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The human life cycle

Introduction

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The first stage ('trimester')

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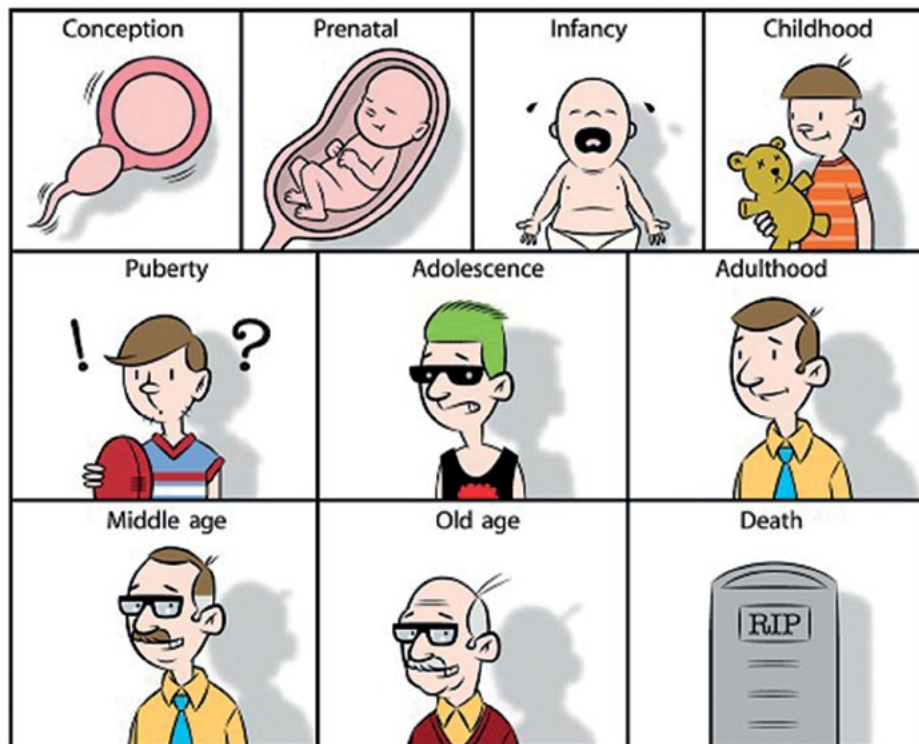
The third stage ('trimester')

Introduction

Throughout our lives we go through many different stages—an incredible amount of change happens to our bodies and minds from the moment we are conceived through to old age and death.

The stages of the human life cycle include:

- **Conception**—a sperm and an egg from our parents join together and an embryo is formed.
- **Prenatal**—the embryo develops inside the mother’s womb and becomes a foetus. We are born around nine months later.
- **Infancy**—from 0 to 2 years we are babies dependent on our parents for full-time care.
- **Childhood**—from 2 to 11 years we continue to develop dramatically as we become more self-aware and independent. Our language and thinking improves. We become more social and form friendships.
- **Puberty**—from 12 to 17 years we experience the onset of puberty, when hormones cause our bodies to change in specific physical ways.
- **Adolescence**—also from 12-17 years we develop socially and emotionally. Our personal identity and the way we see ourselves in the world begins to form as we prepare for adulthood.
- **Adulthood**—from 18 onwards we have independence and responsibilities. Many people form long-term relationships and start families. From 40 onwards we are middle-aged, and may begin to notice our bodies starting to deteriorate.
- **Old age**—from 70 onwards most people are retired. A fair amount of effort is required to maintain health and ward off the physical effects of becoming old.
- **Death**—of course death can happen due to accident or illness at any time, but without these events once we get too old our bodies can no longer function properly and we die.





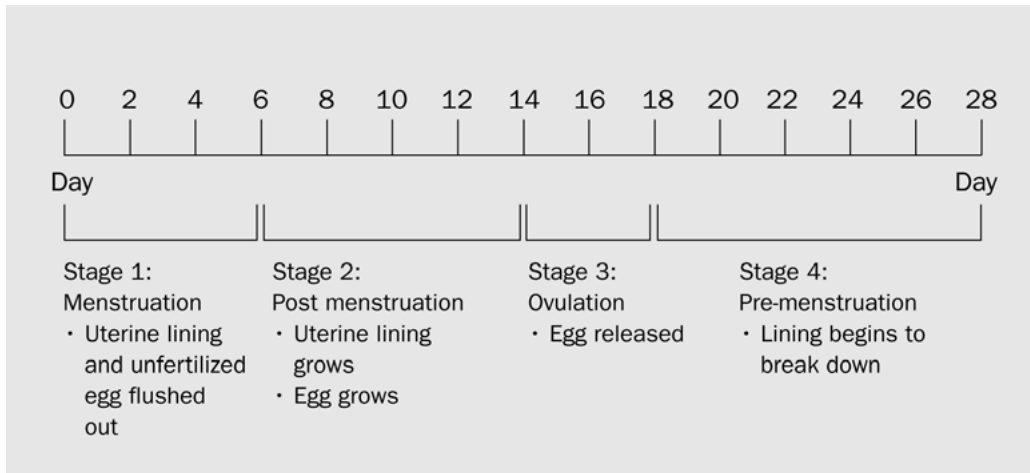
ACTIVITY *Stages of life*

- 1 Write down what you think is happening in the picture provided. You can use the following descriptions to help you.

Conception	Prenatal	Infancy	Childhood
Puberty	Adolescence	Adulthood	
Middle age	Old age	Death	

How a new life begins

The possibility for new life begins with menstruation. Menstruation is when the lining of the uterus thickens to prepare for a fertilised egg to be implanted. If not fertilised, the egg and the lining (which is mostly blood) are expelled from the uterus. This 'flushing out' may take around one week and usually occurs every 28 days. It is known as a 'period'. Adolescent girls begin having periods during puberty.



The menstrual cycle

A new life begins when a sperm has fertilised an egg and the female is pregnant. The fertilised egg splits into several cells, which form an **embryo**. From three months on, the embryo becomes known as a **foetus**.

A **placenta** also grows in the uterus—this is connected by the umbilical cord to the tummy of the foetus. It provides the foetus with nutrients from the food that the female eats and oxygen from the air that she breathes. Your bellybutton is where the **umbilical cord** was once connected to you when you were inside your mother's uterus.

After around nine months in the womb, the foetus is a fully formed (yet very small!) human being, ready to be born. Usually, the mother will go into **labour** and push the baby out to join the world.

ACTIVITY *Fill in the gaps*

1 Use the words provided to complete the following statements.

umbilical cord **embryo** **uterus** **foetus**
sperm **ovum** **semen**

- The mixture of sperm and liquid that is ejaculated by the male is called _____.
- The male sex cell is called the _____.
- The female sex cell is the _____.



- When fertilised, the egg is transferred to the _____, where it develops into a baby.
- Early on in pregnancy, the developing baby inside the uterus is called an _____. After three months it is referred to as a _____.
- Your bellybutton is where the _____ _____ was once joined to you.

2 Use the words provided to explain the path the egg in a female takes each month.

ovaries **fallopian tube** **fertilised**
uterus **egg** **menstruation**

- Each month, the _____ release an _____.
- The ovum passes through the _____ into the _____.
- If it is not _____ when it reaches the uterus, the ovum is removed from the body during _____.

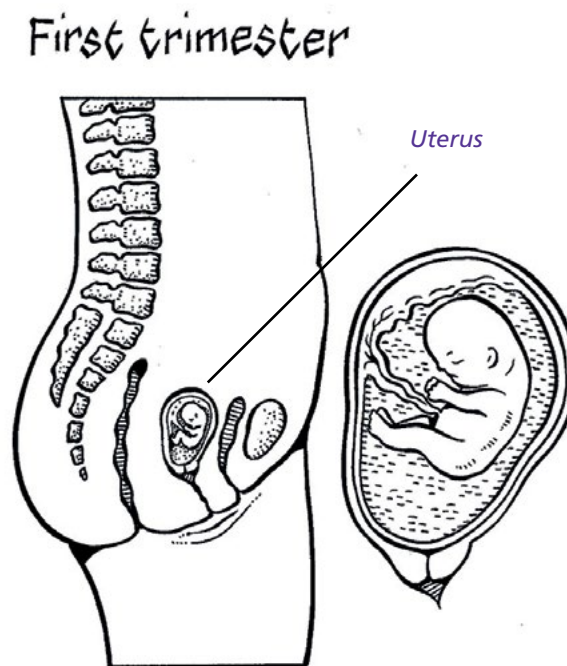
3 Make a list of questions you have about how new life begins in the human body. Ask your teacher, parents or guardian your questions and write the answers next to your questions below.

Stages of development

The first stage ('trimester')

When a new life is conceived (the action of conception), a woman becomes pregnant. A 'pregnancy' lasts for nine months, during which a tiny embryo grows into a foetus ready to be born. During the first stage of pregnancy, some women experience fatigue, light-headedness, nausea, and increased frequency of urination.

The first stage of growth is a period of rapid development for the embryo/foetus and often of profound physical and emotional changes for the expectant mother.



The embryo in the weeks after conception

During the first trimester, the tiny embryo begins to develop its nervous system and internal organs. The nervous system allows us to see, touch and smell, as well as managing our internal organs. During this stage, the heart starts to beat and the embryo starts to develop bone cells. By the end of the first trimester, the embryo has transformed from a group of cells into a foetus about 10 centimetres long!



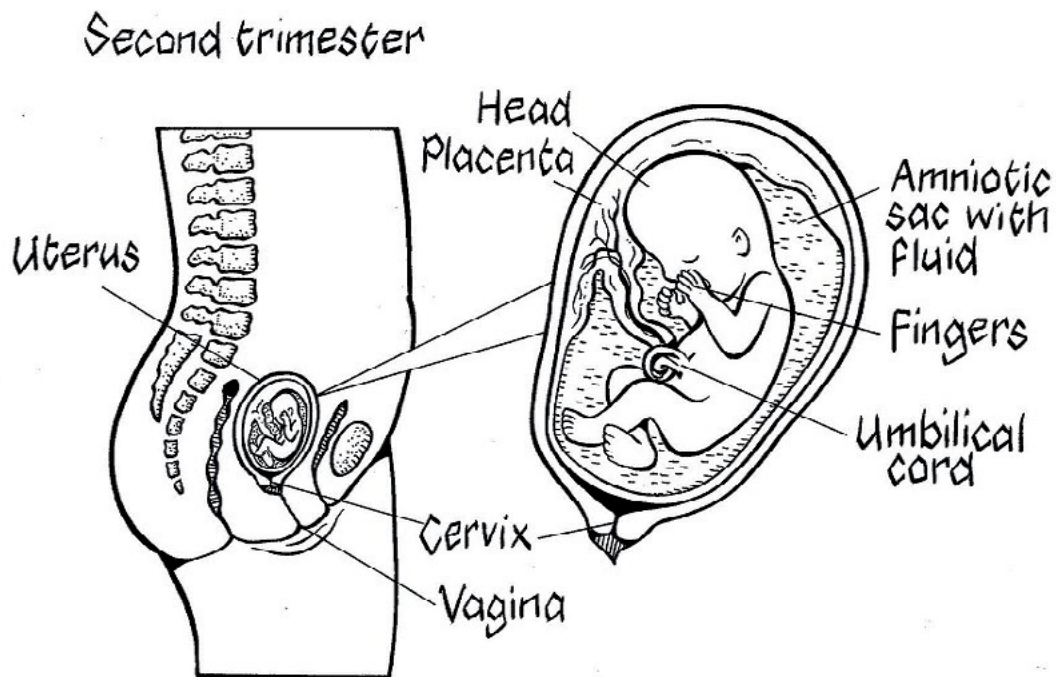
The second stage ('trimester')

During the second trimester, the initial discomforts of pregnancy often diminish and are replaced with a feeling of wellbeing. The maturing foetus is not yet active or heavy enough to cause discomfort.

Most women put on weight and start to develop the pronounced bump of pregnancy; some develop a dark line down the centre of their stomach called the linea nigra.

From the beginning of this trimester, the foetus can move around, sleep and wake, pass urine and hear. By the end it has fingernails and hair, and is developing lungs and a heartbeat that is audible through a stethoscope. It now weighs around half a kilogram and is 20 to 30 centimetres long!

By the middle of the second trimester, the skin gets quite tight over the abdomen as the uterus expands. The mother will begin to feel the foetus moving. The sixth month is often when mothers gain the most weight, and by the end of the trimester the foetus will be kicking and moving around noticeably.



The foetus in the second stage or trimester of pregnancy

ACTIVITY *Understanding pregnancy*

- 1 As women enter the second trimester and gain weight, they find they can no longer wear their normal clothes. What sort of clothes would be more suitable?

The third stage ('trimester')

Mothers are now carrying a large weight around. As well as the baby in their womb, they are carrying up to a litre of amniotic fluid and the placenta. They may experience fatigue, back pain, insomnia, cramps and false (or Braxton Hicks) contractions.



The foetus gains weight rapidly during the third trimester; its bones harden, it begins to open and close its eyes and may even suck its thumb! Body parts, such as feet and hands, can be seen pushing against the abdomen, but movements become less frequent as the baby has less room to move and begins to settle into a head-down position ready for birth. The foetus is alert and can interpret sounds and movements from the outside world.



ACTIVITY *Life cycle overview*

- 1 Draw the stages of life listed in the following table. Label each drawing to show physical, mental and emotional changes.

Life cycle stage	Physical, mental and emotional changes
Conception 0-1 week	
Prenatal 2-38 weeks	



Life cycle stage	Physical, mental and emotional changes
Infancy 0-2 years	
Childhood 2-11 years	



Life cycle stage	Physical, mental and emotional changes
Puberty/Adolescence 12-17 years	
Adulthood 18-39 years	



Life cycle stage	Physical, mental and emotional changes
Middle age 40-69 years	
Old age 70 years onwards	
Death	