

# Abraham Darby Academy



## KS3 Biology | Growing up, gestation, birth

Knowledge Series | Study Booklet | 2017





## Key terms

- **Gamete:** mature (male) sperm cells and (female) egg cells
- **Fertilisation:** fusing of gametes and their nuclei
- **Puberty:** the period during which adolescents reach sexual maturity and become capable of reproduction.
- **Adolescence:** the period following the onset of puberty during which a young person develops from a child into an adult.
- **Foetus:** an unborn or unhatched offspring of a mammal, in particular, an unborn human more than eight weeks after conception.
- **Gestation period:** is the time in which a foetus develops, beginning with fertilization and ending at birth. Typically nine months for humans.
- **Hormones:** a chemical substance produced in an endocrine gland and transported in the blood to a certain tissue, on which it exerts a specific effect
- **Testosterone:** the sex hormone, secreted by the testes, that stimulates the development of male sex organs, secondary sexual traits, and sperm.
- **Oestrogen:** any of several steroid hormones, that are secreted chiefly by the ovaries and placenta, stimulate changes in the female reproductive organs during the oestrous cycle, and promote development of female secondary sexual characteristics.
- **Menstrual cycle:** The recurring cycle of physiological changes in the uterus, ovaries, and other sexual structures that occur from the beginning of one menstrual period through to the beginning of the next.
- **Ovulation:** to produce and discharge eggs from an ovary or ovarian follicle.
- **Placenta:** the vascular organ formed in the uterus during pregnancy, consisting of both maternal and embryonic tissues and providing oxygen and nutrients for the foetus and transfer of waste products from the fetal to the maternal blood circulation.



- **Mammary gland:** One of the glands in female mammals that produces milk. It is present but undeveloped in the male. In most animals, the gland opens onto the surface by means of a nipple or teat. Mammary glands number from 2 to 20, depending on the species.
- **Lifecycle:** the series of changes occurring in an animal or plant between one development stage and the identical stage in the next generation.
- **Menopause:** the period of permanent cessation of menstruation, usually occurring between the ages of 45 and 55.
- **Menstruation:** the approximately monthly discharge of blood and cellular debris from the uterus by nonpregnant females from puberty age to the menopause.
- **Uterus (womb):** a hollow muscular organ lying within the pelvic cavity of female mammals. It houses the developing foetus and by contractions aids in its expulsion.
- **Cervix:** the narrow neck-like passage forming the lower end of the female womb.
- **Placenta:** The placenta (also known as afterbirth) is an organ that connects the developing foetus to the uterine wall to allow nutrient uptake, provide thermo-regulation to the foetus, waste elimination, and gas exchange via the mother's blood supply, fight against internal infection and produce hormones to support pregnancy.
- **Umbilical chord:** a flexible cord-like structure containing blood vessels and attaching a human or other mammalian foetus to the placenta during gestation.
- **Ovum:** a mature female reproductive cell, especially of a human or other animal, which can divide to give rise to an embryo usually only after fertilization by a male cell.
- **Zygote:** a fertilised ovum



# Growing up

The first part of this booklet will focus on the changes that happen to our bodies as we enter adulthood. What and how puberty is controlled, and how male and female bodies change during puberty.

**Task:** We're going to revise some basic reproduction terms. Underline the correct answer for the gap in each statement below.

1. When sexual intercourse takes, place sperm are released into the.....

**ovary**                      **oviduct**                      **uterus**                      **vagina**

2. In the male reproductive system, sperm are produced in the.....

**penis**                      **sperm duct**                      **testes**                      **urethra**

3. Which of the following is NOT part of the female reproductive system?

**ovary**                      **testes**                      **uterus**                      **vagina**

4. The life support system for a baby is in the.....

**ovary**                      **oviduct**                      **uterus**                      **vagina**

5. In the male reproductive system the urethra carries.....

**just sperm**                      **just urine**                      **sperm or urine**                      **blood**

7. Fertilisation of an egg occurs in the.....

**ovary**                      **oviduct**                      **uterus**                      **vagina**

8. Which of the following is NOT part of the male reproductive system?

**oviduct**                      **penis**                      **scrotum**                      **sperm duct**



**Task:** Using the words (in bold) below; fill in the blanks for the three sentences.

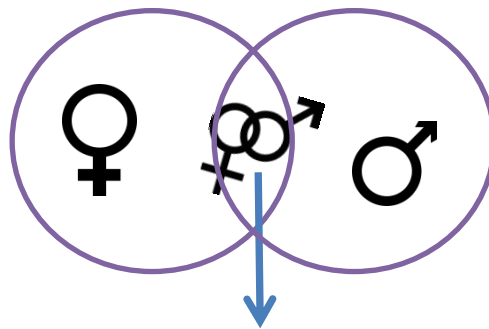
**Hormones**

**Puberty**

**Adolescence**

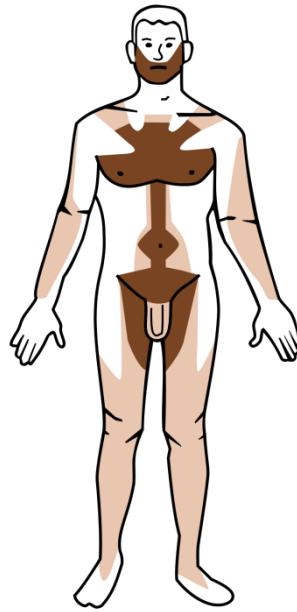
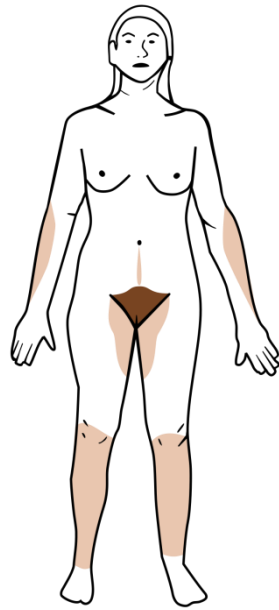
1. \_\_\_\_\_ is the period of life between child and adulthood.
2. \_\_\_\_\_ is the time when sex organs begin to work.
3. The changes that happen during puberty are caused by \_\_\_\_\_.

**Task:** List the changes that occur in both males and females during puberty.





**Task:** List the major changes that occur in male and female bodies during puberty.



**Female**

**Male**

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**Task:** You work as a guest editor in the “teen” section of an online forum. Write down a response to each of these two questions recently posted by worried teenagers.

**phpBB**  
creating communities

**Teen-World Forum (TWF)**

Search... Search  
Advanced search

Board index

User Control Panel (0 new messages) • View your posts

FAQ Members Logout [ admin ]

Dear Teen World

Why am I different? My friends in school are all wearing bras and most of them have started their periods. Not much has happened to me yet! I've only grown a bit of pubic hair and my breasts aren't doing much. I'm nearly 13 years old and much taller than the rest of them! *Justine, age 12.*

Hey TWF

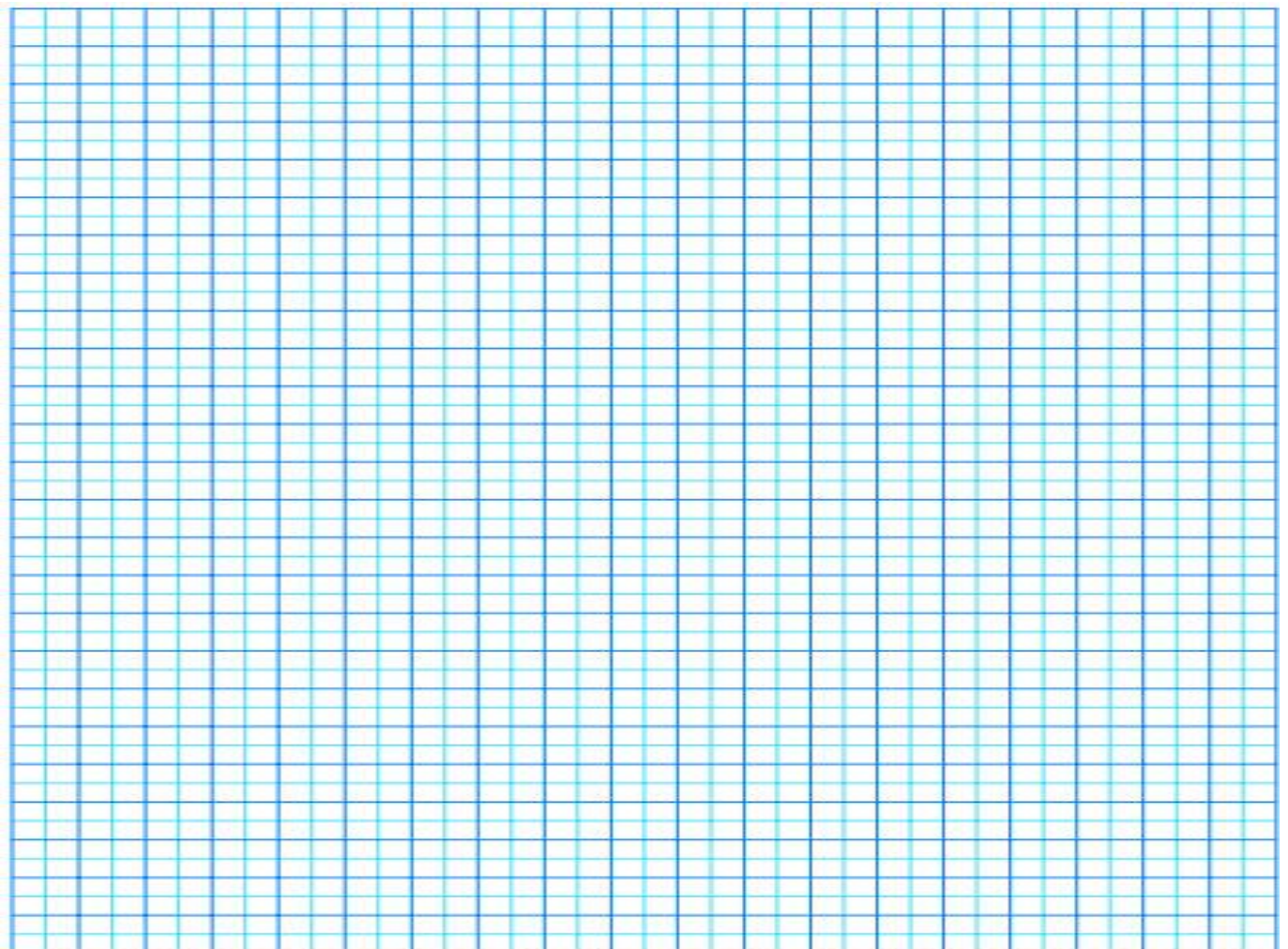
I feel so ugly. My face is covered in spots all the time, it's sore and red. I think it is acne but why has it happened so suddenly? Will it ever go away?  
*Robert, age 14*



**Task:** Draw a suitable chart on the graph paper below to best display this tabular information.

Age	Average height of girls (cm)	Average height of boys (cm)
9	140	140
10	145	143
11	155	147
12	163	155
13	165	166
14	167	175
15	168	177

**NOTE:** Remember to select a suitable scale and label both (X, Y) axes.





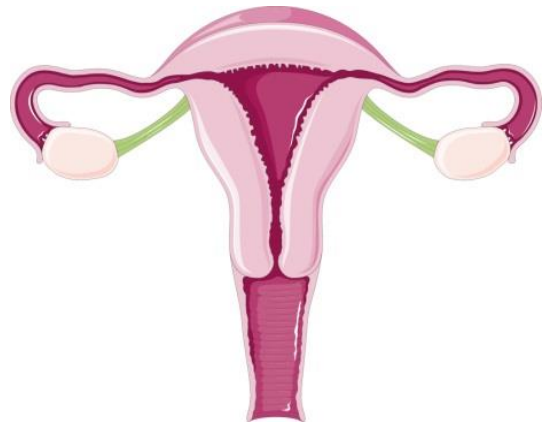


**Task:** Test your knowledge of puberty by answering true or false to the questions below.

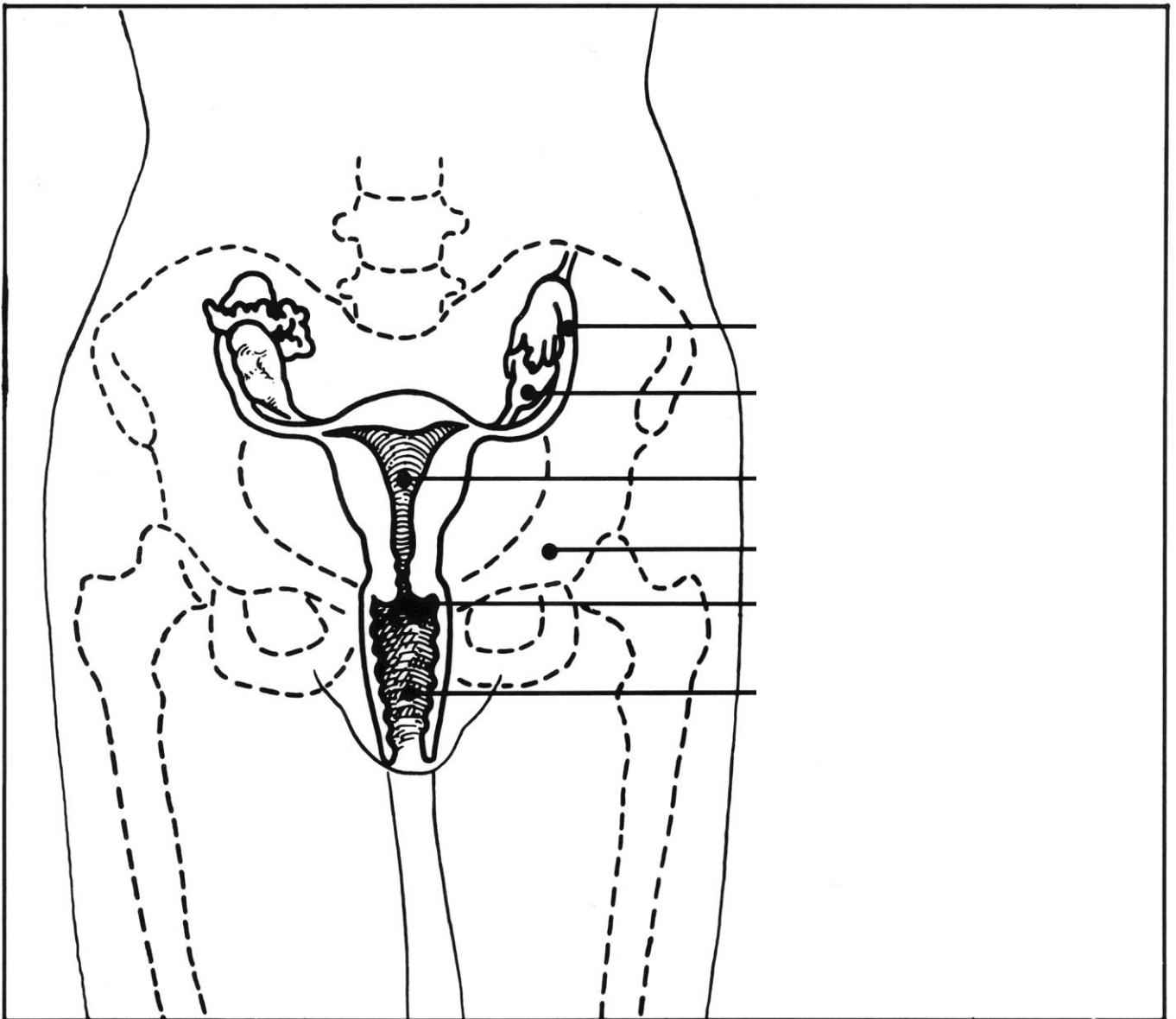
Questions	True or false?
Boys and girls start puberty at the same time...	
The testes and ovaries do not make hormones...	
Chemicals called hormones start off the changes...	
Not only our bodies change but also our feelings...	
All boys start puberty at the same age...	
Girls may start puberty at different ages...	
Everyone grows at the same rate...	
Some people get more spots during puberty...	
Only boys will end up with hair on their bodies...	
Puberty occurs typically between the ages of 7 - 13	
You may feel attracted to someone	
An egg is released every month from the testes	



- When a female goes through puberty she will begin to have periods. This is one of many changes.
- This is the female body's way of preparing to reproduce. The female reproductive system works on a 28 day cycle.
- This cycle is known as the menstrual cycle, which consists of a number of distinct stages.

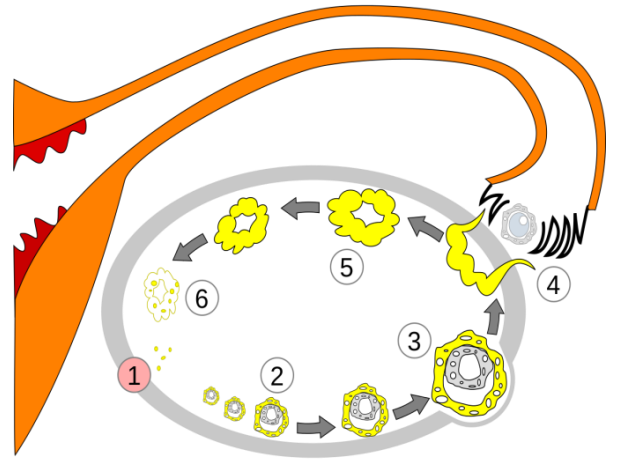


**Task:** As a revision exercise, label the six parts of the female reproductive organ below.





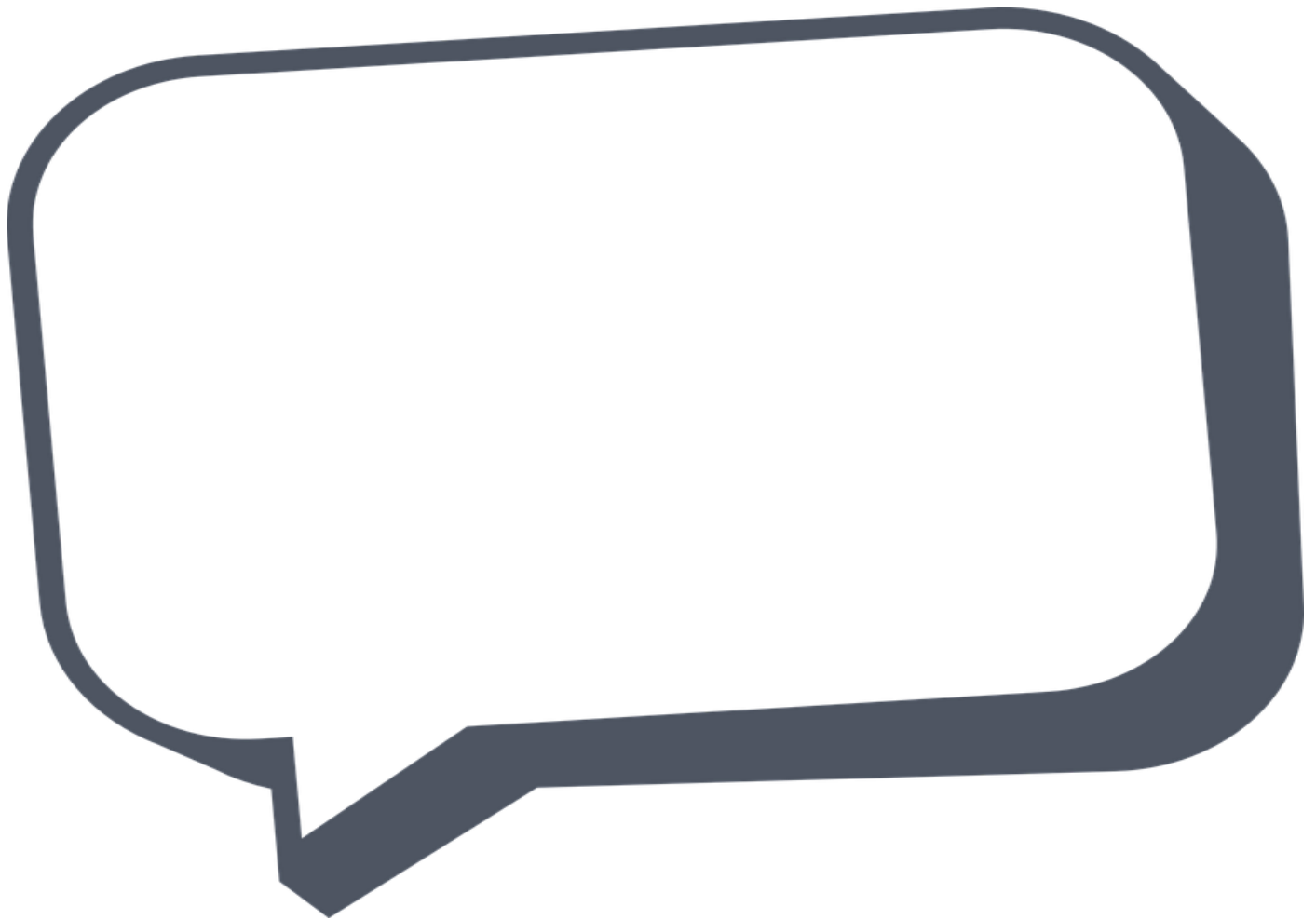
**Task:** In the table below list the typical processes occurring within the female reproductive organ during each stage of the menstrual cycle. This diagram will help you with your answers.



<b><u>Day 1 - 7</u></b>	
<b><u>Day 7 - 13</u></b>	
<b><u>Day 14 (mid)</u></b>	
<b><u>Day 14 - 17</u></b>	
<b><u>Day 18 - 28</u></b>	
<b><u>Day 1 - 7</u></b>	

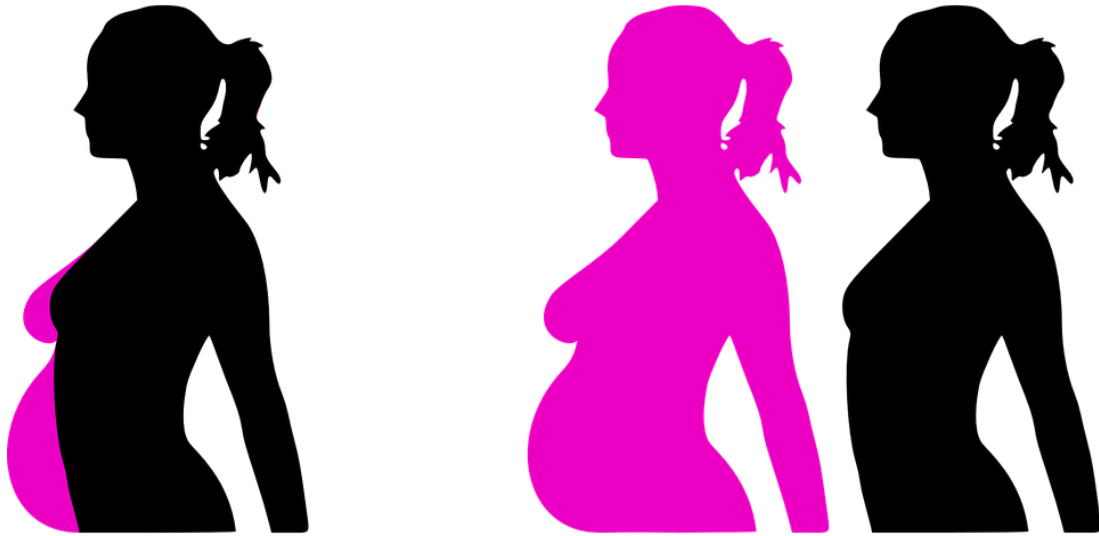


Task: Your best friend has just set a message to your phone. She's worried about starting her period. To help calm her nerves, summarise menstruation in a short text reply.





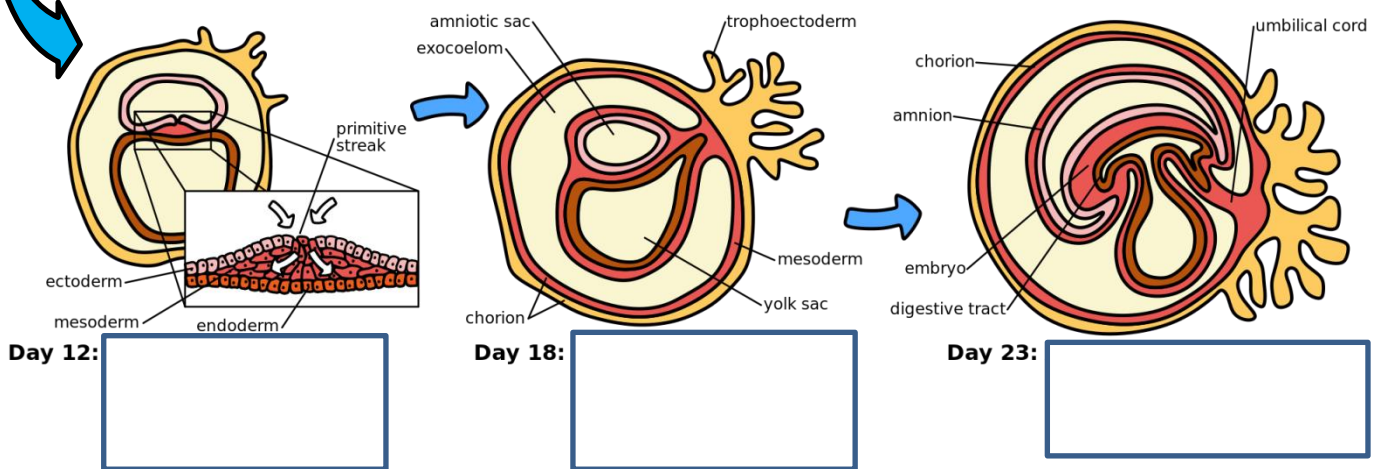
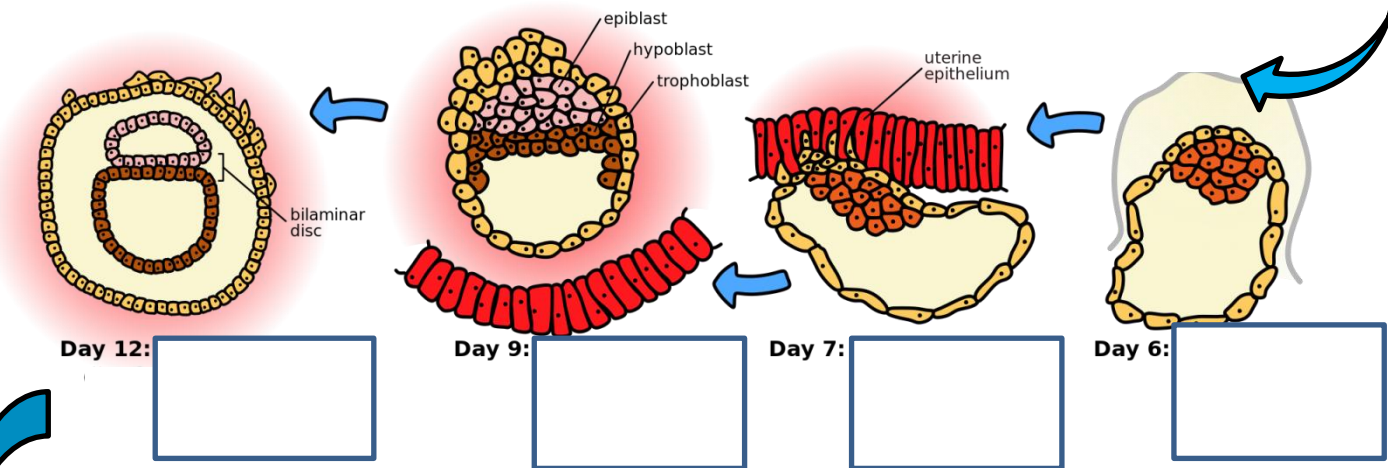
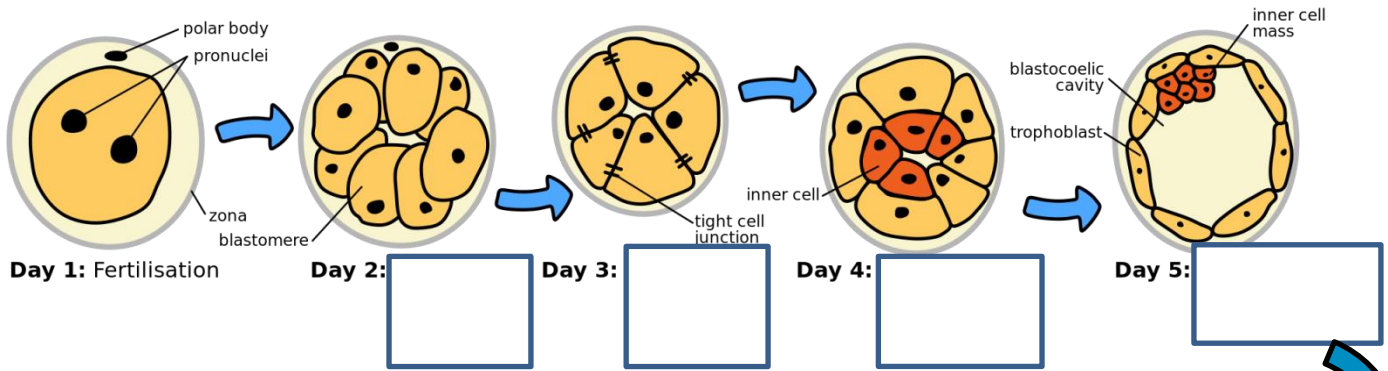
**Task:** List the major hormonal and physical changes that occur when a female becomes pregnant.



<b>Month 1:</b>
<b>Month 3:</b>
<b>Month 6:</b>
<b>Month 7:</b>
<b>Month 9:</b>



**Task:** Label each stage (day) of egg development after initial fertilisation.



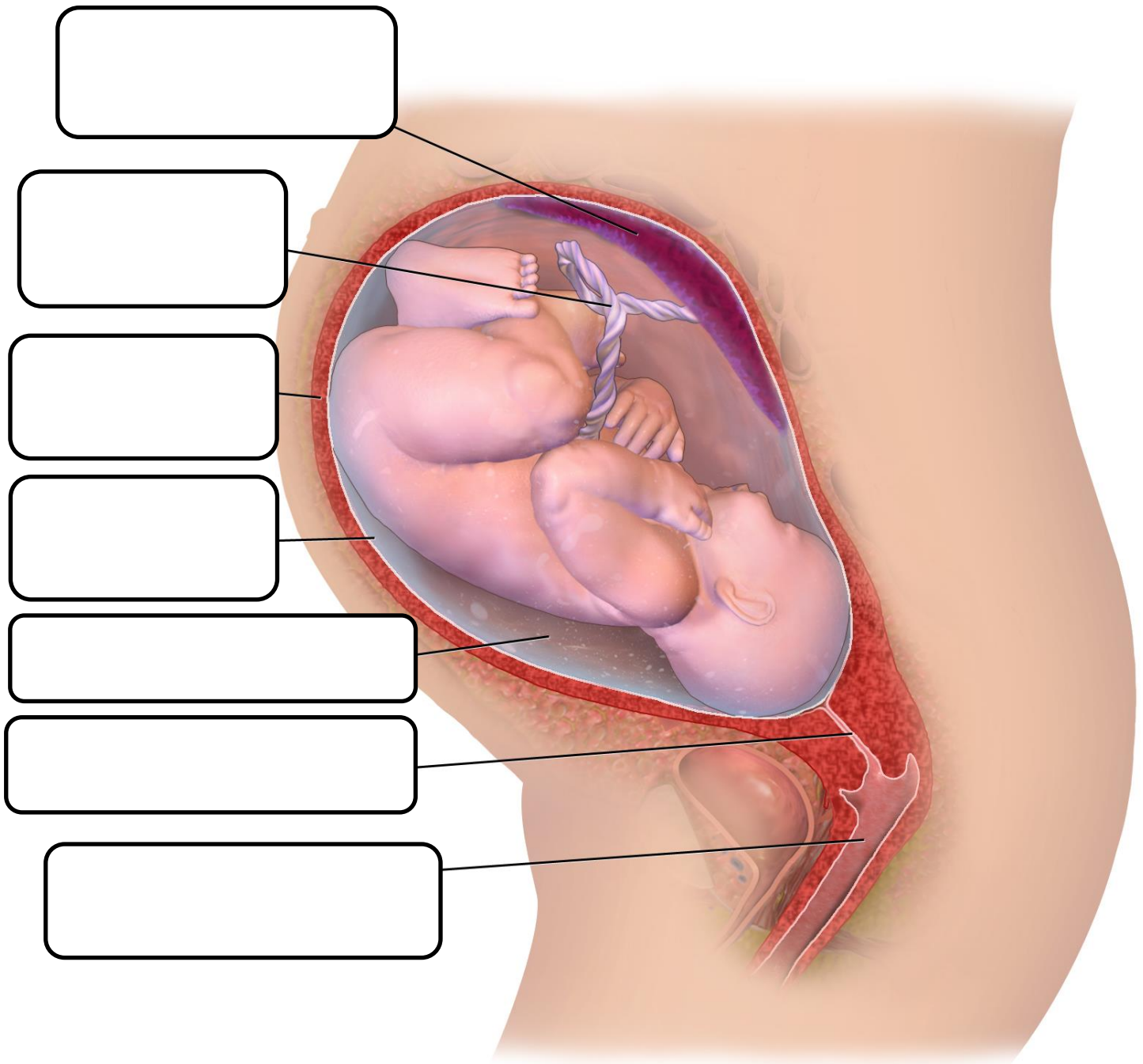


**Task:** List the significant changes to the developing foetus and pregnant mother during these key months.

	<p><b>Month 1:</b></p>
	<p><b>Month 3:</b></p>
	<p><b>Month 6:</b></p>
	<p><b>Month 7:</b></p>
<p><b>Month 9:</b></p>	



**Task:** Label the diagram of the female and her developing baby.



**Task:** What is the correct term for the nine month period of foetal development?

**G** \_\_\_\_\_ **P** \_\_\_\_\_





**Task:** Explain why ultra-scans are frequently used to check the development of a foetus.

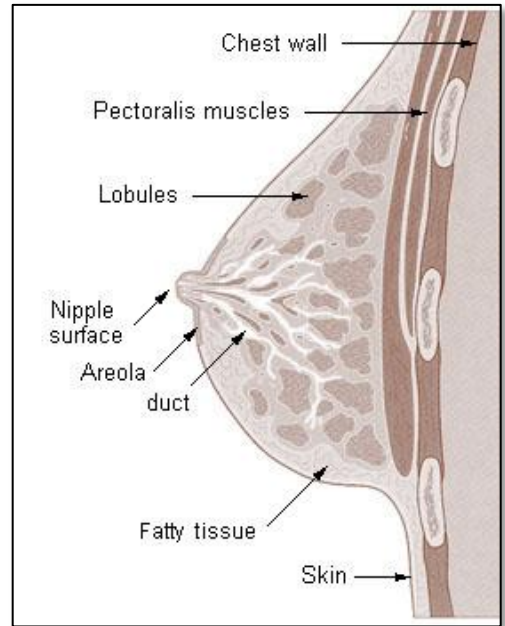


**Task:** List the changes in lifestyle and nutrition that a pregnant mother must make to ensure a healthy new born baby.



**Task:** What is the correct terminology for this body part?

**M** \_\_\_\_\_ **G** \_\_\_\_\_

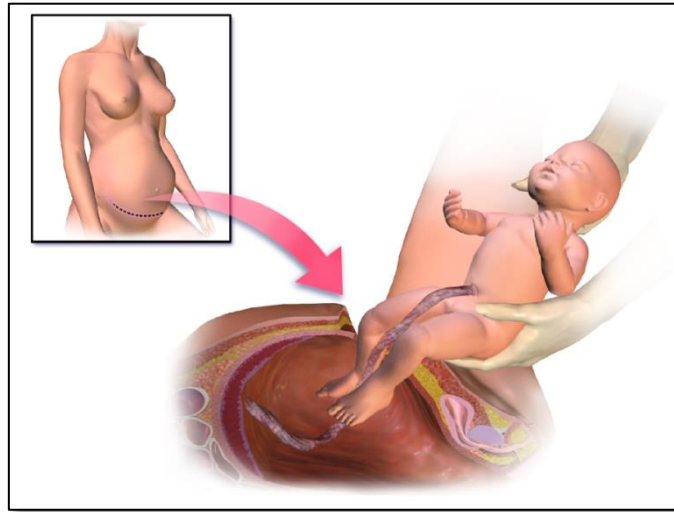


**Task:** List the things that a pregnant mother could consume, which would harm the development of her unborn baby?





**Task:** What is this method of childbirth called?



**Task:** Draw a line to match up the correct statements about giving birth.

Females are <b>pregnant</b> for about.....
Labour starts when the <b>uterus</b> .....
During labour the <b>cervix</b> .....
Her <b>waters</b> have.....
When the cervix is <b>10cm wide</b> the baby is.....
The <b>umbilical cord</b> is .....
The <b>afterbirth</b> is.....

- becomes wider
- is ejected after the baby
- broken
- pushed out
- 9 months
- cut
- begins to contract



**Task:** Underline the correct answer for the gap in each statement below.

1. The female reproductive system includes a cycle of events called the menstrual cycle. This is also commonly referred to as a.....

**period**                                      **punishment**                                      **pain**                                      **pain period**

2. The female menstrual cycle lasts for about.....

**21 days**                                      **21 hours**                                      **30 days**                                      **28 days**

3. If an egg cell meets and joins with a sperm cell, it is referred to as being...

**fertile**                                      **futile**                                      **fertilised**                                      **fused**

4. During puberty hormone called ..... is made by the testes in a boy.

**tostosterone**                                      **testosterone**                                      **toblerone**                                      **thrombone**

5. During female puberty a hormone called ..... is made by the ovaries.

**oestrogen**                                      **estrogender**                                      **cervical**                                      **perspiration**

6. Puberty occurs at about the age of .....in a girl

**12 – 14**                                      **10 -12**                                      **14- 16**                                      **11 - 13**

7. Once every month a woman releases an..... Into the oviduct

**cervix**                                      **uterus**                                      **ovum**                                      **vagina**

8. During pregnancy the ..... is responsible for providing oxygen and nutrients, and removing waste substances.

**Uterus**                                      **cervix**                                      **anus**                                      **placenta**



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# NOTES

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