

# Abraham Darby Academy



## KS3 Biology | Reproduction

Knowledge series | Study Booklet | 2017





## Key terms

- **Asexual reproduction:** A type of reproduction by which offspring arise from a single organism, and inherit the genes of that parent only.
- **Reproduction:** The creation of a new organism.
- **Egg cell** (ovum): The female sex cell.
- **Sperm cell:** The male sex cell.
- **Ovary:** The female sex gland where egg cells are made.
- **Testes:** The male sex gland where sperm cells are made.
- **Oviduct:** The tube which joins the ovary to the womb. The egg cell travels down this tube.
- **Uterus:** The part of the female reproductive system where the baby develops. Also known as the **womb**.
- **Menstruation** (period): The process where the lining of a woman's uterus breaks down because fertilisation has not taken place.
- **Ovulation:** The process where an egg cell is released from the ovaries.
- **Fertilisation:** The process where the sperm cell and egg cell fuse (join together) to form an embryo.
- **Gestation** (pregnancy): The period where the new life (baby) develops inside the mother's womb.
- **IVF** (In vitro fertilization): A medical procedure whereby an egg is fertilized by sperm in a test tube or elsewhere outside the body.
- **Mammary glands:** The glands where milk is produced for the offspring (baby)
- **Intercourse:** The process where the male and female reproductive organs meet so that fertilisation can take place.
- **Puberty:** The physical changes which happen at the start of adolescence.
- **Stamen:** The male fertilising organ of a flower, typically consisting of a pollen-containing **anther** and a **filament**.
- **Pistil:** The ovule producing part of a flower. The ovary often supports a long **style**, topped by a **stigma**. The mature ovary is a fruit, and the mature ovule is a seed.
- **Adolescence:** The change in a young person where they go from being a child to an adult.
- **Foetus:** The developing offspring (baby) in the womb.
- **Penis:** The male reproductive organ.
- **Vagina:** The female reproductive organ.



## The reproductive system

Task: Sort the keywords into two lists: one for the male system and one for the female system.

Scrotum

Cervix

Sperm

Oviduct

Vagina

Testes

Ovary

Ovum

Sperm duct

Uterus

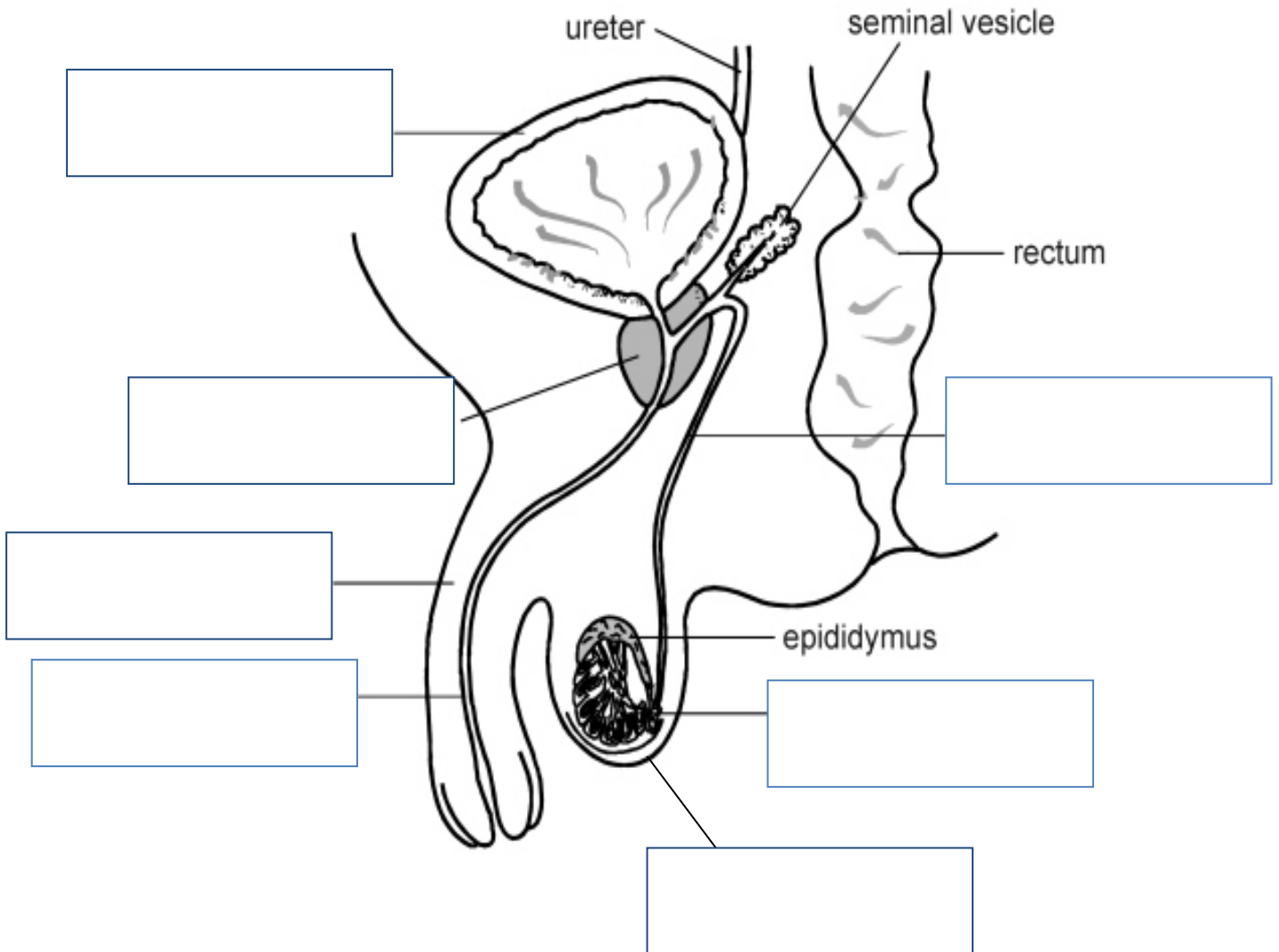
**Male**

**Female**



# The male reproductive system

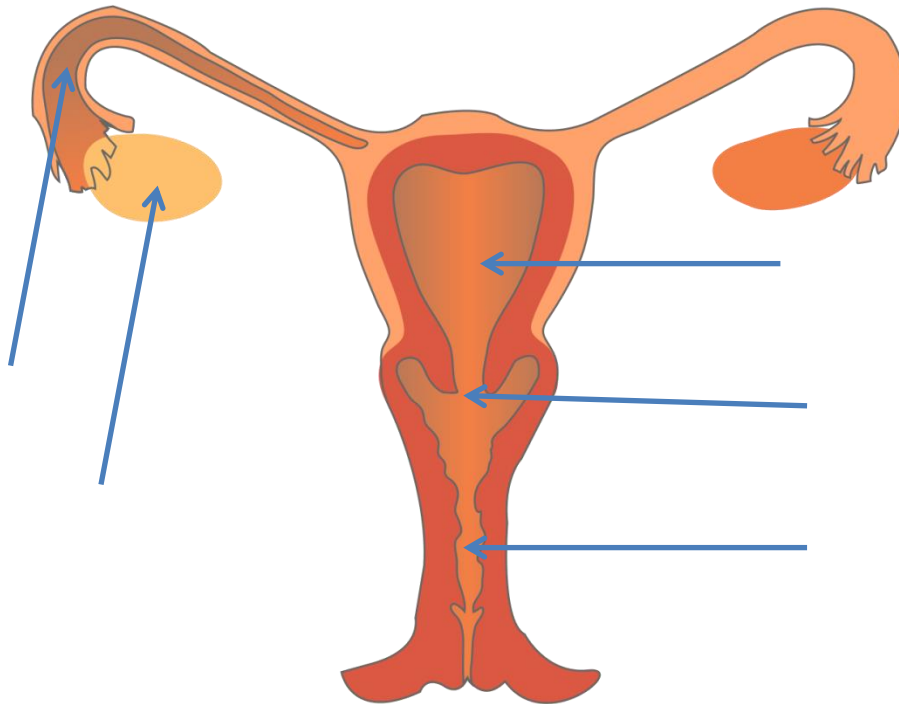
Task: Label the parts of the male reproductive system.



Task: Draw the route taken from the testes by the sperm as it leaves the body.



**Task:** Label the parts of the female reproductive system.



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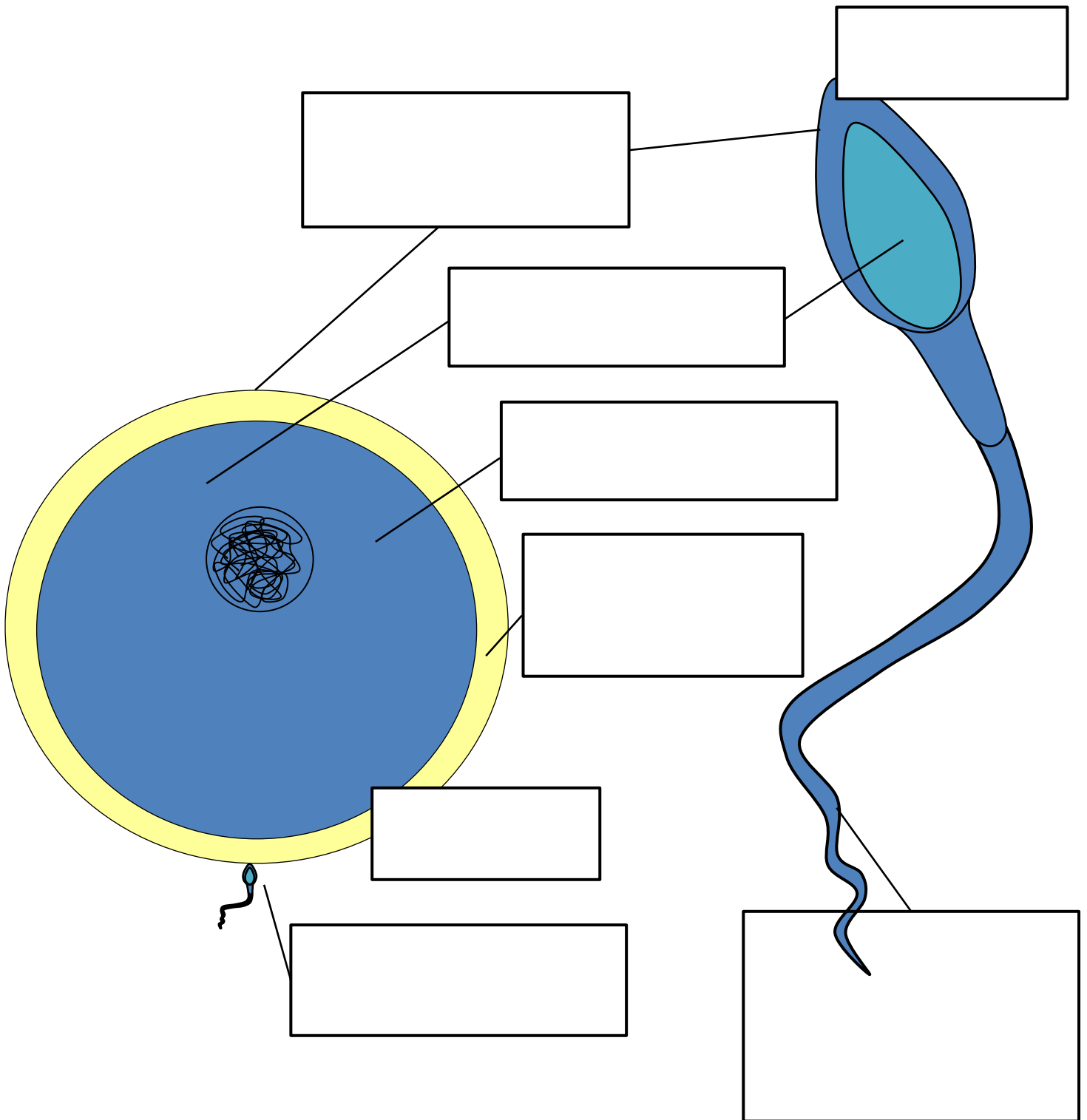
Different animals have different strategies for reproduction. A female elephant only produces one egg at a time, has a long gestation period, and looks after her baby for many years. A female salmon fish produces thousands of eggs and does nothing to help her offspring.

**Task:** Explain the types and process of fertilisation in these two different reproduction strategies.



# Reproductive cells

Task: Label the male and female reproductive cells, and their respective parts.





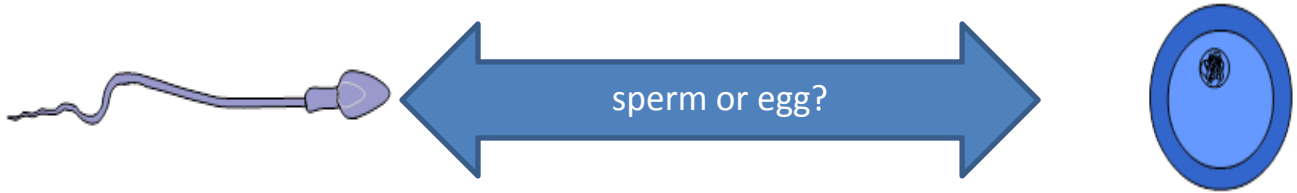
**Task:** Fill in the blank spaces in each of the eight statements about reproduction.

<b>UTERUS</b>	Sometimes called the _____. If an egg is fertilised, it will _____ in the wall of the uterus and develop into a _____.
<b>CERVIX</b>	The opening or _____ of the uterus at the top of the _____.
<b>SPERM</b>	The male sex _____. It is adapted to _____ from the vagina to the _____.
<b>SCROTUM</b>	A sac of _____ which holds the _____.
<b>OVIDUCT</b>	Carries the _____ from the ovary to the _____. The _____ is fertilised here.
<b>OVUM</b>	The female sex _____. Sometimes called an _____.
<b>TESTES</b>	After _____, these make _____ continuously.
<b>OVARY</b>	After _____, the egg or _____ is released from here once every _____ days or so.



# Reproductive cells

Task: Write in the right hand column whether the characteristic in the left hand side of the table is from a sperm or egg cell? Images below are NOT to scale.



Characteristic	Sperm or Egg?
Specially strengthened head.	
Only a few produced.	
Large.	
Small and streamlined.	
Millions produced.	
Unable to move.	
Uses a tail to swim.	
Contains large food stores.	
Contains a chemical to break through things.	
Released about once per month – after puberty.	
Produced constantly after puberty.	





**Task:** Check your knowledge of reproduction by answering the following seven questions.

1. **Where are eggs produced?**

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2. **How often are eggs released?**

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3. **At what point do the release of eggs occur in the menstrual cycle?**

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4. **What is the name given to the release of eggs?**

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5. **What is fertilisation?**

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6. **Where does fertilisation take place?**

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7. **What happens if the egg is not fertilised?**

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# Fertilisation and implantation

**Task:** Fill in the blanks from the following statement.

The process of making a \_\_\_\_\_ involves a number of key steps. First, \_\_\_\_\_ need to be made by the mother and father. Then \_\_\_\_\_ from the male needs to be transferred into the female and meet the \_\_\_\_\_ in fertilisation. Finally, the \_\_\_\_\_ egg needs to implant in the \_\_\_\_\_ wall.

**Task:** Complete the sentences by connecting each statement on the left with the correct ending on the right.

During intercourse, the man's penis...

...500 million sperm.

The woman's vagina...

...out of the penis.

Moving the penis in the vagina...

...becomes stiff and erect.

Semen is released...

...becomes relaxed and moist.

Each ejaculation contains...

...causes the man to ejaculate.



**Task:** Some information on the growth of a human baby is given in the table below. Answer questions A and B below:

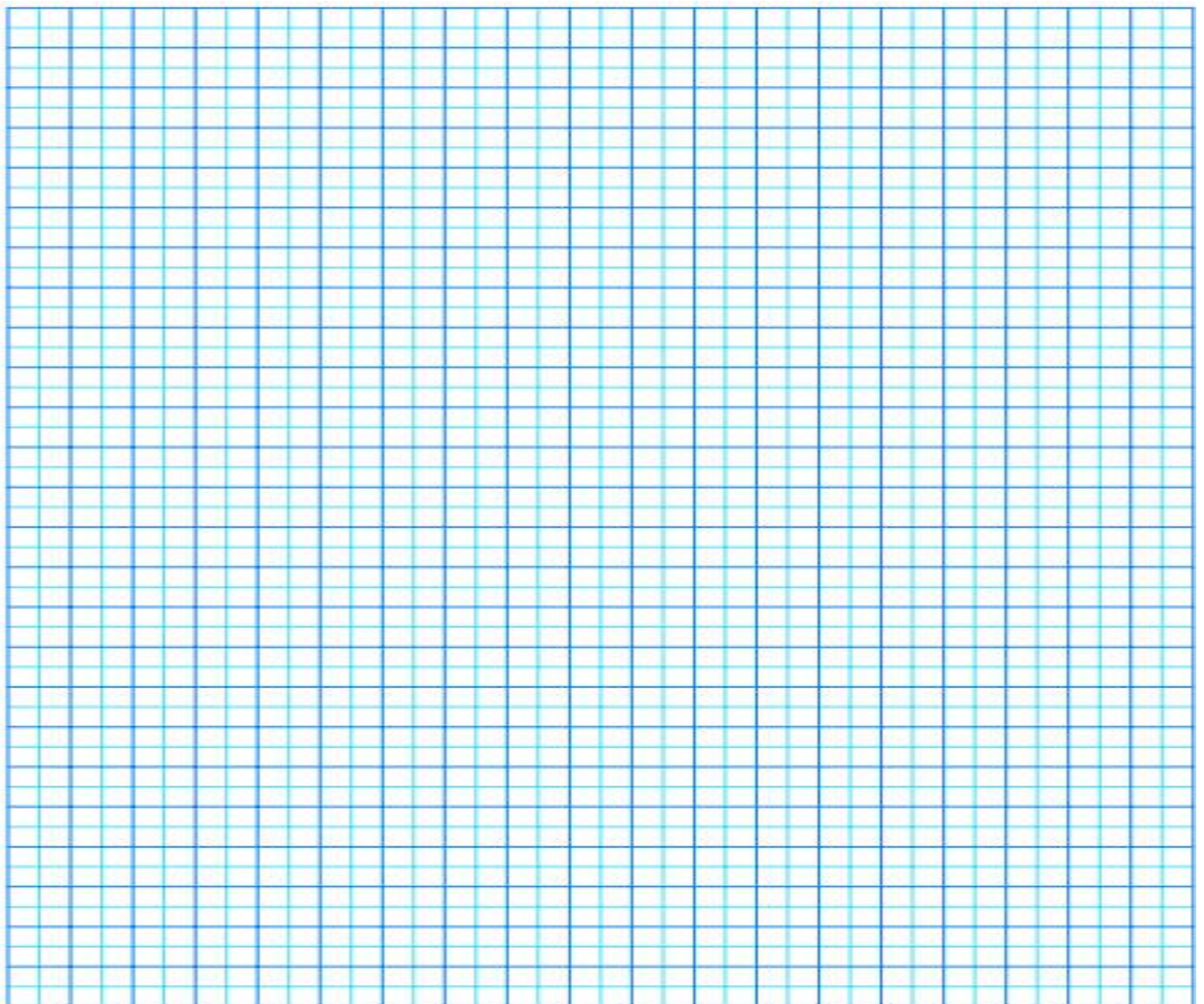
<b>Age/months</b>	0	1	2	3	4	5	6	7	8	9
<b>Length/cm</b>	0	1	4	9	17	27	31	35	39	43

A) Draw on the grid below showing the growth curve from the table information above. Choose a suitable scale and label both axes.

B) What age range is the baby growing:

i) The fastest? \_\_\_\_\_

ii) The slowest? \_\_\_\_\_

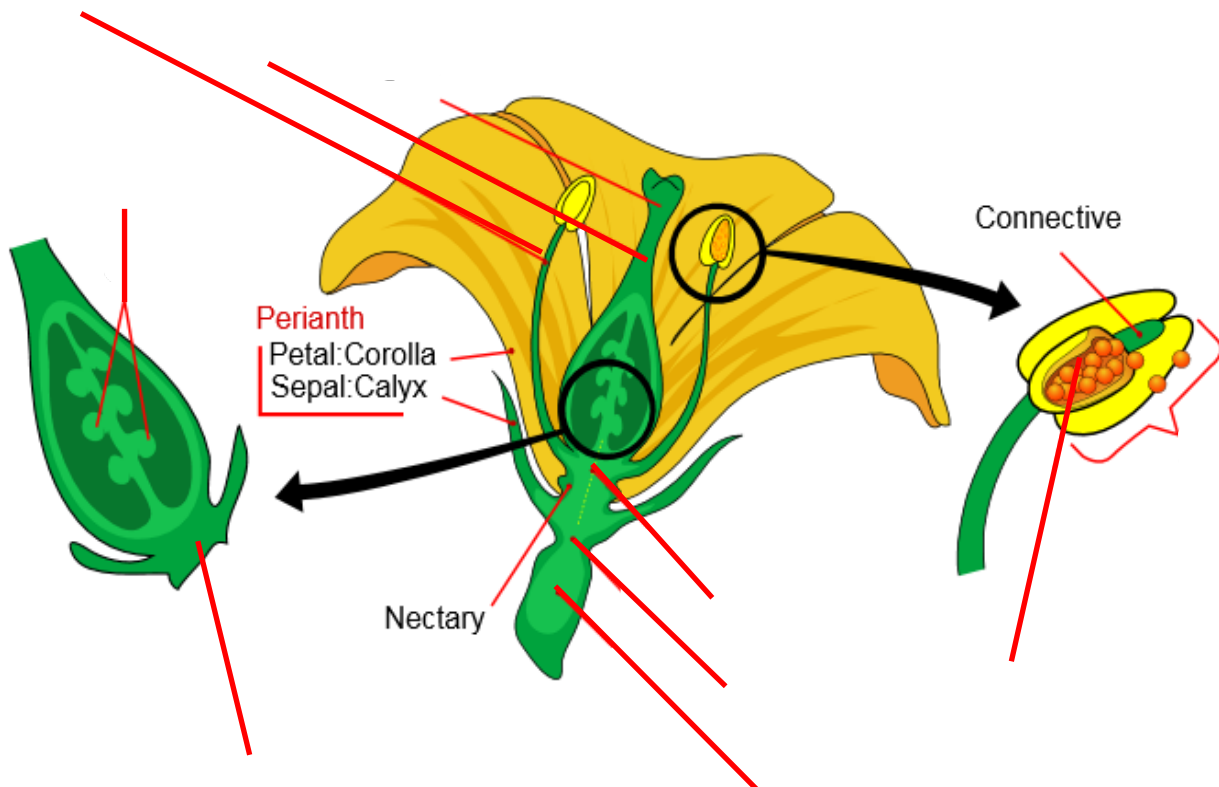




**Task:** Male animals use many different methods to attract a female during courtship. Complete the table below:

Method of attraction	How it works	Example of animal that uses the method
Display		Peacock
	Chemicals are produced to attract female	Moth
Movement		Hare
	A clear and distinctive noise is made to show where the male is	

**Task:** Label the parts and sex organs of this mature flower.





**Task:** Complete the following sentences using these words in bold.

**identical**      **labour**      **mate**      **non-identical**      **puberty**      **uterus**

- Animals carry out courtship to attract a .....
- When humans go through changes to become sexually mature, this is called .....
- If a boy and a girl are twins, they must be .....
- Another name for the womb is the .....
- When a baby is ready to be born, the mother goes into .....

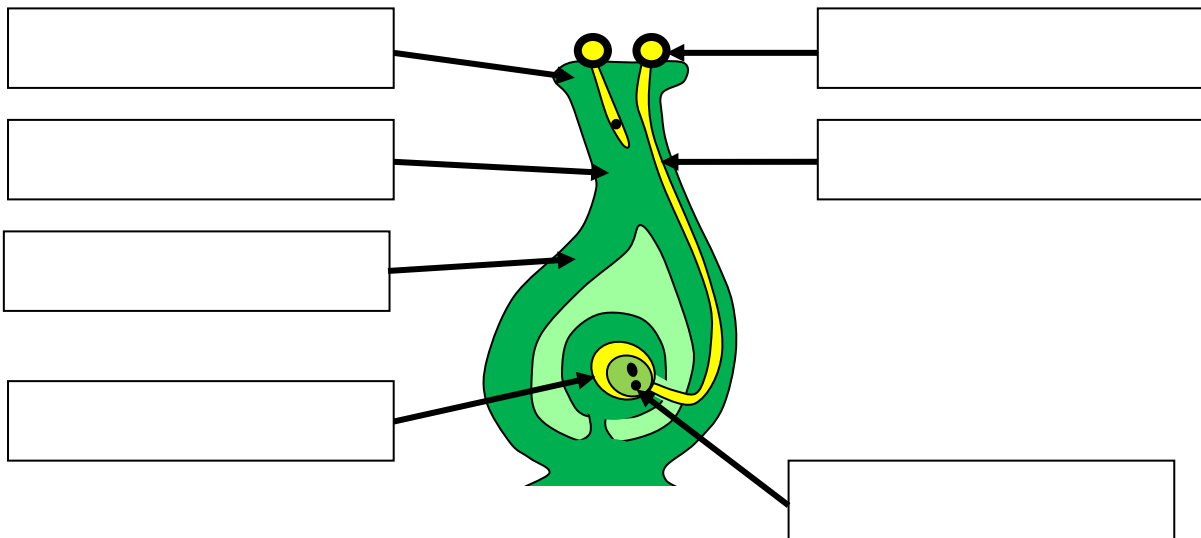
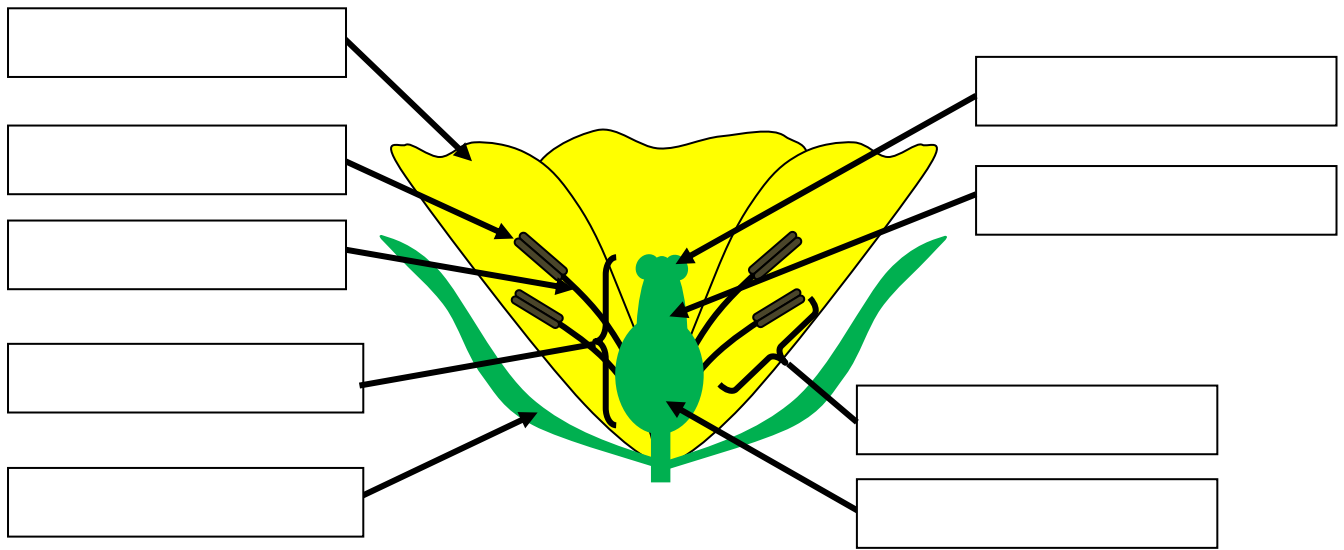
**Task:** Complete the following statements using these words in bold.

**Pollination**      **Flowers**      **cells**      **sex**      **reproduction**

- .....are important for sexual reproduction by plants,
- Flowers produce both male female sex .....
- The ..... cells must meet for ..... to begin.
- .....is the process of the female male sex..... meeting.



**Task:** Label the two flower diagrams below.



**Task:** Fill in all the terms as defined below?

Term	Definition
	Coloured, flag-like structures which attract insects
	The male sex organ – made of the filament and the anther
	Part of the male sex organ – makes pollen
	A thin stalk that supports the anther
	The female sex organs – made of the stigma, the style and the ovary
	Collects pollen
	Connects the stigma to the ovary
	Found inside the ovary; contains the egg cell
	Grows out of the pollen grain and into the stigma: carries the pollen nucleus down to the egg cell



**Task:** How are the above types of flowers typically pollinated?



**Task:** How are the above grasses/flowers pollinated?



**Task:** Explain how this hummingbird hawk moth pollinates flowers as it feeds on the nectar.



**Task:** Explain why and how the agriculture of UK would be affected if there was a catastrophic decline in the current bee population.





# Asexual Reproduction

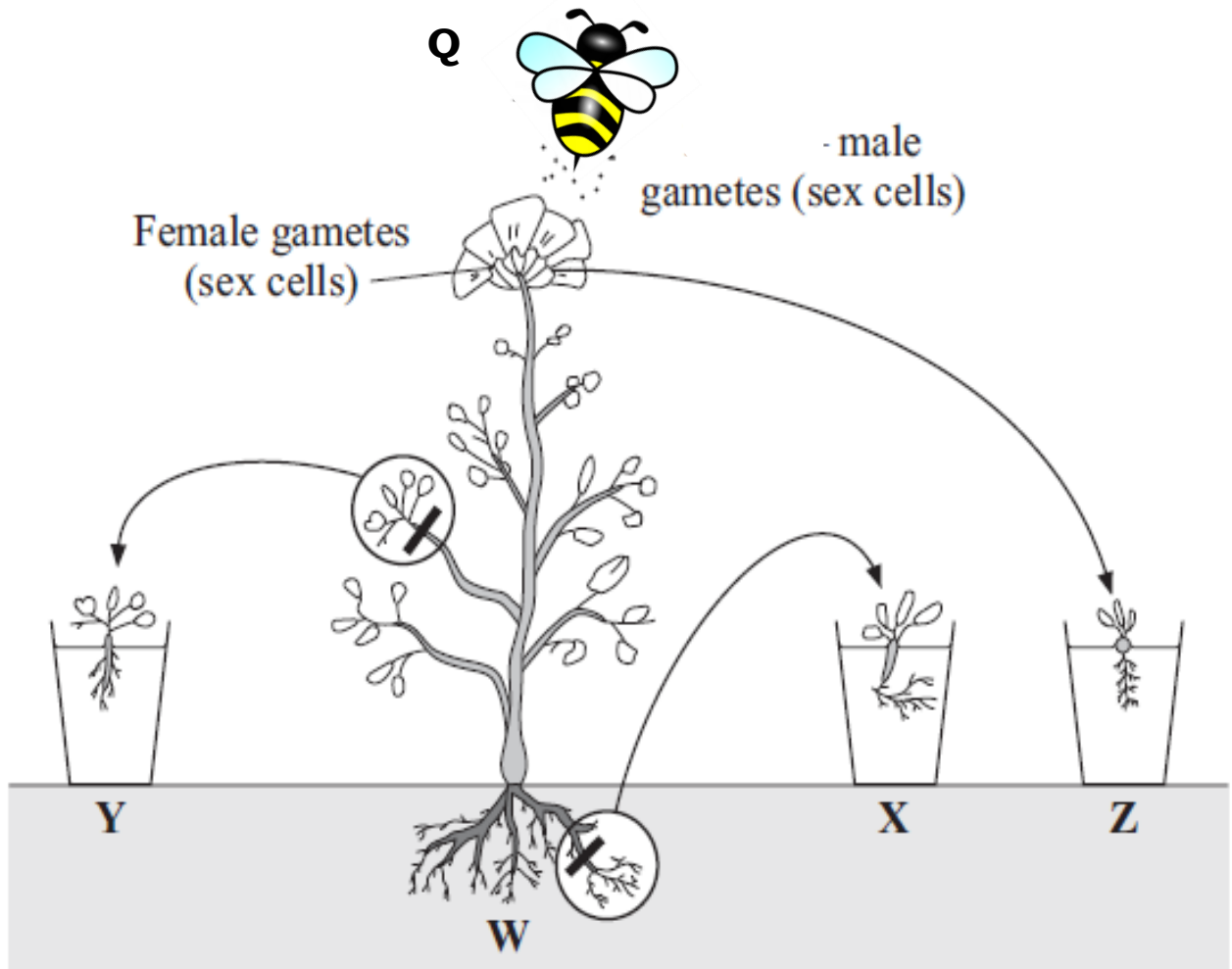
**Task:** Complete the following statements about asexual reproduction using these words in bold.

**asexually one genes clone every same cell bacteria  
new-life two identical vegetative spores**

- Asexual reproduction is where \_\_\_\_\_ parent can produce \_\_\_\_\_
- Very often this happens in \_\_\_\_\_ or fungi
- One \_\_\_\_\_ simply divides into \_\_\_\_\_ to make a new bacteria
- \_\_\_\_\_ new cell is \_\_\_\_\_ to the parent that made it
- A cell that is identical is called a \_\_\_\_\_
- All the \_\_\_\_\_ in every cell are the \_\_\_\_\_
- Aphids, otherwise known as greenfly can produce babies \_\_\_\_\_
- One of the principal methods of asexual reproduction in plants are by \_\_\_\_\_ propagation
- The method of asexual reproduction in ferns and mosses is done by the formation of \_\_\_\_\_



**Task:** Name the five reproduction processes (Q, W, X, Y and Z), illustrated in the diagram below:



Q	
W	
X	
Y	
Z	



**Task:** Explain the difference between sexual and asexual reproduction. Include the words in bold below in your answer:

**Offspring, genes, fertilisation, variation, clones, gametes, inherit**

**Task:** Couples who are unable to have children sometimes try in-vitro fertilisation (IVF) treatment. Write the following IVF treatment statements in the correct .

Incorrect order	Correct order
Sperm from the father is mixed with the egg.	
The egg is removed from the oviduct.	
The fertilised egg is put in the mother's uterus.	
An egg is released from the mother's ovary.	
The egg is fertilised.	

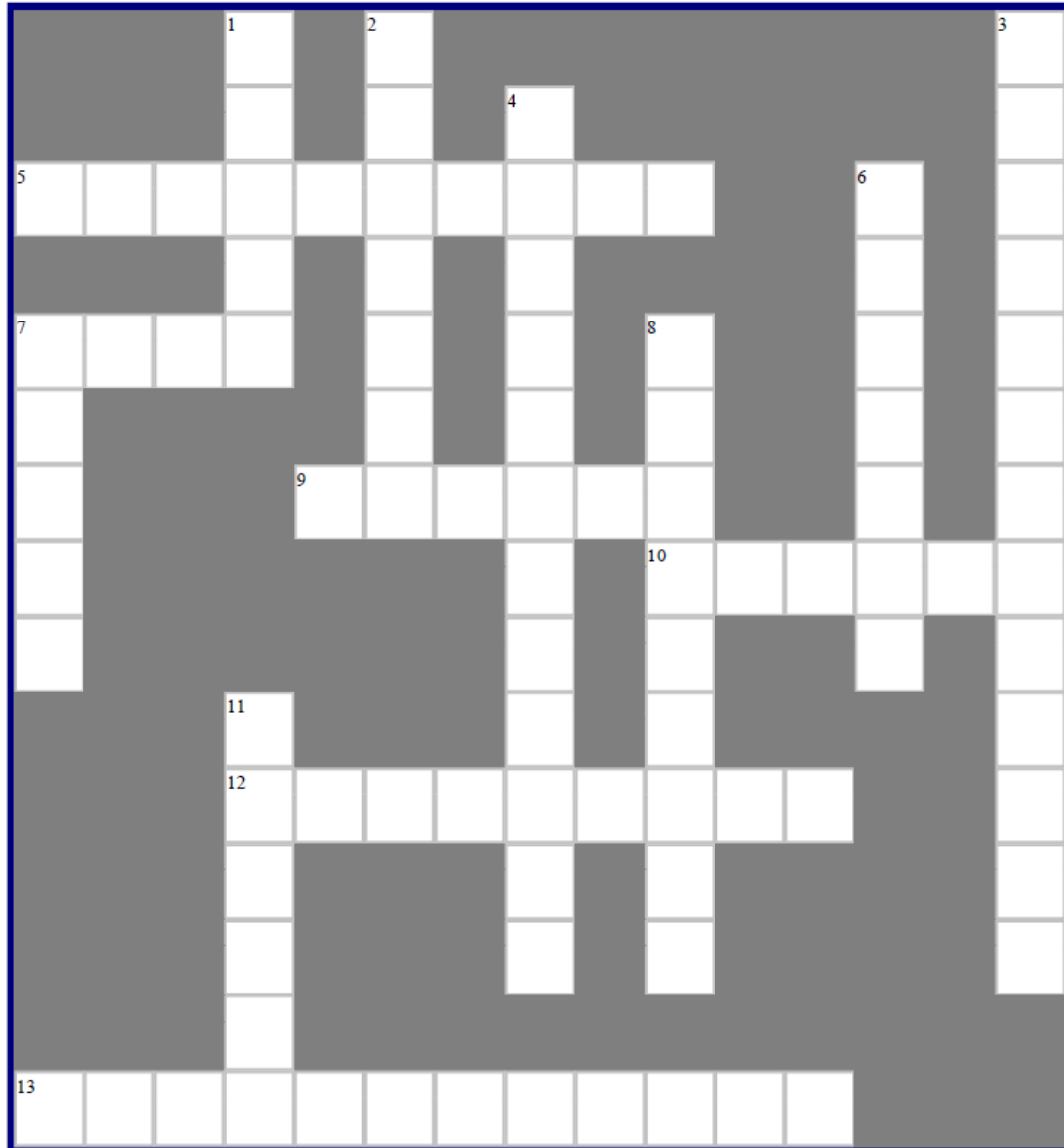


**Task:** Indicate which of the statements in the left hand column are either sexual or asexual reproduction. Use a tick or cross to make your choice.

Terminology	Sexual	Asexual
The faster type of reproduction because a mate does not have to be found.		
This type of reproduction involves only one parent.		
This type of reproduction leads to variation between the offspring.		
This is the type of reproduction which humans use to produce offspring.		
Involves the joining (fusion) of male and female gametes.		
This type of reproduction is sometimes used by plants and insects.		
No fusion of gametes.		
This type of reproduction does not lead to variation in the offspring (clones are produced).		
This type of reproduction involves two parents.		
The slower type of reproduction because a mate has to be found.		



**Task:** Use the clues below to complete this crossword.



**ACROSS**

**DOWN**

- 5. Inherited. (10)
- 7. Female sex cell, egg. (4)
- 9. Where the foetus is kept safely inside the mother's body. (6)
- 10. Organ where sperm are made.(6)
- 12. The process of forming eggs. (9)
- 13. When the lining of the uterus is discarded by the body. (12)

- 1. Male sex cell. (5)
- 2. Eggs travel through this from ovary to uterus. (7)
- 3. When a female cell becomes joined with a male cell. (13)
- 4. (7+5) Organ that provides a baby with milk. (12)
- 6. The time when sex organs begin to work. (7)
- 7. Organ where eggs are made. (5)
- 8. How long the foetus stays in the uterus. (9)
- 11. The developing human baby after the embryonic state. (6)



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# NOTES

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