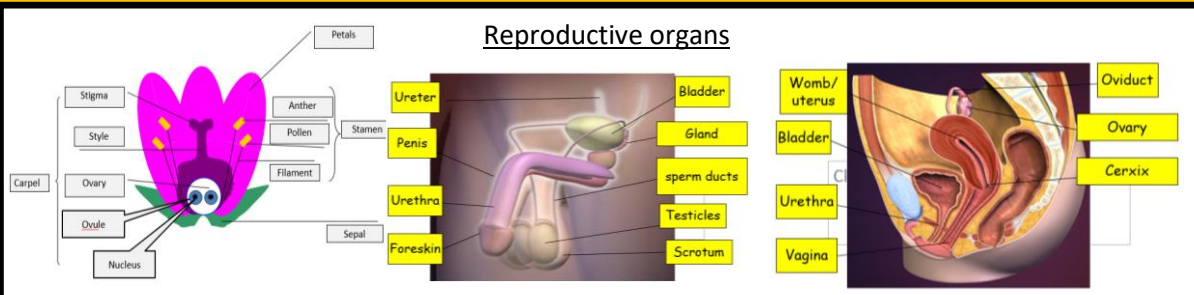


# Science Year 7 Knowledge Organiser: B2 Reproduction and Variation

**Overview of topic:** Describe reproduction in mammals (humans as an example) including fertilisation, gestation and birth. Describe and explain the structure and function of the Human and plant reproductive systems. Explain how and why organisms of the same and different species are varied.

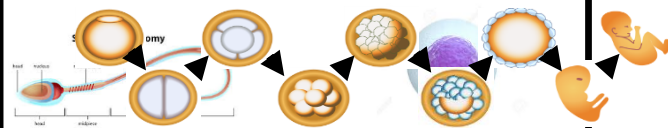
## Key content/ ideas/ concepts



## Keywords/ Glossary

- Adolescence**- The period of time when a child changes into an adult.
- Puberty**- The physical changes that take place during adolescence.
- Testes**- Organ where sperm and testosterone are produced.
- Urethra**- Tube that carries urine or sperm out of the body
- Sperm duct**- Tube that carries sperm from the testes to the penis.
- Ovary**- Organ that contains eggs
- Oviduct**- Carry an egg from the ovary to the uterus and is where fertilisation occurs.
- Cervix**- The ring of muscle at the entrance to the uterus. It keeps the baby in place while the woman is pregnant.
- Uterus**- Where a baby develops in a pregnant woman.
- Vagina**- Where the penis enters the female's body and sperm is received.
- Anther**-The male part of a flower that produces pollen.
- Petals**- A brightly coloured part of the flower that attracts insects.
- Pollen**- Contains the plant male sex cells found on stamens.
- Stigma**-The female part of the flower that is sticky to catch grains of pollen.
- Style** – The female part of the flower that holds up the stigma.

### Gametes (Sex Cells)



Sperm has a long **tail** to help it swim towards the egg. It has a **acrosome** to help break into the egg. It has a **nucleus** with half the amount of **DNA**.

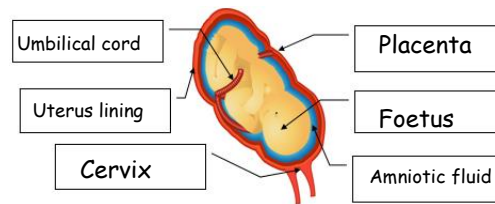
The Egg has a **food** source allowing the embryo to develop. It has a **nucleus** with half the amount of **DNA**.

### Fertilisation:

During the process of fertilisation the egg and the sperm come together and **fuse**. The genetic material of each cell **combines** to create a cell with a full set of chromosomes.



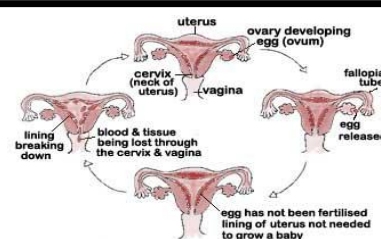
### Developing in the Uterus



The fertilised egg begins to divide until it forms a fluid filled space. The egg at this stage is known as an embryo and is able to implant into the lining of the uterus. At the site of implantation a placenta forms along with an umbilical cord, these together provide the growing Foetus with everything it needs to develop, such as oxygen and food. These products move across the placenta by diffusion.

### The Menstrual Cycle:

During puberty a girl will start her periods, also known as menstruation. Around once a month, blood from the lining of the uterus leaves the body through the vagina. Each period lasts between 3-7 days. The female reproductive system works in a sequence called the menstrual cycle. This lasts around 28 days.



### Wider reading:

[http://www.bbc.co.uk/bitesize/ks3/science/organisms\\_behaviour\\_health/reproduction/revision/1/](http://www.bbc.co.uk/bitesize/ks3/science/organisms_behaviour_health/reproduction/revision/1/)

Science Year 7 Knowledge Organiser: B2 Reproduction and Variation

| Know it                                                     | Grasp it                                                                      | Think it                                                                                      |
|-------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1. Write a definition of adolescence.                       | 1. Describe what fertilisation is.                                            | 1. Name the male sex hormone and explain how it causes changes in a male during puberty.      |
| 2. Write a definition of puberty.                           | 2. Describe what a zygote is.                                                 | 2. Name the four hormones involved in female fertility.                                       |
| 3. Write a definition of a hormone.                         | 3. Describe what implantation is.                                             | 3. State from which organ(s) these hormones are secreted.                                     |
| 4. Describe 5 changes that occur to males during puberty.   | 4. State the length of pregnancy in humans                                    | 4. Explain how these hormones interact to control the menstrual cycle.                        |
| 5. Describe 5 changes that occur to females during puberty. | 5. Describe how the developing baby obtains food and oxygen during pregnancy. | 5. Following fertilisation explain how the cells divide during the development of the foetus. |
| 6. Describe what gametes are.                               | 6. Describe what the menstrual cycle is.                                      | 6. Describe what IVF is.                                                                      |
| 7. Describe how sperm cells are adapted for their function. | 7. Describe the stages in the menstrual cycle.                                | 7. Explain how IVF can be used to help people with fertility issues.                          |
| 8. Describe how egg cells are adapted for their function.   | 8. Compare, using examples, hormonal and non-hormonal forms of contraception. | 8. Explain how the contraceptive pill works to prevent pregnancy.                             |
| 9. Describe the function of the testes.                     | 9. Compare insect pollinated, and wind pollinated plants.                     | 9. Evaluate the use of hormonal and non-hormonal methods of contraception.                    |
| 10. Describe the function of the ovaries.                   | 10. Describe four different forms of seed dispersal.                          | 10. Explain how the lifestyle of a pregnant lady can affect the health of the baby.           |
| Total score                                                 | Total score                                                                   | Total score                                                                                   |

