# Lesson 1 – Reproduction

Key points to learn:

1. Reproduction is how plants and animals make their young.

2. Humans are mammals and we reproduce the same way as other mammals.

3. Animals can have life cycles that can be short (frog) or long (human) and these have differences.

4. Zoos have an important role in breeding endangered animals to prevent animals becoming extinct.

Study and Question book page 48

# Lesson 2 – Reproduction in animals

Key points to learn:

1. Reproduction in humans involves cells called sex cells called gametes. In humans these are the sperm and egg cells.

2. Gametes have many special features that allow them to do their job called adaptations.

3. Sperm have a tail for swimming, a streamlined body and chemicals in their heads. Eggs have a jelly coat and a large food store.

4. Gametes contain only half the genetic information of other body cells.

Study and Question book page 48

# Lesson 3 – Reproductive systems in animals

Key points to learn:

1. Humans have reproductive systems that have a specific structure and function. They allow the gametes to be made so fertilisation can happen after sexual intercourse.

2. Fertilisation happens when a sperm and egg meet (fuse) and this normally happens in one of the fallopian tubes.

3. Gestation is the time it takes from the egg being fertilised by the sperm to the baby being born. In humans this lasts 39 weeks.

Study and Question book page 51.

# Lesson 4 – Reproduction – Having a baby.

Key points to learn:

1. During sexual intercourse, the man's penis releases millions of sperm into the vagina of the woman.

2. Fertilisation happens when the nuclei of the egg cell and the sperm cell join and the fertilised egg becomes a zygote. This happens in one of the fallopian tubes.

3. 24 hours after fertilisation the fertilised egg divides into two. After about 4 days the egg has divided into 32 cells. This is now called an embryo.

4. After one week following fertilisation, the embryo starts to embed (implant) itself into the wall of the uterus and the placenta begins to develop.

5. Twins are formed when the zygote divides into two identical cells and forms two embryos and becomes two separate but identical babies.

Study and Question book page 51-52.

# Lesson 5 – Gestation: how the embryo grows into a baby and how a mother's lifestyle can affect the baby.

Key points to learn:

1. In the pregnant woman, her uterus supports the baby as it develops over the pregnancy. The baby is surrounded by a protective fluid called amniotic fluid. The placenta attaches to the uterus and to the baby via the umbilical cord. The placenta allows the foetus's and mother's blood to come very close together to allow food and oxygen to get to baby and carbon dioxide and other waste to pass from the foetus to the mother.
2. Many harmful substances can pass across the placenta from the mother to the developing foetus and affect it.
3. Drinking alcohol during pregnancy can lead to babies with a low birth weight, and damage to their brain, heart, liver and kidneys.
4. Smoking during pregnancy reduces the amount of oxygen that gets to the foetus which may cause a low birth weight. Smoking may also cause a premature birth when the foetus has not fully developed.

Study and Question book page 52 and 53.

# Lesson 6 – Health of the foetus.

Key points to learn:

1. Pregnant mothers need to look after their own health to ensure the developing foetus is developing normally.
2. Ultrasounds can be used to monitor the health of the developing foetus.
3. Some babies can be born premature and these need to be cared for very carefully.

# Lesson 7 – Giving Birth.

Key points to learn:

1. When a baby is born, it passes out of the uterus through the cervix and the vagina. The walls of the uterus are muscular and contract during birth to push the baby out. The cervix and vagina expand to allow the baby to pass through. After the baby has been born, the placenta passes out of the uterus through the vagina.

2. When a woman is pregnant, she must consider her lifestyle carefully as substances she takes will be passed to the developing baby (foetus) across the placenta.

Study and Question book page 52.

# Lesson 8 – Menstrual Cycle.

Key points to learn:

1. The menstrual cycle involves the body preparing the uterus in case it receives a fertilised egg.
2. If this doesn't happen, then the egg and uterus lining break down and are lost from the body through the vagina over a period of three to four days.
3. The cycle has 4 main stages that occur within the cycle:
4. Stage 1 – Bleeding starts at day 1 the 'period' Stage 2 On day 4 the lining of the uterus builds up again Stage 3 day 14 an egg is released from the ovaries and this is the time when she is most likely to become pregnant. Stage 4 day 28 The wall stays thick but will break down and pass out from the vagina and the whole cycle starts over again.

Study and Question book page 48

# Lesson 9 – Reproductive systems in plants

Key points to learn:

1. Plants have flowers that contain the reproductive organs that have a specific structure and function. They allow the gametes to be made so fertilisation can happen. The male parts are called the stamens that contain the anther and the filament. The female parts are called the carpels that contains the stigma, style and ovary.
2. Seeds are the offspring of plants through sexual reproduction.
3. Pollen and ova are the plant's gametes and are involved in fertilisation. These gametes contain only half the genetic information of other cells.

Study and Question book page 65.

# Lesson 10 – Pollination.

Key points to learn:

1. The process of pollination involves getting the pollen known as pollen grains to the stigma. This means getting the pollen to travel to the stigma from a stamen.
2. This can happen during self-pollination when pollen is transferred from the stamen to the stigma on the same plant.
3. Cross – pollination can also happen when pollen is transferred from the stamen of one plant to the stigma of a different plant. This can happen by wind or by insect pollination.
4. In wind pollination, pollen is blown off one plant and onto another.
5. In insect pollination, insects are attracted to nectar produced by the plant and insects transfer the pollen between flowers as they go.

# Lesson 11 – Seed and fruit formation and dispersal.

Key points to learn:

1. Seeds are formed from ovules following fertilisation. Fertilisation involves the nuclei from the pollen grain and the ovum joining inside the ovule.
2. A seed contains a dormant (inactive) embryo plant.
3. The embryo has a food store which is used when conditions are right to grow or germinate.
4. The ovary grows into a fruit around the seed. Fruits can tempt animals to eat them and so scatter their seeds in their faeces.
5. Seeds can be scattered by a process called dispersal. Seeds can be scattered by the wind, by animals, by a fruit or pod exploding or by a technique called 'drop and roll'.

Study and Question book page 65 and 66.

# Lesson 12 – Factors that affect the dispersal of seeds. Planning an investigation. (Quantitative investigation)

Key points to learn:

1. Independent variable – Variable deliberately changed.
2. Dependent variable - the outcome/results/thing to measure from my results.
3. Control variables – these can affect our results so we need to control them as best as we can.
4. What are the factors that can affect the dispersal of seeds? We can investigate different factors - Mass of seed/size of wings/height it drops from.