescence/">http://www.dkfindout.com/uk/human-body/life-cycle/adolescence/</a> - Adolescence, DK ;</p>	<p><b>reproduction</b></p>	
4	<p>L.I. I can explain the changes linked to ageing and old age.</p> 	<p><b>This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is asking questions and making observations.</b></p> <p><b>Prior learning:</b>  <b>What does the word puberty mean?</b>  <b>Name some of the changes our bodies go through during puberty.</b>  <b>What are the stages of the human lifecycle that we have discussed so far?</b></p> <p><b>Big Question: What happens to adults as they become older?</b></p> <p>Watch the human life cycle: <a href="https://www.bbc.co.uk/bitesize/topics/z7x78xs/articles/z2msv4j">https://www.bbc.co.uk/bitesize/topics/z7x78xs/articles/z2msv4j</a> explain that today we will be focusing on the last stage – old age – <b>what things might we expect to happen at this stage of our life cycle?</b></p> <p>Show the children a range of famous people aging. – <b>What do the children notice? What facial features are changing? Can they describe what changes are happening?</b> – e.g. wrinkles, grey hair, larger nose, sagging skin etc...</p> <p>Share some of the internal changes that happen as we get older such as bone weakness and muscle deterioration. Share the sample studies and ask the children to spot any patterns. The studies show the deterioration of bone mass and cognitive abilities throughout our life time in men and women.</p> <p><b>Task:</b> Provide the children with the aging challenge cards and ask them to complete research to find out the answer. Ask them to use this research to create a poster to explain what we can expect as we get older.</p>	<p>IPads  Challenge cards  Famous faces resource  Sample studies.</p>	<p><b>Aging, old age, bone mass, deterioration, cognitive ability, elderly, adult, growth, change, death</b></p>	

	<p>Ask the children to sort the statements into true and stereotypes about old age. Encourage discussion within their groups and discuss any tricky statements as a class.</p> <p><b>CH:</b> Explorify – what if? What if the lifespan of a human was 200 years? In pairs, discuss what might be a Plus, Minus and Interesting way to think about the question. They could think about: <b>What are some of the changes as humans develop to old age? What further changes might occur if humans lived to the age of 200? What impact would a rising population have on the environment?</b> Ask the children to share their partner's ideas then encourage a broader discussion as a class, remember there is no wrong or right answer!</p> <p><b>Post assessment:</b> ask the children to create a timeline of the human life cycle again. Encourage the children to add detailed labels or create information boxes about what they have found out about each stage.</p> <p>Repeat vocabulary assessment.</p>			
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