

YEAR 5 UNIT 5: Growing up and growing old (Animals including Humans)

Enquiry Question: How do humans change?

Related units: Year 2 Unit 1: Healthy Me- How do you keep healthy? Year 3 Unit 2: Food and our bodies- Why is a balanced diet important? Year 5 Unit 3: Circle of life- How do life cycles vary? Year 5 Unit 4: Growing up, growing old – How do humans change? Year 6 unit 2: How can we stay healthy?

Unit overview

National Curriculum links Year 5: Animals including humans.

Children will describe the changes as humans develop to old age. They will draw a timeline to indicate stages in the growth and development of humans. Children will learn about the changes experienced in puberty. They will work scientifically by researching the gestation periods of other animals and comparing them with humans. Children will be finding out and recording the length and mass of a baby as it grows. Children already know that animals have offspring, which grow into adults (Year 5) and the life cycles of different animals, including mammals. Children already know that we grow and get bigger as we get older; that our bodies change as we get older and have learnt about skeletons and joints in Year 3.

Assessment

1. Describe how various mammals have different gestation periods
2. Describe 4 changes that happen as we reach old age
3. Describe 4 problems that old people face
4. Explain 2 reasons why humans are living longer

Scientific vocabulary

- pregnant
- gestation
- mammals
- pregnancy
- offspring
- life cycle
- embryo/foetus
- disposable
- absorbent
- puberty
- hormones
- acne
- glands
- arthritis
- life expectancy
- adolescence
- menstruation
- aging
- testosterone
- oestrogen
- sebum

Working Scientifically

1. **Cradle to grave:** Plan different types of scientific enquiry to answer questions – research using secondary sources
2. **Baby boom:** Record data, report and present findings.
3. **Growing up:** Plan different types of scientific enquiry – survey and record data using graphs.
4. **Terrible teenagers:** Plan different types of scientific enquiry to answer questions – research using secondary sources
5. **Act your age:** Plan different types of scientific enquiry to answer questions – research using secondary sources
6. **Live forever:** Plan different types of scientific enquiry to answer questions – research using secondary sources

Cross-curricular links

English:

- Plan and write up an investigation

Maths:

- Create and interrogate a bar chart
- Create a timeline to show changes over time

Teacher knowledge

Humans, like all mammals, give birth to live young. The fertilised egg stays inside the female and develops in the womb. The baby is linked to the mother via a placenta which gives the baby nutrients and oxygen and takes away waste products. The amount of time it takes for a baby to develop is called the gestation period. In humans this is roughly 9 months (266 days). Smaller animals normally have a shorter gestation period than larger animals. For example, a mouse's gestation period is around 20 days and an African elephant's is 645 days.

Human babies are highly dependent on their parents for a long time after birth. They start to walk at around 1 year old and learn to talk at 18 months old. They grow rapidly. By the age of five a child can walk, talk and feed itself, but is still very dependent on its parents. The human life span can be split into a number of stages: infancy, childhood, adolescence, young adulthood, adulthood and old age. The actual length of these stages varies across different cultures and time periods.

Puberty is the time when the body matures from that of a child to that of an adult. The body prepares itself for being able to produce children of its own. Puberty starts at different times, but usually around 8 in girls and 9/10 in boys. Puberty is triggered by hormones in the body – chemical messengers which travel around it. In boys, the testes develop and begin to produce sperm as well as the hormone testosterone. Testosterone causes boys to grow and become more muscular, their voices to 'break', and hair to start growing on their chest and face. In girls, the ovaries develop and begin to release the hormone oestrogen, as well as trigger the maturation and release of an egg once a month as part of the menstrual cycle. Oestrogen causes girls to develop breasts and their hips to widen. In both boys and girls, other hormones cause pubic and underarm hair to begin to grow. And don't forget spots, which are common for most teenagers. Acne is caused by glands in the skin that produce a natural oil called sebum. Puberty hormones make these glands produce extra sebum, which can clog the pores and cause spots. Remember to take care when discussing the changes that happen during puberty. Check with your school's PSHE/SMSC/SEAL coordinator for additional guidance.

Aging is the accumulation of changes in a person over time. Our bodies become less able to deal with stresses and disease, and our cells gradually become less able to replicate. Commonly, our hair will become grey or white and our skin will lose its elasticity and become wrinkled. Older people's bodies become more susceptible to diseases such as osteoporosis (weak bones) or arthritis (stiff/swollen joints). Eyesight and hearing often deteriorate too. The upper range of the sound frequencies that we can hear gradually decreases from the age of 18 onwards. This means that children will be able to hear higher sounds than even young adults, and the older you get, the lower the upper limit will become. Due to improved healthcare more people are reaching old age. In Roman times, people who survived childhood could expect to live to about 50. But now we can expect to live much longer than that – although this is very dependent on economic circumstances. Here in the UK, the difference in life expectancy in the wealthiest areas is 7 years longer than in the poorest. More people living longer has an impact financially since they need to save enough money when they work to pay for what they will need when they are too old to work. More people living longer will affect the population size, with greater demands on resources such as housing, food and water.

Did you know?

- The UK produces 2500 million dirty nappies every year. The average baby uses 5,000 nappies from birth to being toilet trained.
- Elephants are pregnant for over 21 months. That's a year longer than humans! A hamster, however, is pregnant for just 16 to 20 days.
- The first known use of the word 'teenage' wasn't until the early 1940s.
- Babies have 30,000 taste buds, adults only 10,000. The reason some children do not like certain vegetables is that they probably taste more bitter to them than they do to adults.
- Your eyes are always the same size from birth, but your nose and ears never stop growing, even when you are very old.

Misconceptions:

- Some children might already know about pregnancy, especially if they have baby brothers or sisters, but they may not know exactly what happens.
- Children have general misconceptions about puberty and their own ideas on what happens based on playground rumours!
- General misconceptions about what it's like to be old, based on limited observations of their elderly relatives or from the media.
- Everyone over about 21 is classed as 'old'.

Resources

A timeline of human development from birth to five years old: www.nhs.uk/Tools/Pages/birthtofive.aspx#close

A collection of images and videos about pregnancy: www.babycenter.com/video/pregnancy

Ageing & independent living: www.ageuk.org.uk/products/mobility-and-independence-at-home/