Unit 18

Knowledge

What should already be in their long-term memory?

- Animals including humans have offspring which grow into adults
- Exercise, eating the right amount of food and hygiene are important to human health
- Humans have skeletons to move and protect organs
  (refer to unit 5, 8)

- Know a range of every day materials and their properties (transparency, magnetism and conductivity)
- Materials can be solid, liquid or gas
- State can be changed through heating and cooling
- Evaporation and condensation are processes and play a part in the water cycle
  (refer to units 10, 13, 15, 16)

Key vocabulary:

Talk like a scientist (human body):
Tier 3:
fertilisation, prenatal, gestation, reproduce, asexual reproduction, sexual reproduction, life cycle, adolescence, puberty, menstruation, adulthood, life expectancy.

Talk like a scientist (electricity):
Tier 2:
process, properties
Tier 3:
circuit, condensation, conductor, dissolves, electricity, evaporation, filtering, flexible, gas, insoluble, insulator, irreversible, liquid, magnetic, melting, particles, permeable, rate, resistance, reversible, solid, soluble, solution, state, temperature, thermal, transparent, variable, water cycle.

Key texts:

What should they know by the end of the unit?

Science

- A foetus is an unborn animal or human being in the very early stages of development
- A newborn is a baby that has just been born.
- Infancy is a period of rapid change. Many toddlers learn to walk and talk at this stage.
- Children learn new things as they grow. They become more independent.
- Adolescence is when the body starts to change and prepare itself for adulthood.
- Hormonal changes take place over a few years. This is also known as puberty.
- Some changes include growth in height, more sweat, hair growth on arms and legs, under the armpits and on genitals, and growth in parts of the body such as male genitals and breasts.
- Females begin to menstruate.
- early adulthood - this is when humans are usually at their fittest and strongest.
- middle adulthood - changes such as hair loss may happen. There are also some hormonal changes again and the ability to reproduce decreases.
- late adulthood - there is a decline in fitness and strength.
  ? How does age affect a human's reaction time?
- These biological changes are irreversible
- Human life cycles are different to other animals: gestation period, metamorphosis, life span
  (bird, amphibian, insect)
  ? Compare and contrast the life cycles of different primates.
  ? How does a bird's embryo develop over time?
  ? **Why do we remember Jane Goodall?**

- In science materials can also go through changes
- These are known as physical changes and can be reversible and irreversible
- Reversible changes can return to their original parts
- Irreversible changes produce a new material
- When the particles of a solid break down in the particles of a liquid, this is called dissolving; salt mixed with water.
- The result is a solution; salt mixed with water becomes a solution
- Materials that dissolve are soluble.
- Materials that do not dissolve are insoluble this will produce a mixture: sand and water
  ? **Which of these materials are soluble, insoluble?**
  ? What type of sugar dissolves the fastest?
  ? How does temperature affect how much solute we can dissolve?
- Some materials can be separated after they have been mixed based on their properties - this is called a reversible change.
- Some methods of separation include the use of a magnet, a filter (for insoluble materials), a sieve (based on the size of the solids) and evaporation.
  ? How does a container of saltwater change over time?
- When a mixture cannot be separated back into the original components, this is called an irreversible change. Examples of this include when materials burn or mixing bicarbonate of soda with vinegar.

Enrichment

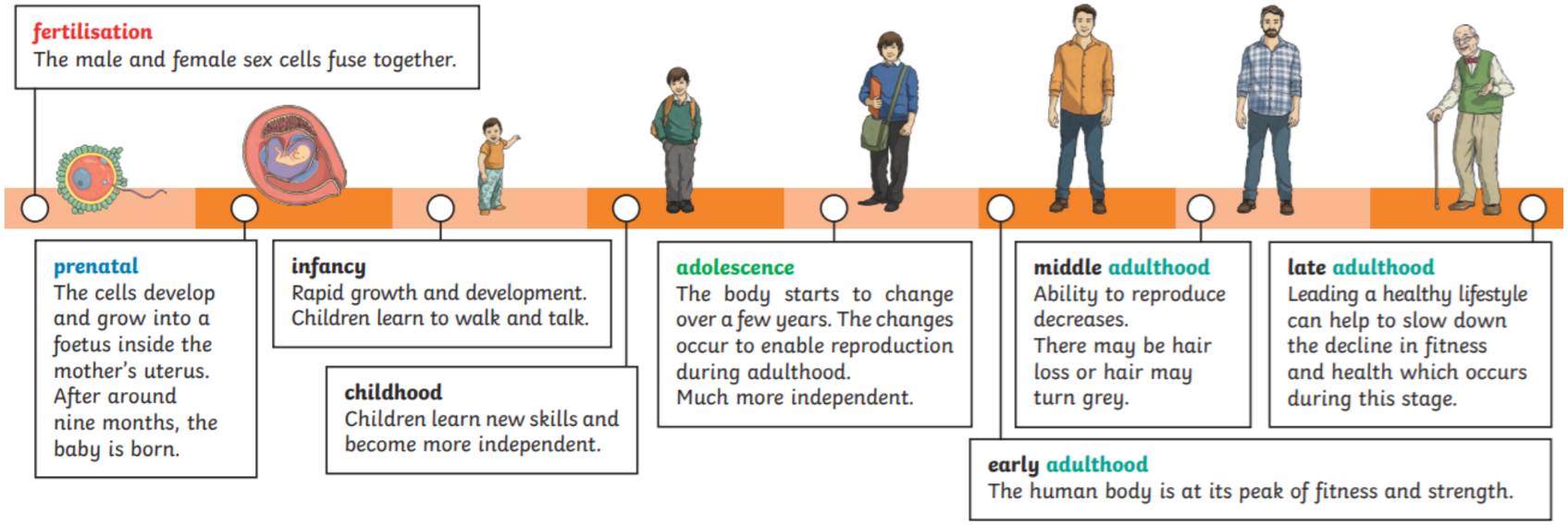
Character education:
I have helped to care for wildlife in my school grounds

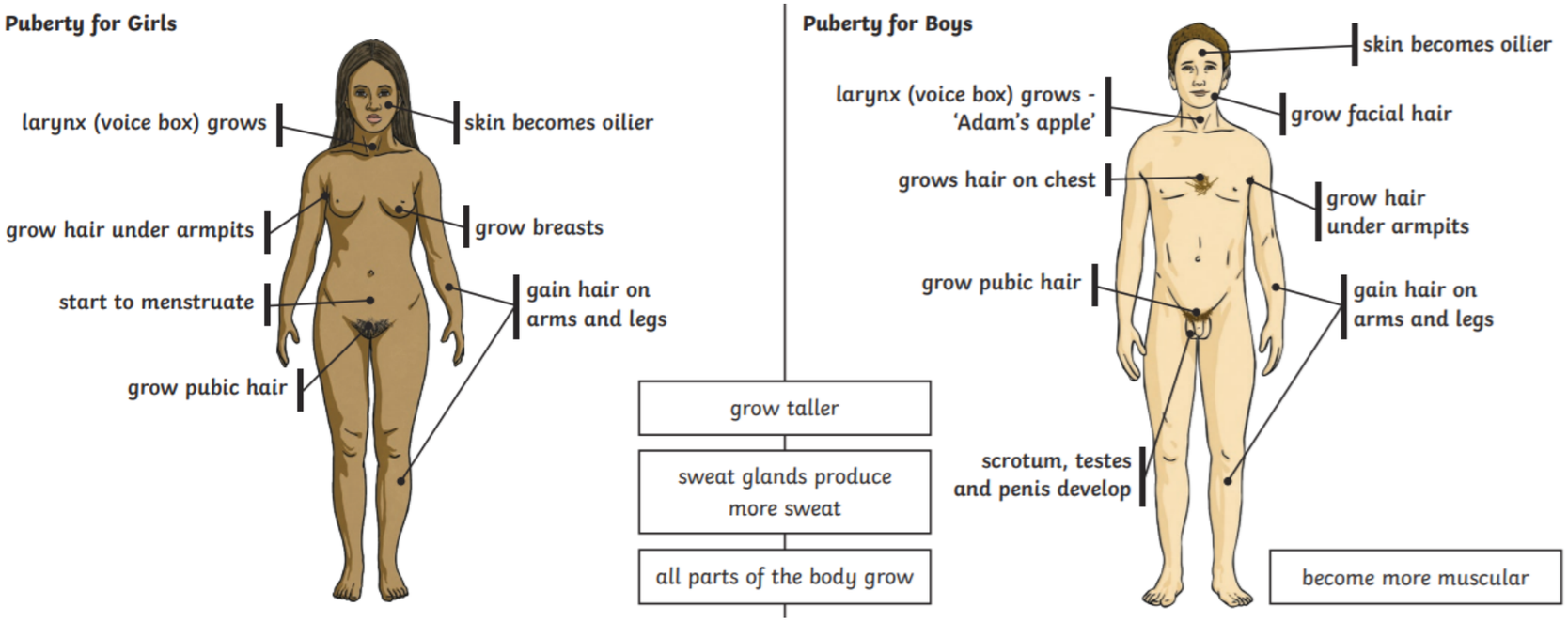
ICT:
https://www.mrpict.com/life-cycles.html
https://www.mrpict.com/changing-materials.html

End of unit knowledge transfer:
A visual representation of the stages of human development using a range of resources. Sharing their project with year 4.

Opportunities for cross curricular maths:
Recognising tenths and hundredths and comparing decimal numbers when measuring reaction times
Recognising tenths and hundredths and comparing decimal numbers when measuring dissolving times

Appendix 1


fertilisation
The male and female sex cells fuse together.
prenatal
The cells develop and grow into a foetus inside the mother's uterus. After around nine months, the baby is born.
infancy
Rapid growth and development. Children learn to walk and talk.
childhood
Children learn new skills and become more independent.
adolescence
The body starts to change over a few years. The changes occur to enable reproduction during adulthood. Much more independent.
early adulthood
The human body is at its peak of fitness and strength.
middle adulthood
Ability to reproduce decreases. There may be hair loss or hair may turn grey.
late adulthood
Leading a healthy lifestyle can help to slow down the decline in fitness and health which occurs during this stage.


Puberty for Girls
larynx (voice box) grows
skin becomes oilier
grow hair under armpits
grow breasts
start to menstruate
gain hair on arms and legs
grow pubic hair
Puberty for Boys
skin becomes oilier
larynx (voice box) grows - 'Adam's apple'
grow facial hair
grows hair on chest
grow hair under armpits
grow pubic hair
gain hair on arms and legs
scrotum, testes and penis develop
become more muscular
grow taller
sweat glands produce more sweat
all parts of the body grow