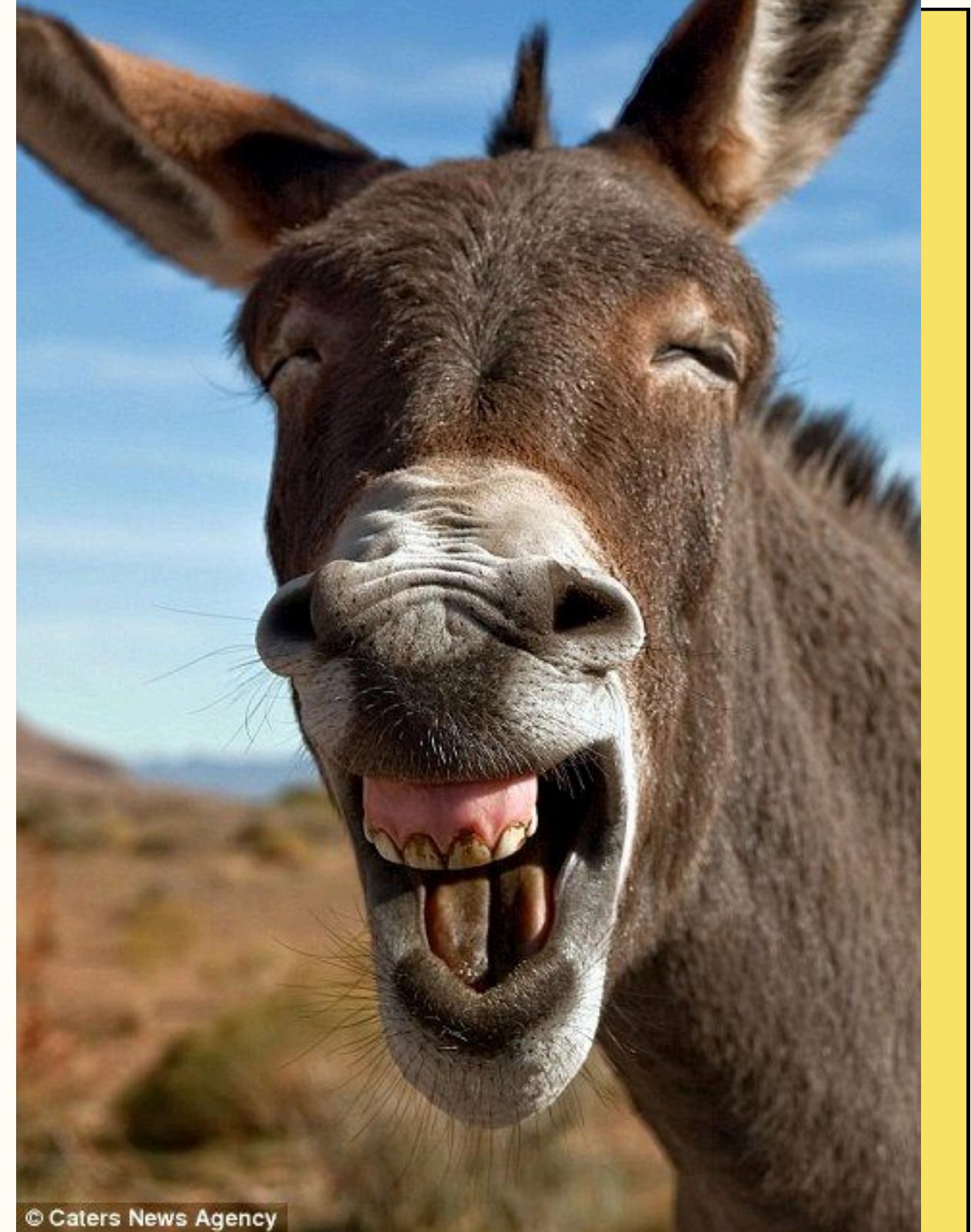


Characteristics of

Living Things

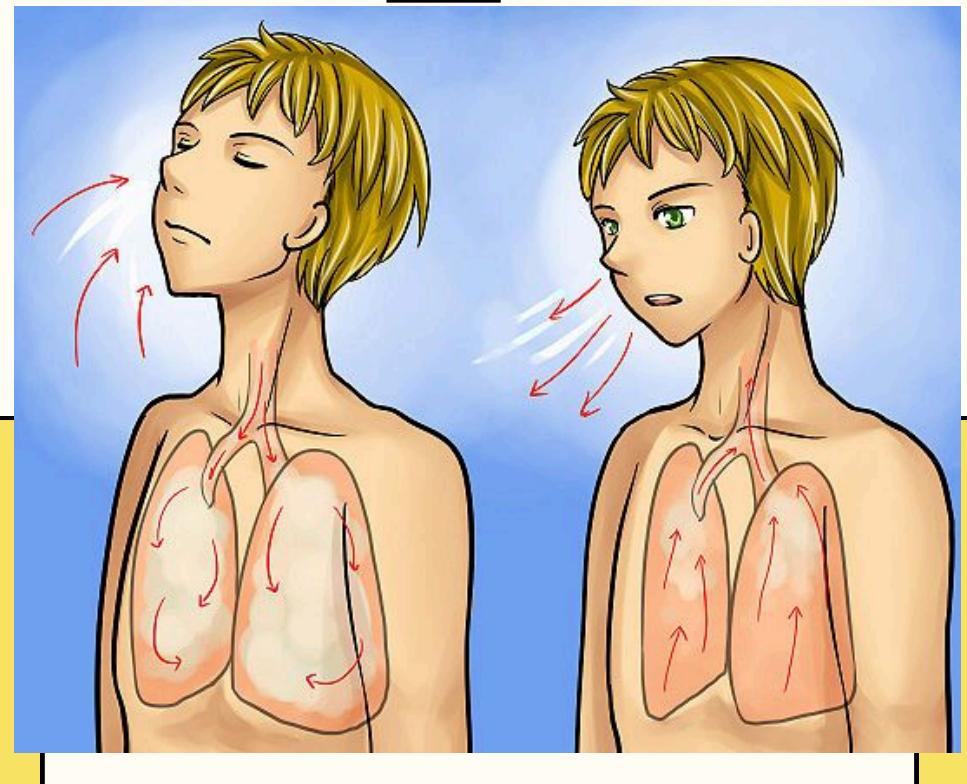
Living things have **seven** main characteristics



© Caters News Agency

Living things have seven main characteristics:

1



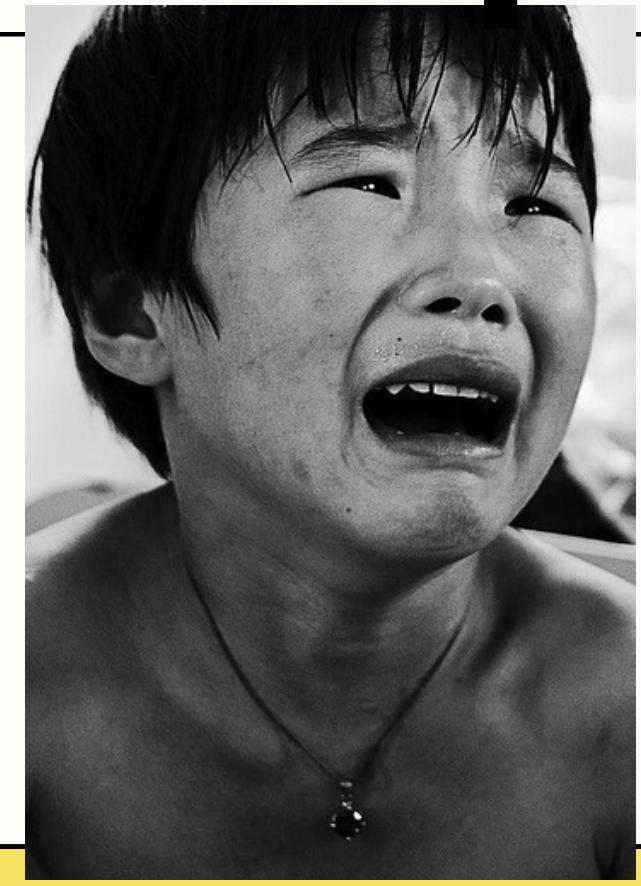
2



3



4



Breathing / Respiration – taking in oxygen, releasing carbon dioxide

Excretion –
removing waste

Reproduction –
forming more individuals

Sensitivity & Response – reacting to the environment

Living things have seven main characteristics:

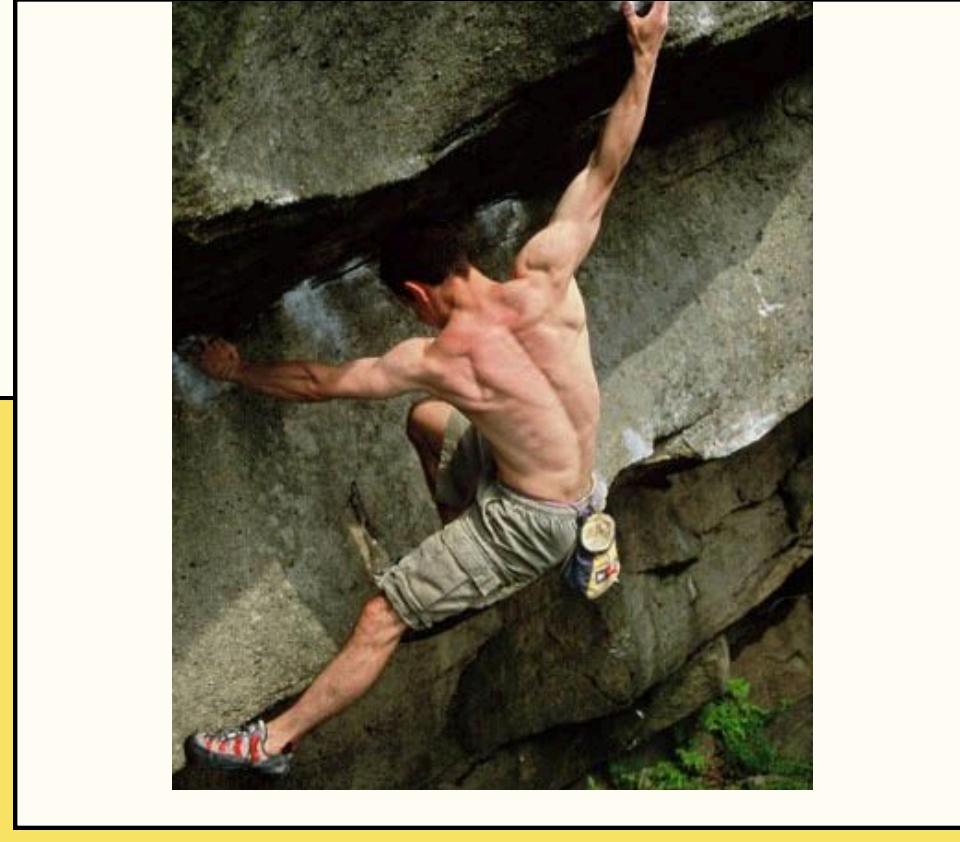
5



6



7



Nutrition –
taking in food

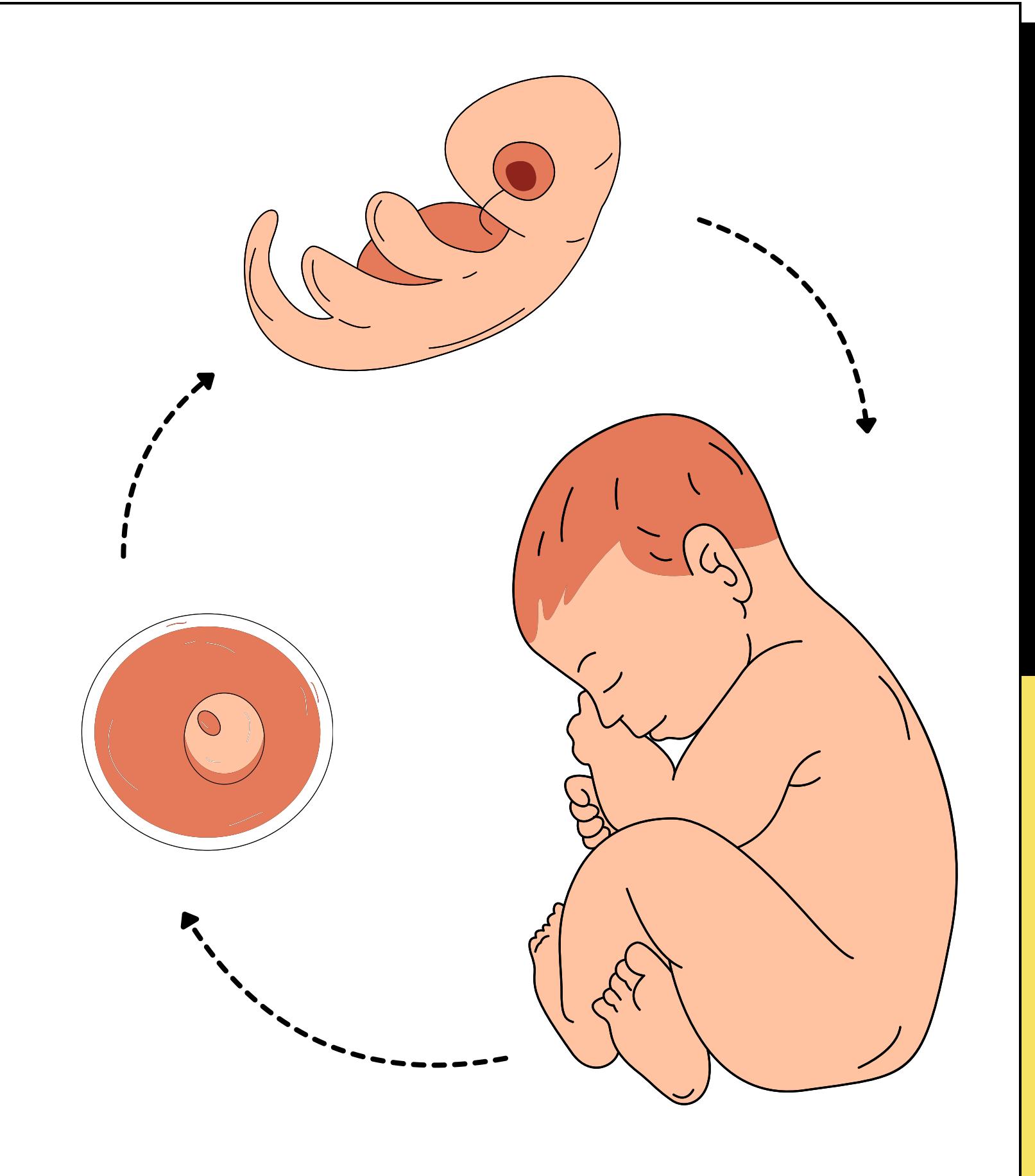
Growth –
increasing in size
due to food

Locomotion (Movement) –
ability to move

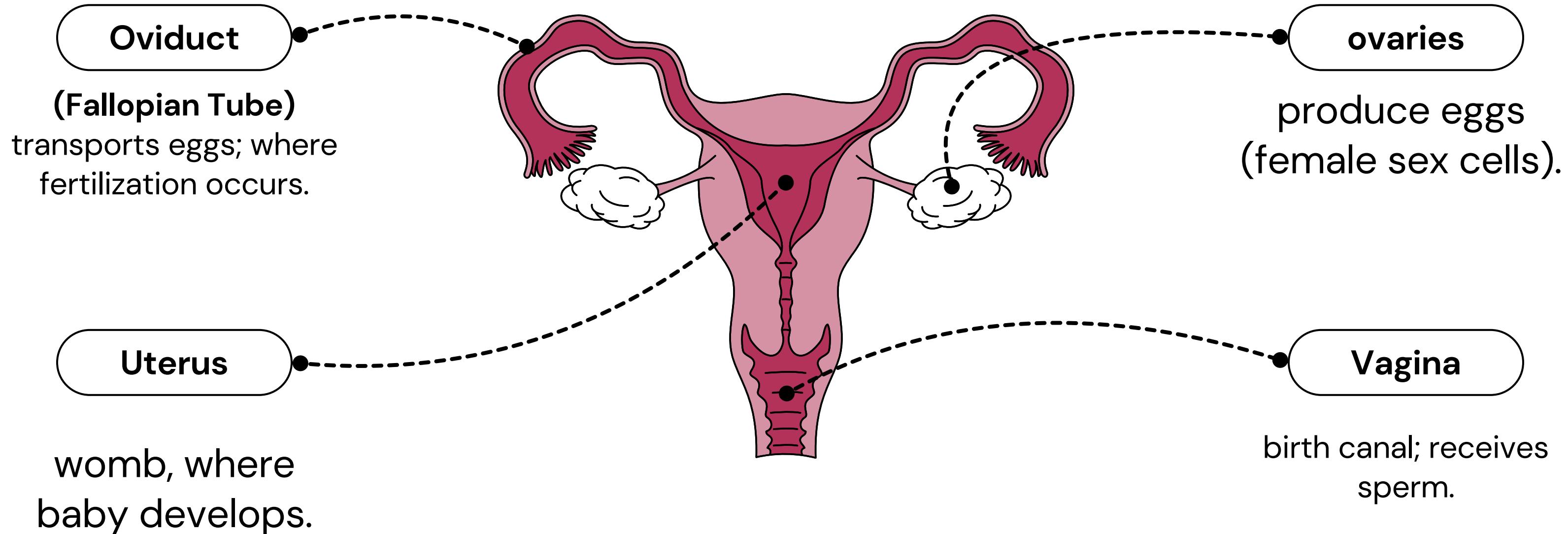
Reproduction

Process where living organisms produce new individuals (offspring).

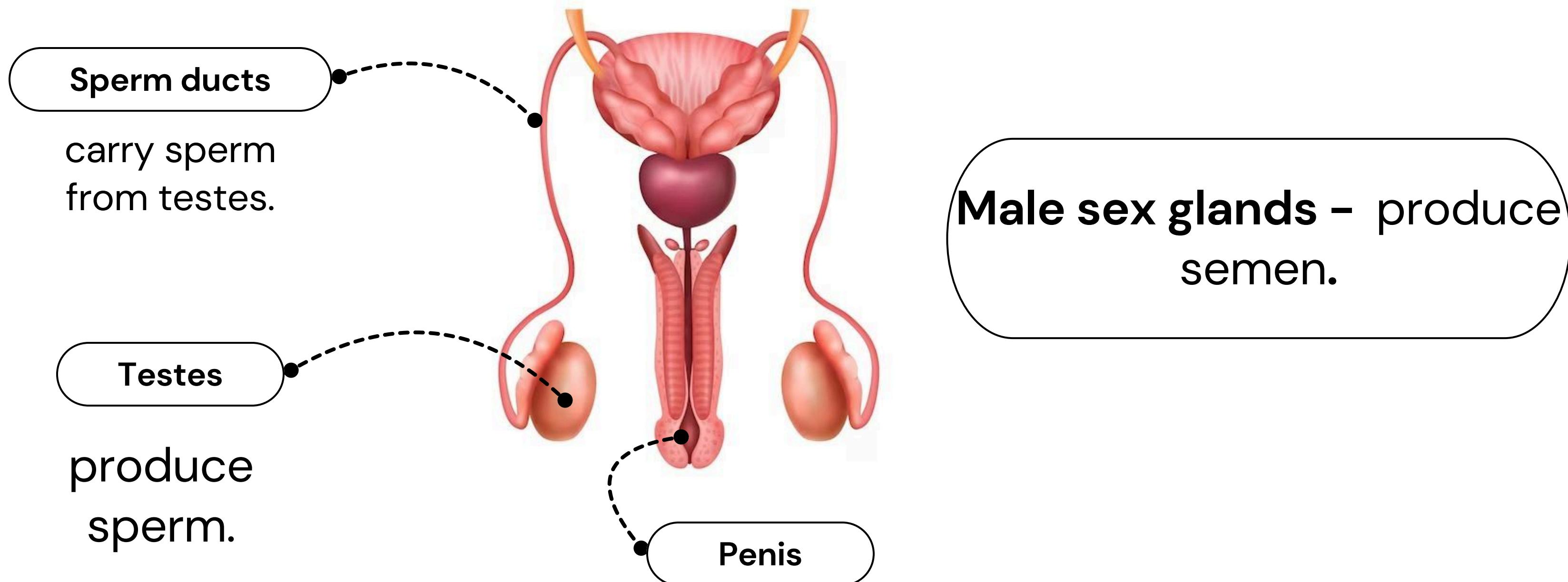
Involves fertilization → union of sperm and egg.



Human Reproductive System (Female)

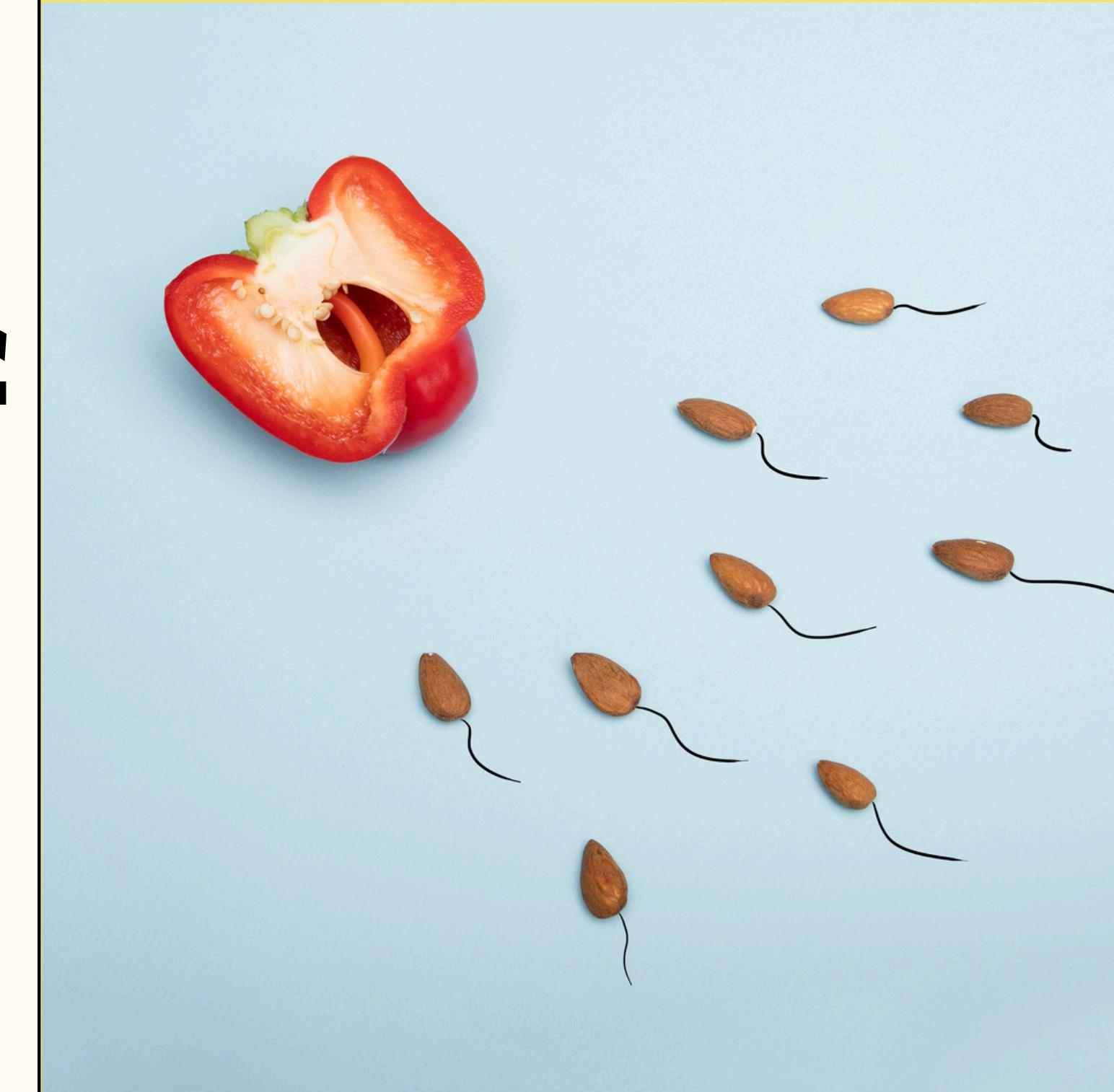


Male Reproductive Organs



Used for both the elimination of urine
from the body and the delivery of
sperm for sexual reproduction

The process of Fertilization



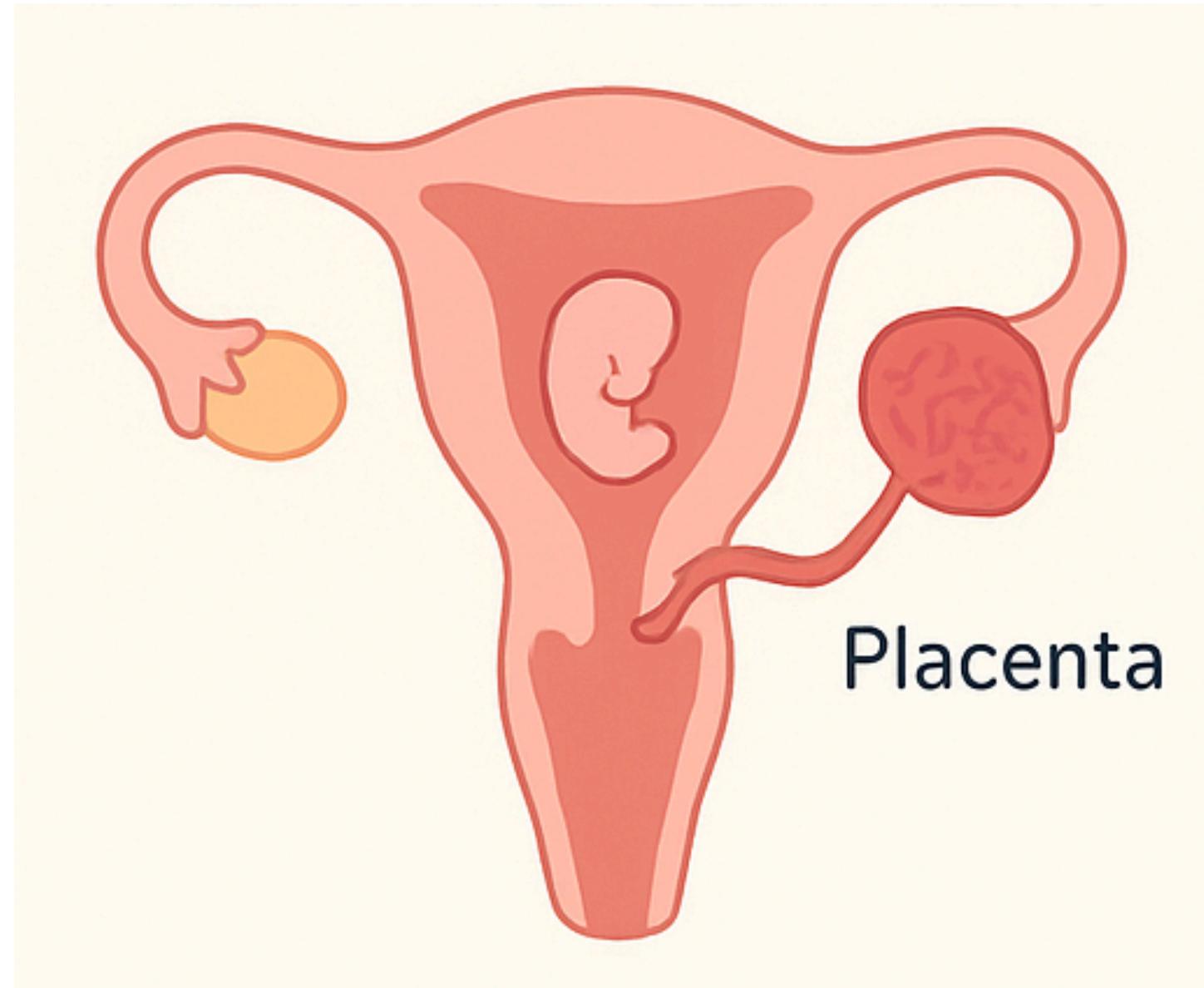
What happens:

- Sperm from male enters the **vagina** and swims to the **oviduct (fallopian tube)**.
- **One sperm** fertilizes the egg → forms a **zygote**.
- Zygote **divides into a ball of cells** and moves toward the uterus.



Embryo and Foetus Development

- Zygote attaches to the **uterus wall** → becomes an **embryo**.
- Sometimes **two embryos form** → **twins**.
- After **1 month**, embryo becomes a **foetus**.
- **Placenta** provides nutrients, **umbilical cord** connects mother and foetus.

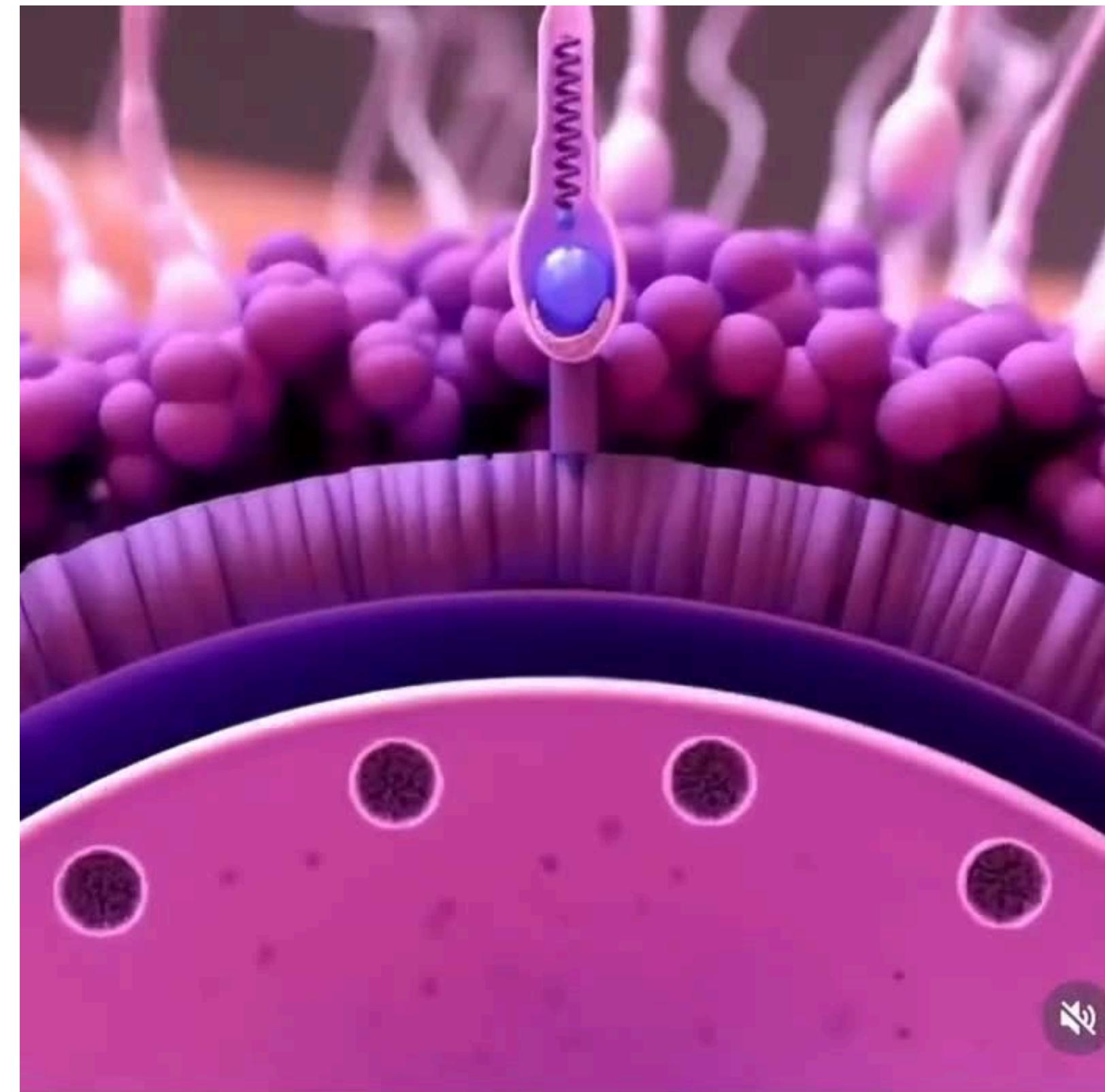


Foetus Growth and Gestation

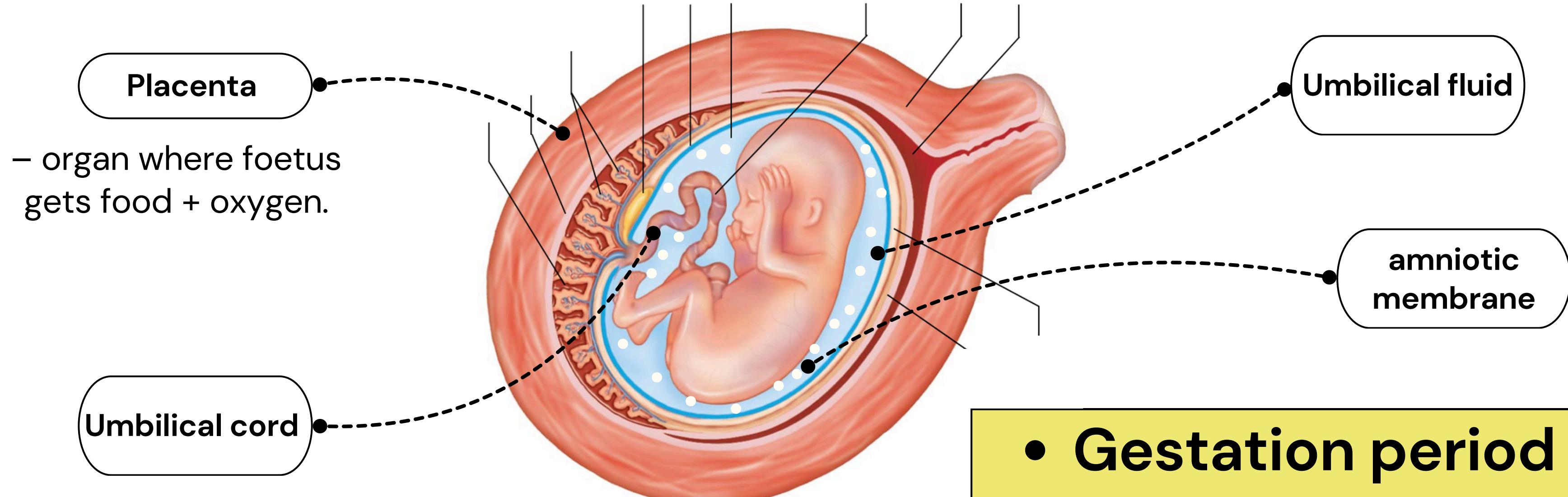
- By **the third month**, foetus is fully formed.
- Next **six months** → foetus grows to fill uterus.
- **Human gestation** = 9 months.
- Gestation **varies in animals** (e.g., elephants = 22 months, mice ≈ 20 days).



Here are some excellent educational videos that explain the process of human fertilization and early development:



Placenta & Gestation



- **Gestation period –**
 - 9 months in humans.
 - By 3rd month foetus fully formed; grows for next 6 months.

Labour & Birth

After 9 months
uterus
contracts

→ labour begins.

Amniotic sac
breaks

→ fluid released.

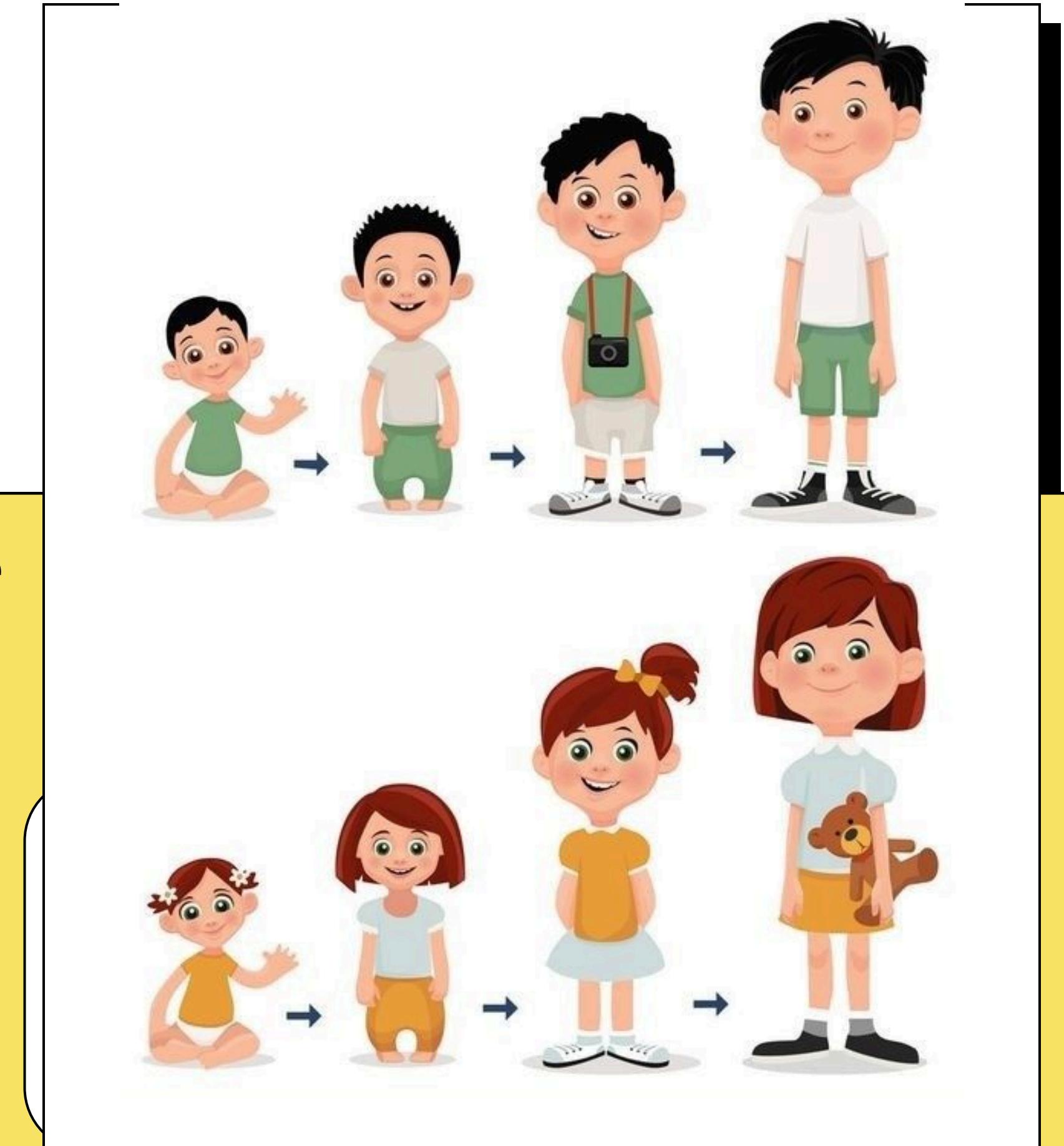
Strong
contractions
push baby out
through
vagina
Sac breaks

→ natural
delivery.

Puberty

Also called **adolescence**

- Body matures to become capable of reproduction.
- Boys (14–15 yrs) → **produce sperm.**
- Girls (13 yrs) → **ovaries release eggs.**
- Ovulation occurs every **28 days.**



Sexual Characteristics



Boys

Primary: sperm, sex organs

Girls

Primary: eggs, sex organs

Secondary: body hair, muscles, voice deepens, shoulders broaden

Secondary: body hair, softer voice, skin changes

Parental Care

- Mother **breastfeeds baby** → provides nutrition.
- Baby learns communication, language, and bonding.



Types of Fish

Fish have
**two main
types:**

**2. Cartilaginous
Fish** – skeleton
made of cartilage
(softer than
bone)

Examples: Sharks, Rays (sea
water)

1. Bony Fish –
skeleton
made of bone

Examples: Tilapia
(freshwater), Tuna &
Mackerel (sea water)

Key point: All
fish live in
water and
reproduce
there.

Reproduction in fish

- Fish gather in **shallow water** during the breeding season.
- Females release **eggs**, males **fertilize with sperm**.
- After fertilization, most fish **leave the eggs**; no parental care.
- Eggs hatch, and young fish grow **independently**.



Special Cases & Egg Numbers



Tilapia

- Mother (or sometimes father) carries eggs in **mouth until hatching**.
- Young stay close to parent for protection and nutrients for a short time.

Most fish lay large numbers of eggs:



~600 eggs

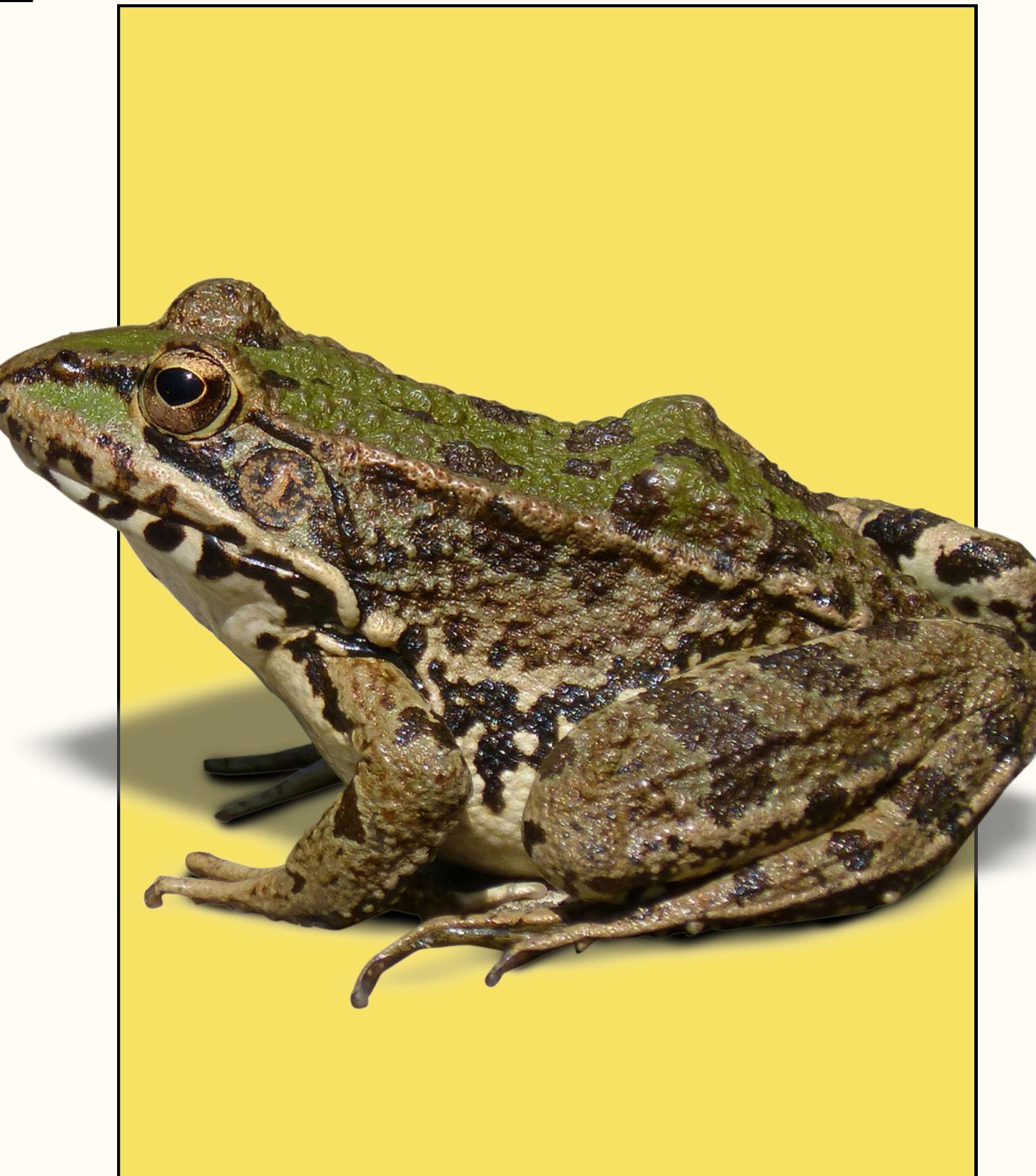


6–7 million eggs

- Many eggs do **not survive**, but some develop into young fish.

Reproduction in ~~Frogs~~

- Frogs reproduce in water, and this happens during the rainy season.
- The female's body swells with the eggs it carries.
- The male uses his vocal sacs to produce calling sounds that attract the female.



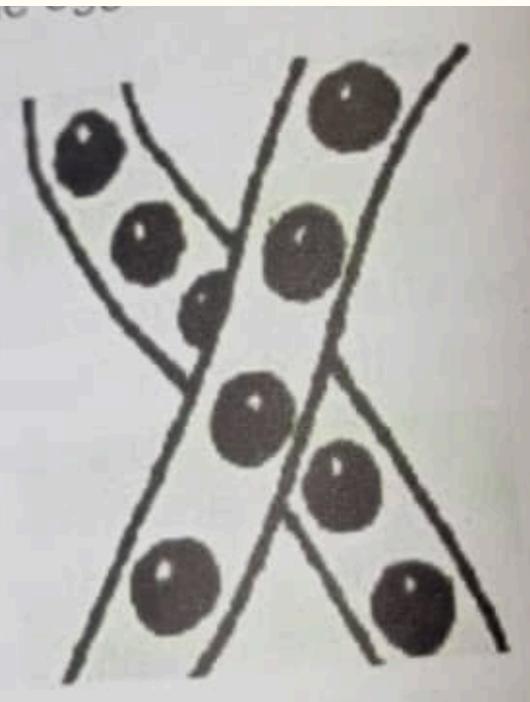
Fertilization Process

- The male climbs onto the female's back and places his front legs around her chest, holding her tightly.
- The pair may remain in this position for two to three days.
- Eventually, the female lays eggs in the water, while the male releases a fluid containing sperm.
- The sperm fertilizes the eggs.



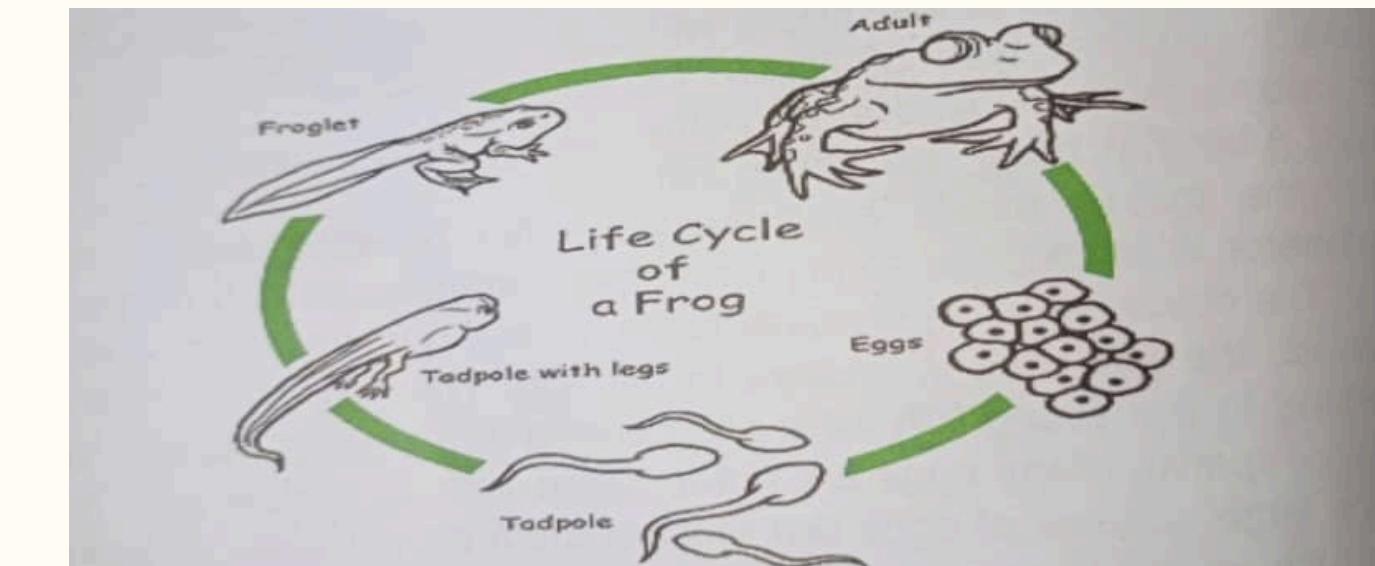
Development & Protection of Eggs

Protection of Eggs



- Each egg is surrounded by a jelly-like layer.
- This jelly layer helps the eggs stick together and prevents water currents from carrying them away.

Development



- After about 30 hours, the eggs hatch and tadpoles emerge.
- The tadpoles attach themselves to water plants, then start swimming and feeding on plants.
- The tadpoles breathe through gills.

Reproduction in Birds

- Reproduction in Birds
- Like other animals, birds reproduce sexually.
- Male birds produce sperm.
- Female birds produce eggs.
- Sperm fertilizes the eggs.



Stages of Reproduction in Birds

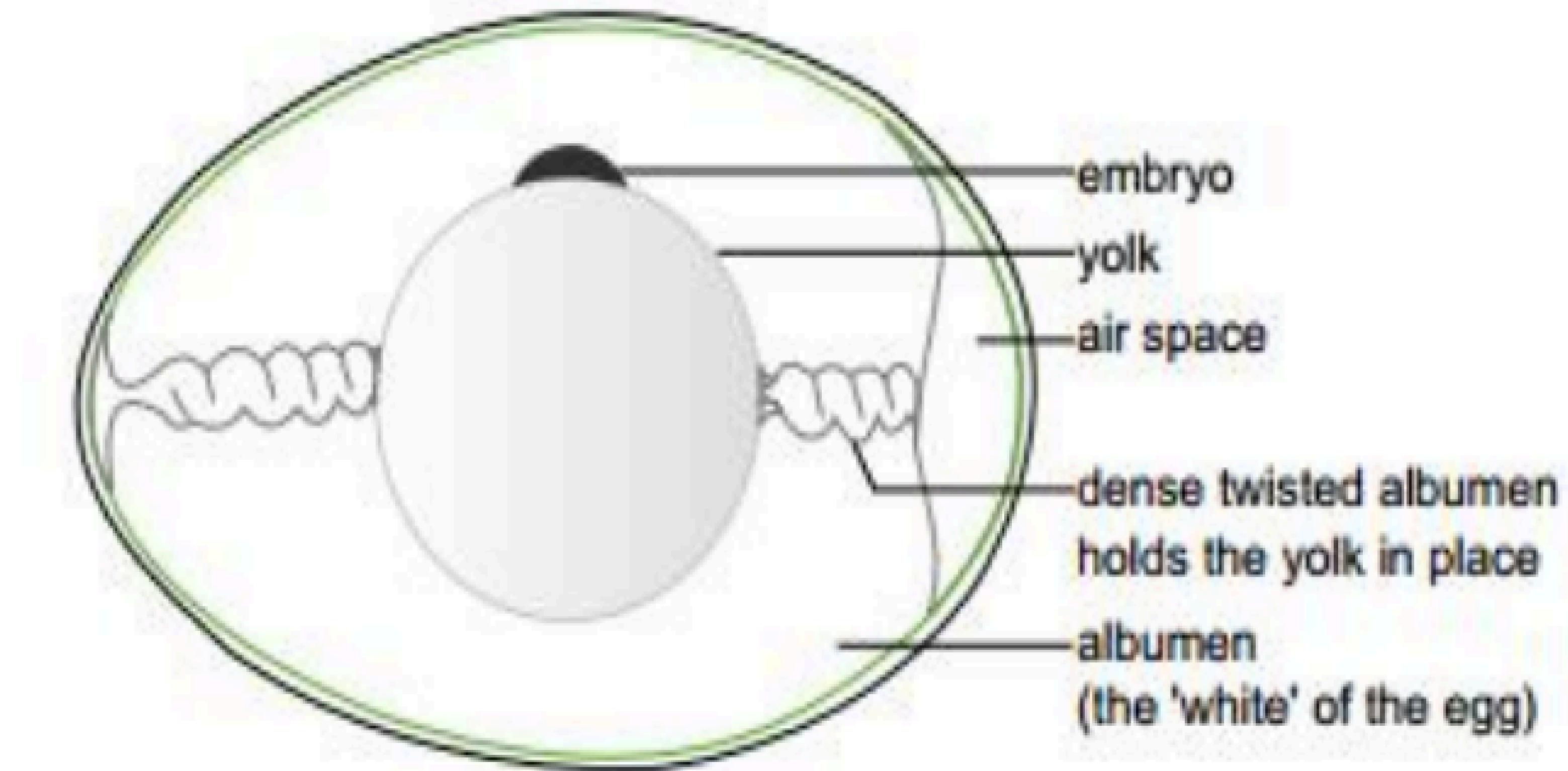
1. Male claims territory.
2. Singing to attract female.
3. Courtship (display & bonding).
4. Nest building.
5. Mating.
6. Egg laying in nest.
7. Incubation of eggs.
8. Hatching.
9. Parental care.



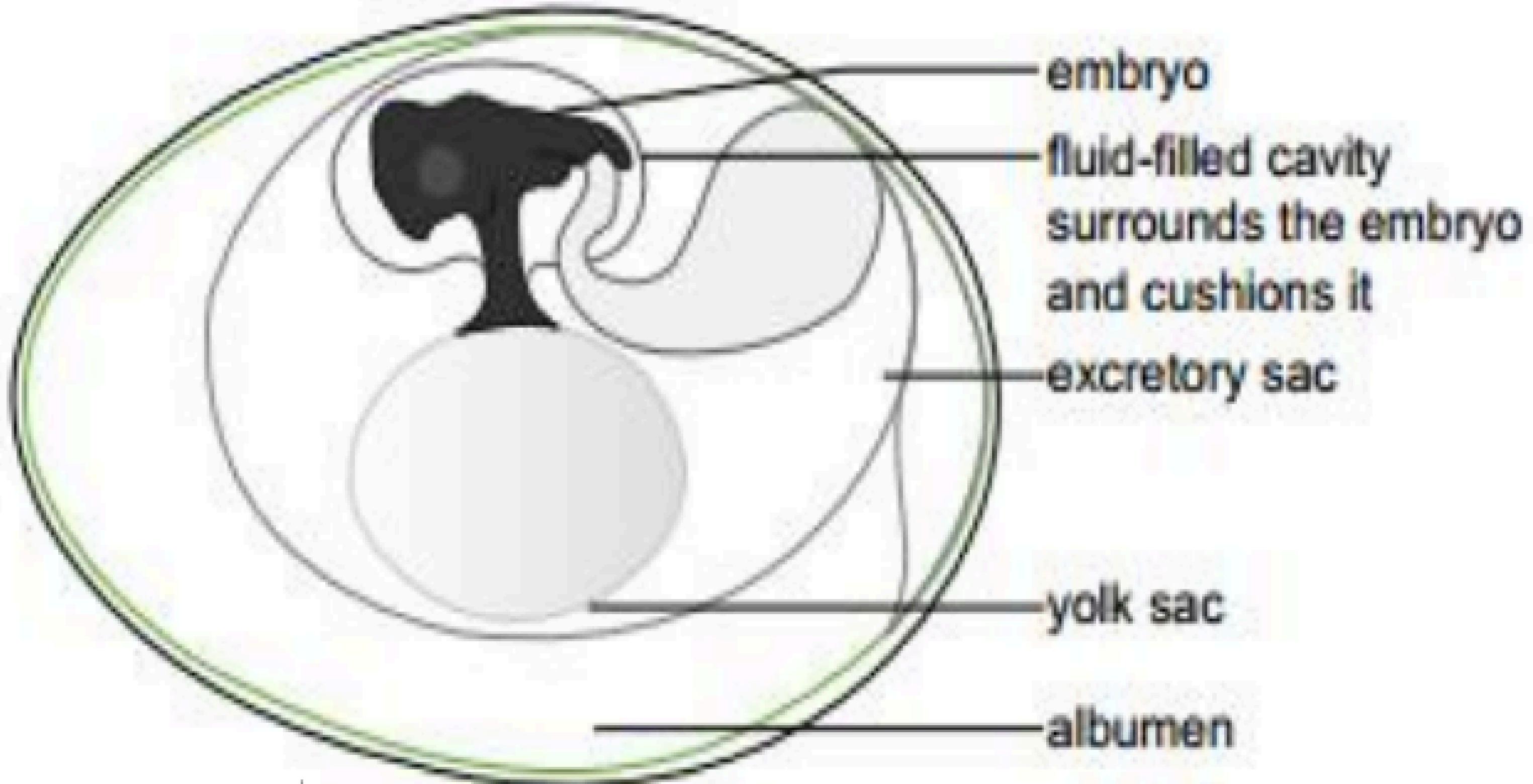
How Fertilization Occurs in Birds

1. Male birds do not have a penis, only a cloacal opening.
2. The male mounts the female and presses his cloaca against hers.
3. Sperm enters the female's body and fertilizes the eggs.
4. After fertilization, each egg passes through the female's oviduct and is covered with albumin (egg white) and the shell.
5. Eggs may be laid one after another.





Inside a bird's egg just after being laid



Inside a bird's egg after 3 days

Conclusion

- All living things share **7 characteristics**.
- **Reproduction** ensures continuation of life.
- Humans, fish, frogs, and birds all reproduce, but in **different ways**.

القرآن الكريم

12. Xaqiqa waxanu ka abuurnay isnak woxoga la
soo siibay oo dhooba ah. 13. Kadibna waxaan ka
yeellay cadhuuf (nutfah) meel adag oo ammaan ah.
14. Kadibna waxaan cadhuufta ka dhignay xinjir ,
markaasaan xinjirtana ka dhignay hilib yar , kadibna
waxaan hilibka yar ka dhignay laf, lafahaasna
waxaan ku labbisnay hilib, markaasaan ka abuurnay
khalqi kale oo kale duwan. Wxa khyrkiisu bartay
ILaahay, wax jaangoya ugu wanaagsan.

وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِّنْ طِينٍ
وَتُمَّ جَعَلْنَاهُ نُظْفَةً فِي قَرَارٍ مَّكِينٍ
ثُمَّ خَلَقْنَا النُّظْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ
مُضْغَةً فَخَلَقْنَا الْمُضْغَةَ عِظَامًا فَكَسَوْنَا
الْعِظَامَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ
اللَّهُ أَحْسَنُ الْخَالِقِينَ.

THANK YOU!