

# FEATURES OF ORGANISMS

## FEATURES POSSESSED BY ALL LIVING THINGS:

- **Cytoplasm**
- **Cell membrane**
- **Genetic material (DNA)**
- **Ribosomes for protein synthesis**
- **Enzymes involved in respiration**

**LINKS TO TOPIC WISE PRACTISE QUESTIONS:**

## MAIN FEATURES OF PLANTS AND ANIMALS

ANIMAL FEATURES	PLANT FEATURES
They are motile	They are non-motile.
They produce asexually as well as sexually	They usually reproduce sexually.
Animals are heterotrophs; they must consume living or dead <b>organisms</b> since they cannot synthesize their own food and can be carnivores, herbivores, omnivores, or parasites.	These contain photosynthetic pigments called chlorophyll in the plastids.
All animals are eukaryotic with cell membrane , but no cell walls and very small vacuoles, although mostly vacuoles are absent	These are multicellular eukaryotes with cell wall and vacuoles.



## APPLICATION BASED EXAMPLES OF MONOCOTS AND DICOTS:

1

Fungi are a difficult group to classify because they have features found in both animals and plants.

State one 'animal feature' and one 'plant feature' that fungi possess.

'animal feature' .....

.....

'plant feature' .....

..... [2]

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### Marking Scheme

**(animal feature)**

ref. to secretion of enzymes / heterotrophic nutrition ;

Ⓐ inability to photosynthesise

ref. to production of glycogen ;

ref. to presence of chitin ;

[max. 1]

**(plant feature)**

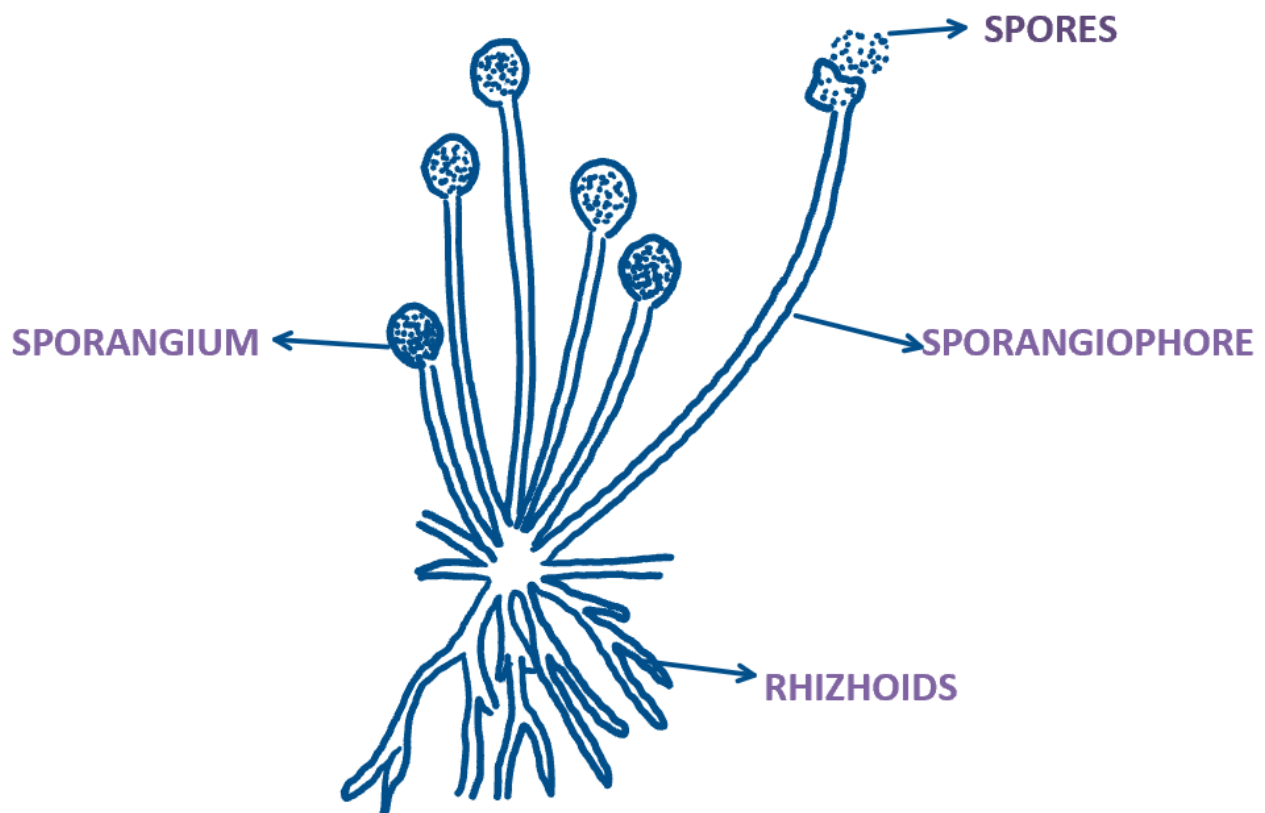
presence of cell wall

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## MAIN FEATURES OF FUNGUS:

- No chlorophyll – non photosynthetic.
- Most multicellular (hyphae) – some unicellular (yeast)
- Non-motile.
- Cell walls made of chitin instead of cellulose like that of a plant.

## BODY PARTS OF A FUNGUS



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## **MAIN FEATURES OF PROKARYOTES:**

- 1. The genetic material (DNA) is localized to a region called the nucleoid which has no surrounding membrane.**
- 2. The cell contains large numbers of ribosomes that are a site for protein synthesis.**
- 3. Outside the plasma membrane of most prokaryotes is a rigid wall that gives shape to the organism. Peptidoglycan makes up the bacterial cell-walls. Sometimes there is also an outer capsule.**
- 4. Some bacteria have flagella which are used for locomotion. They also have pili, which is used to pull two cells in close contact, and to facilitate the transfer of genetic material.**

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## **MAIN FEATURES OF PROTOCTISTS:**

- They are eukaryotic, which means they have a nucleus.
- Most have mitochondria.
- They can be parasites.
- They all prefer aquatic or moist environments.

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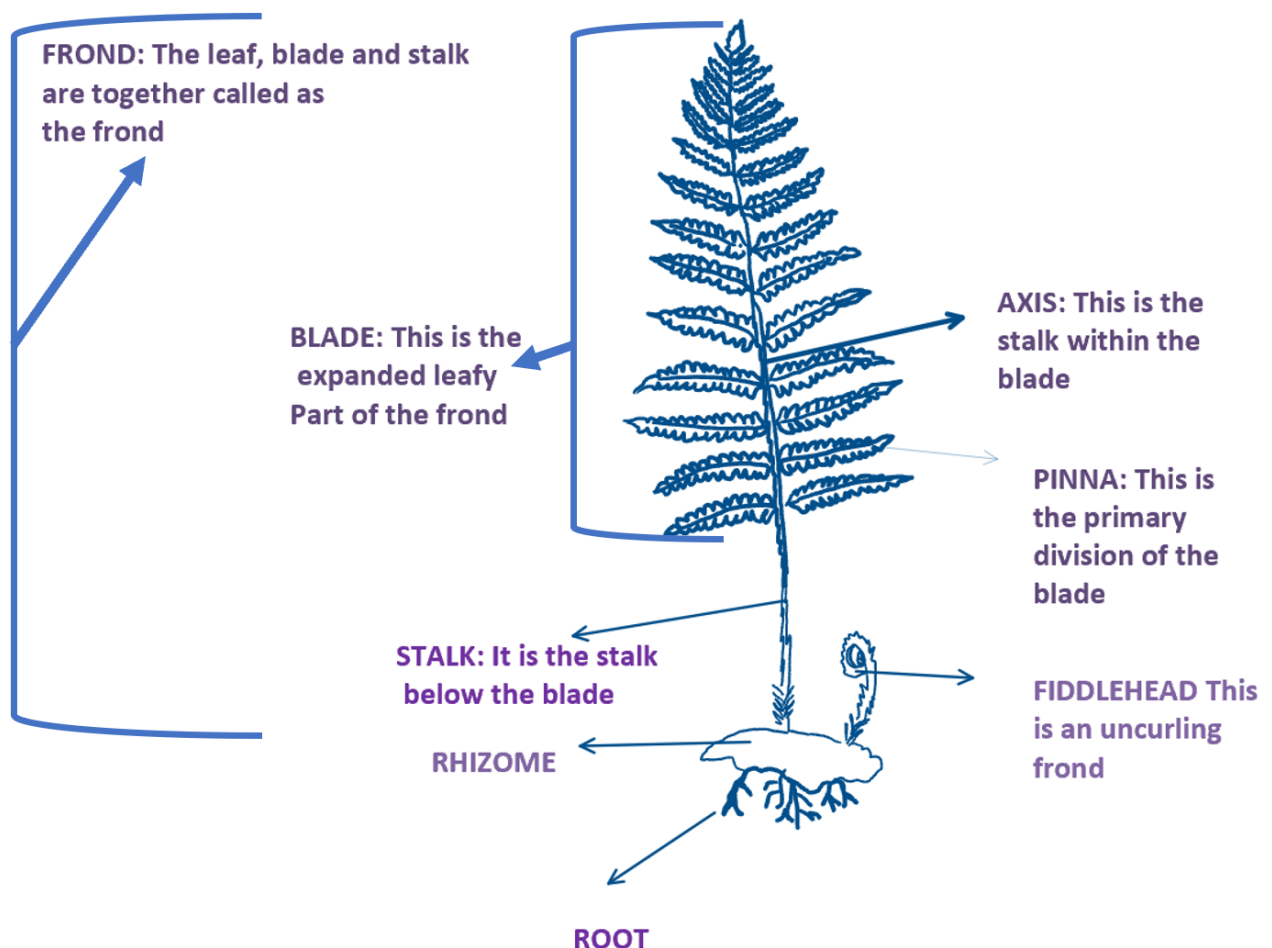
## MAIN FEATURES OF THE FERNS:

- They are vascular plants.
- They have roots and leaves (called fronds) and in some cases they have true stems.
- Ferns and fern allies are Pteridophytes.

### NOTE:

#### Pteridophytes:

Pteridophytes are vascular plants and have leaves (known as fronds), roots and sometimes true stems, and tree ferns have full trunks.

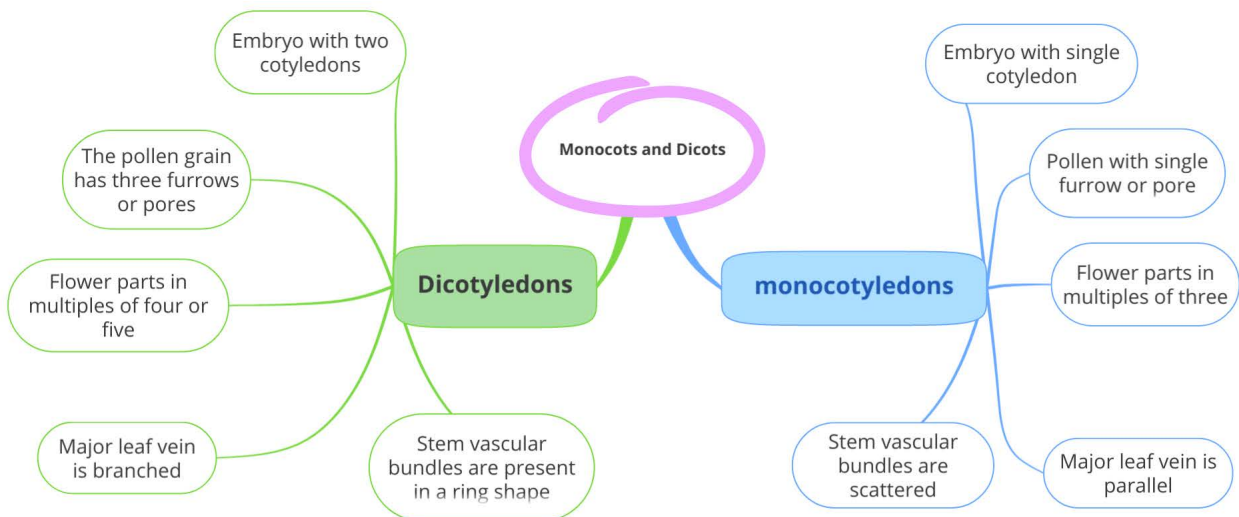


## MAIN FEATURES OF THE FLOWERING PLANTS:

- MONOCOTYLEDONS
- DICOTYLEDONS

## FEATURES OF MONOCOTYLEDONS AND DICOTYLEDONS:

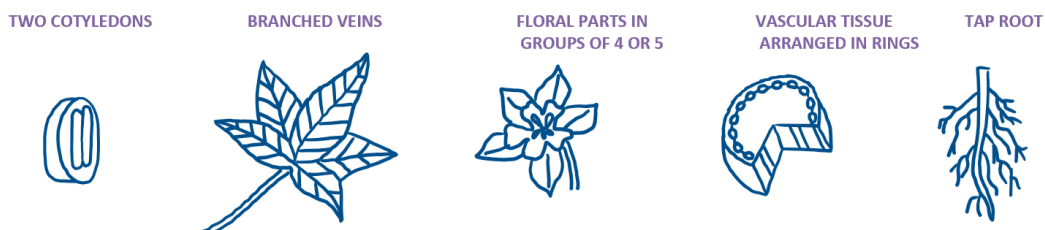
MONOCOTYLEDONS	DICOTYLEDONS
Monocots have one cotyledon	Dicots have two cotyledons
Leaf veins are parallel	Leaf veins are reticulate
Roots are adventitious	Roots develop from radical
Pollen has a single furrow or pore	Pollens have three furrows or pores
Flower parts are in multiples of three	Flower parts in multiples of four or five



### MONOCOT FEATURES



### DICOT FEATURES





## APPLICATION BASED EXAMPLES OF MONOCOTS AND DICOTS:

- 1 Fig. 1.1A shows a buttercup, *Ranunculus cymbalaria*. Fig. 1.1B shows details of a flower of the same plant.



Fig. 1.1

- (a) Explain, using only features visible in Fig. 1.1, why *Ranunculus cymbalaria* is classified as a dicotyledonous plant rather than as a monocotyledonous plant.

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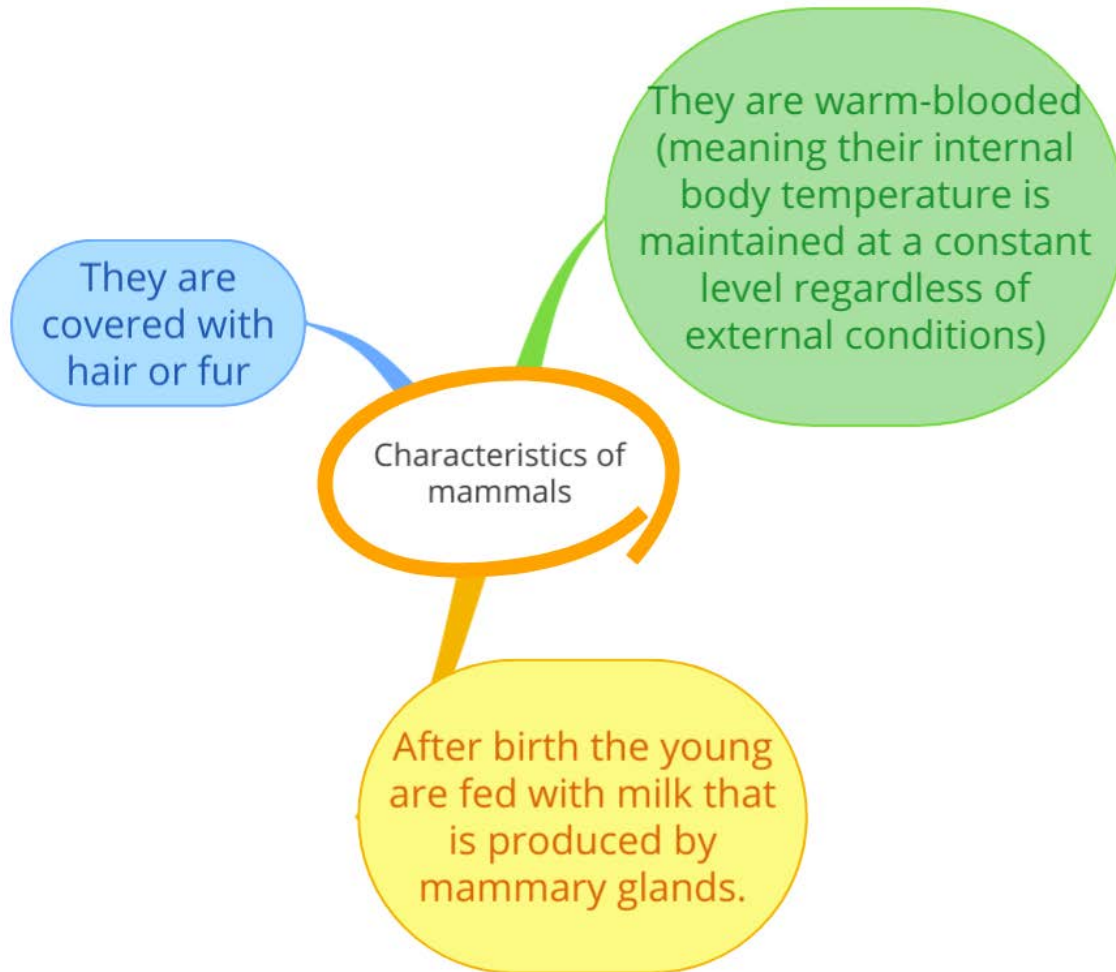
..... [2]

### -----Marking Scheme-----

(a)	broad leaves / <i>Ranunculus</i> does not have narrow leaves / AW ; branched veins / not parallel veins ; flower parts, in 5s / not in 3s ; R 'flowers in fives'	A wide / large surface area A net(work) of veins / reticulate I two cotyledons [max 2]
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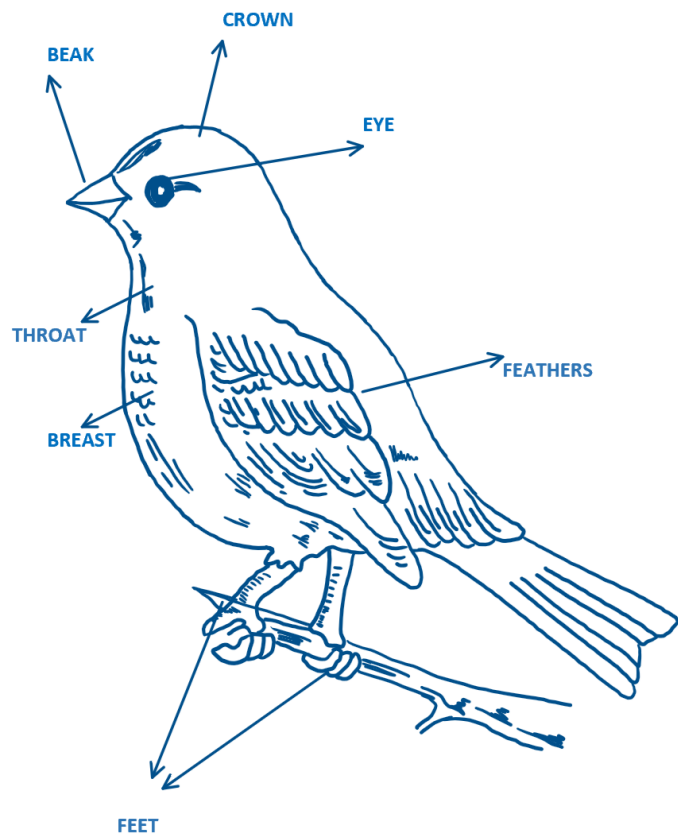
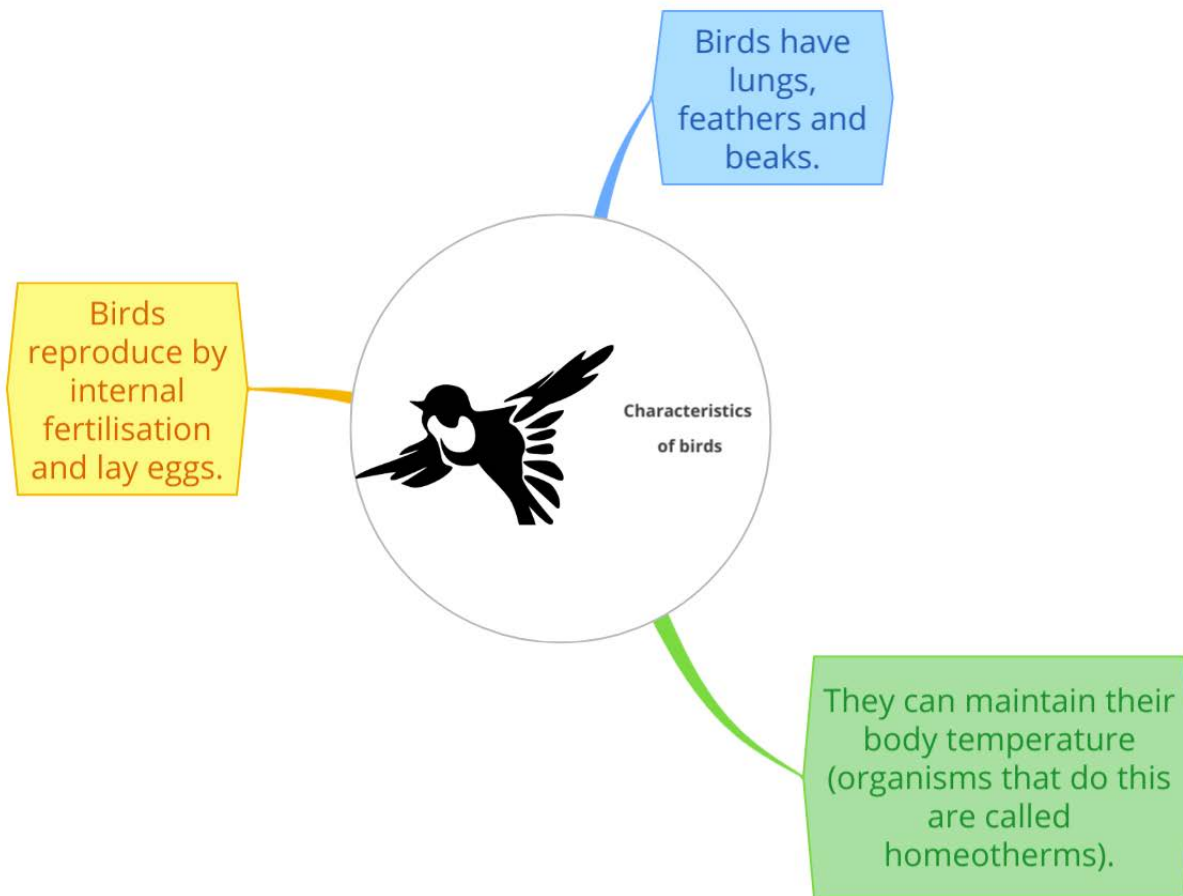
# FEATURES OF THE MAIN GROUPS OF VERTEBRATES

## FEATURES OF MAMMALS:

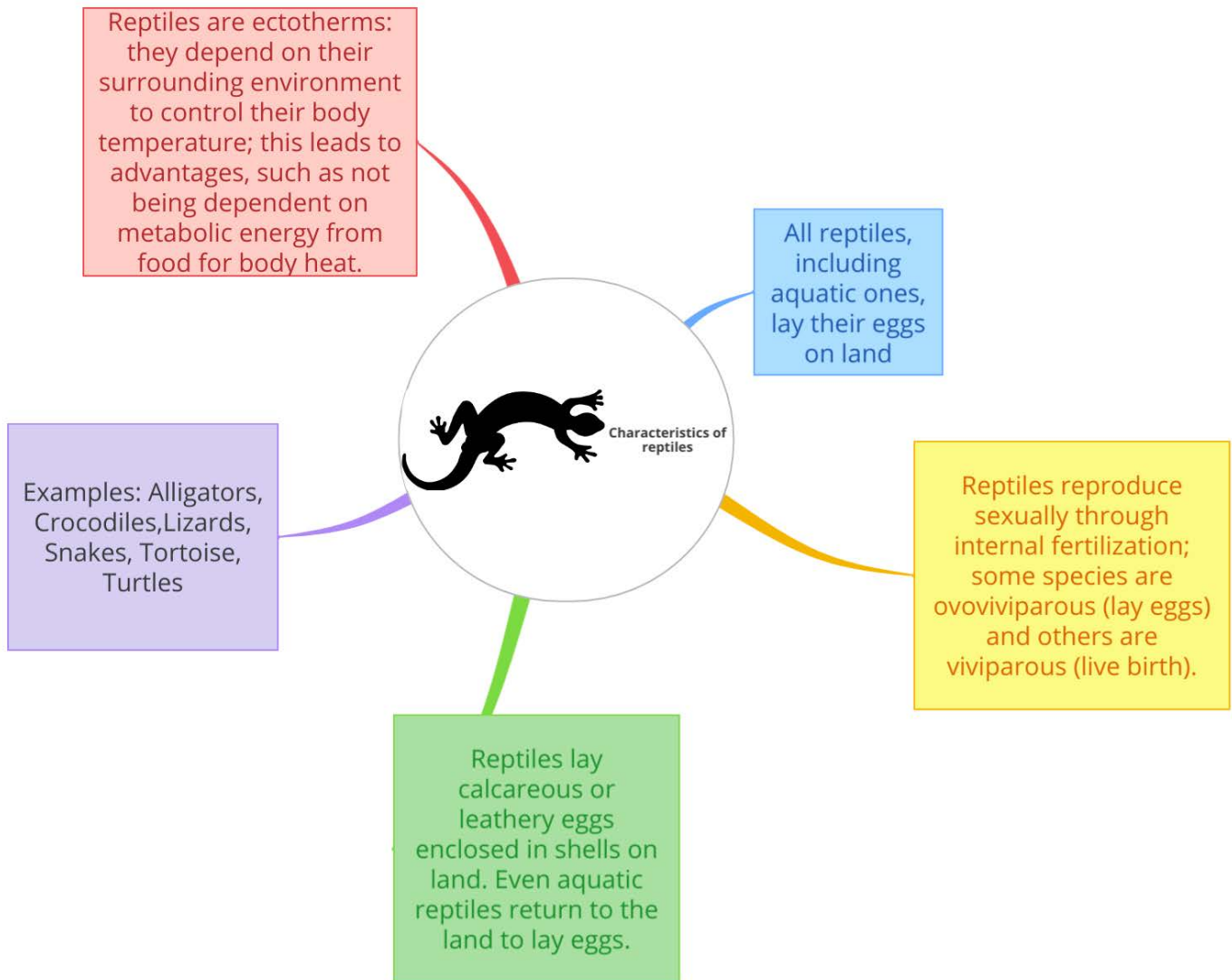


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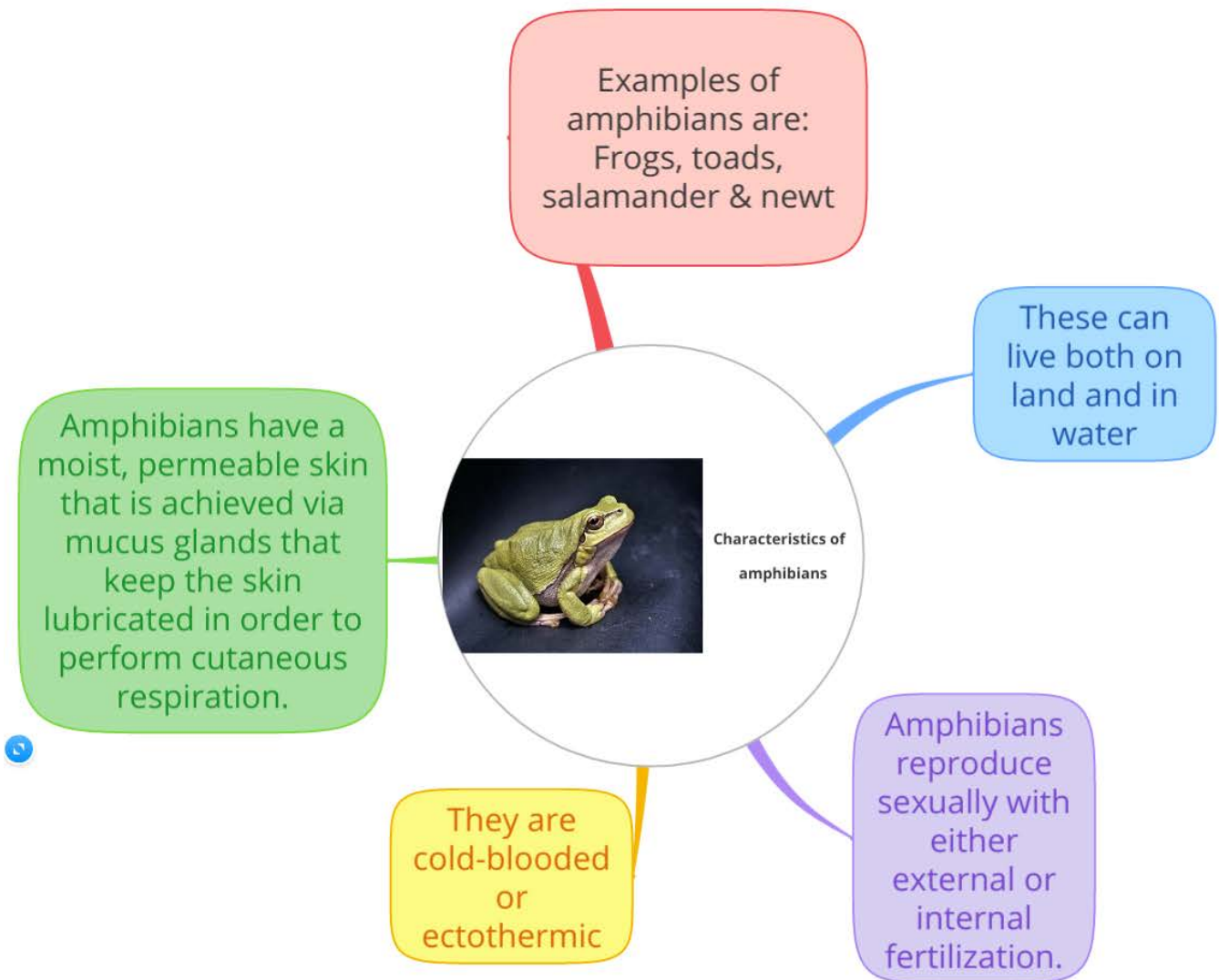
# FEATURES OF BIRDS:



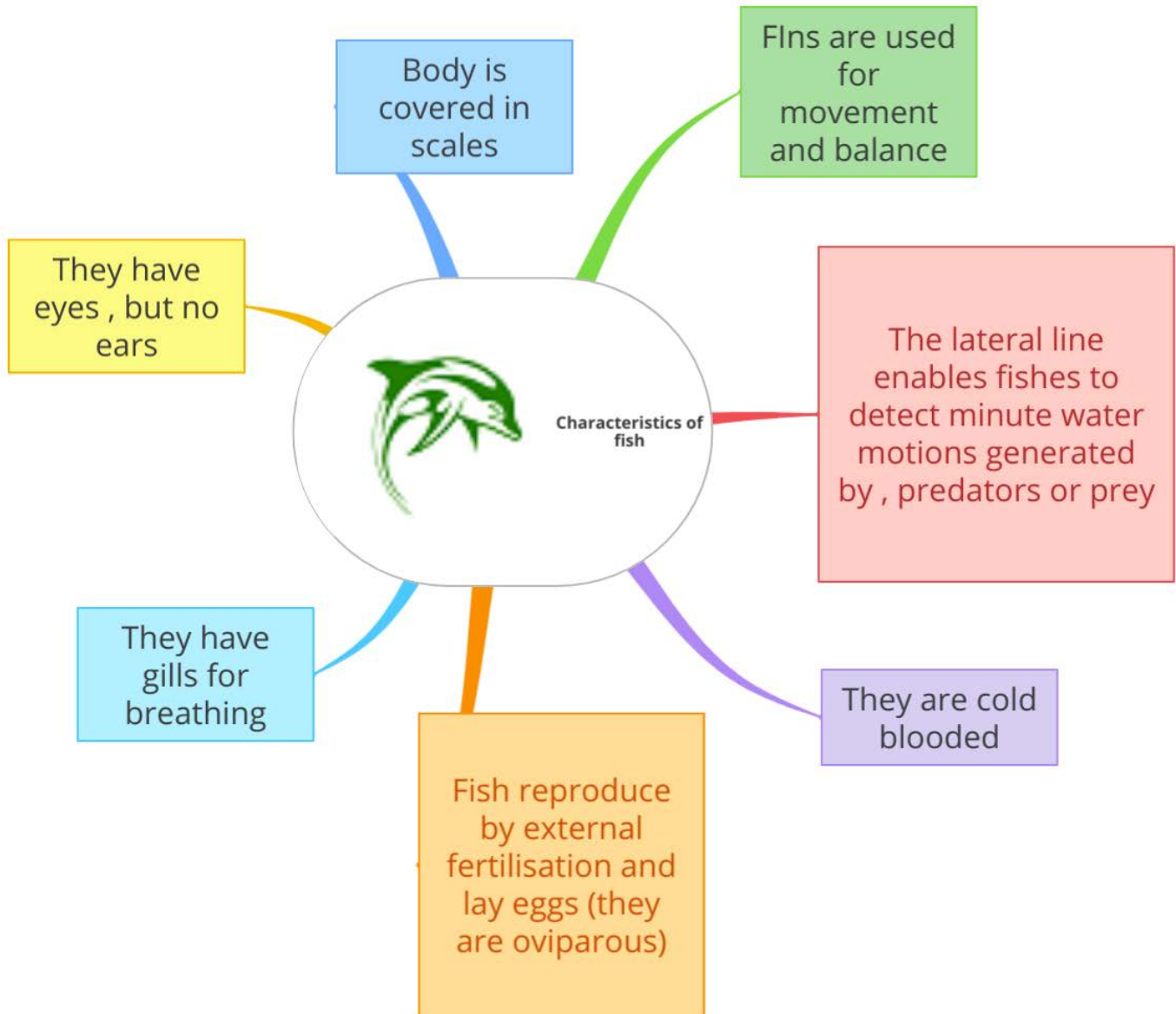
## FEATURES OF REPTILES:



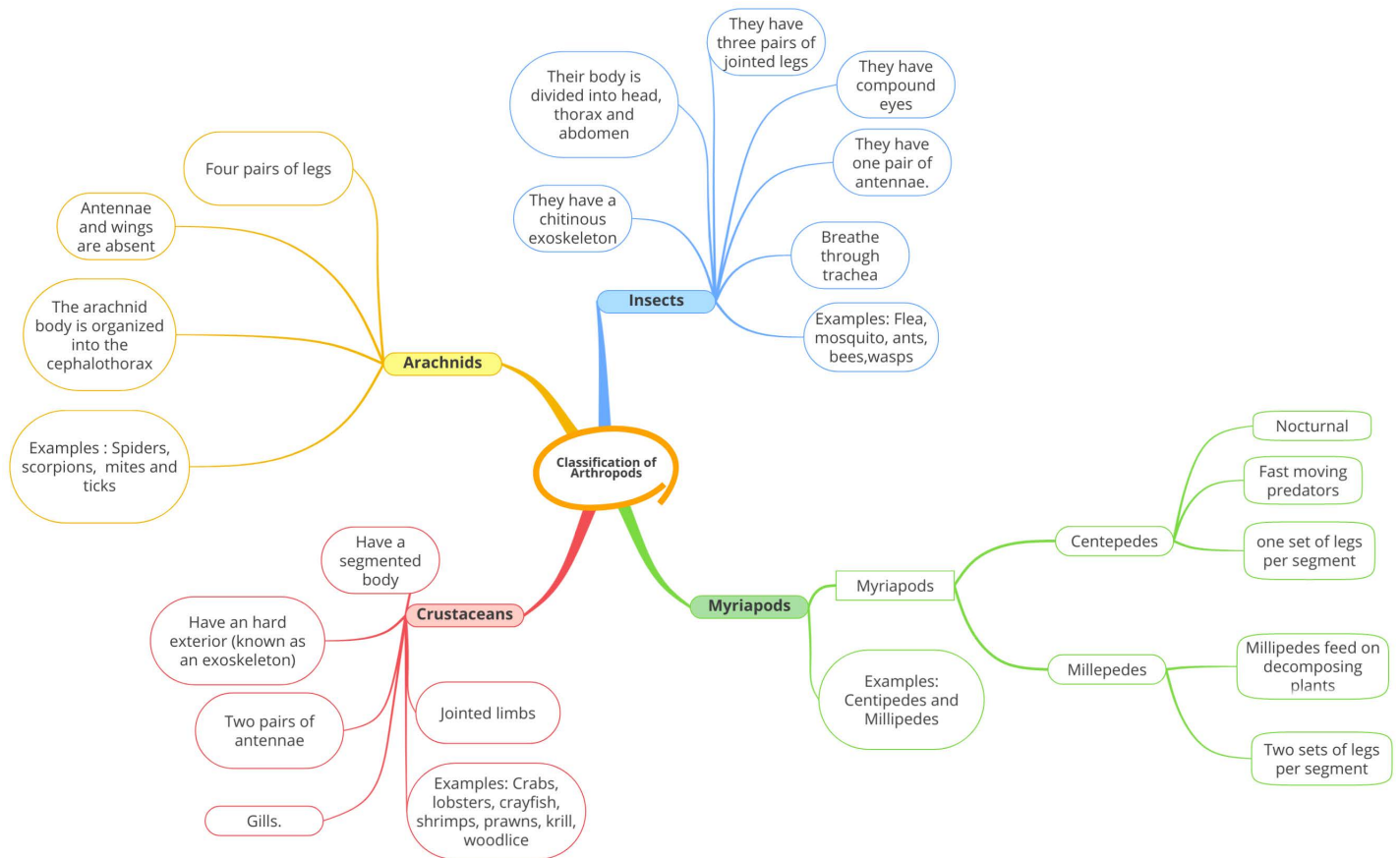
## FEATURES OF AMPHIBIANS:



## FEATURES OF FISH:

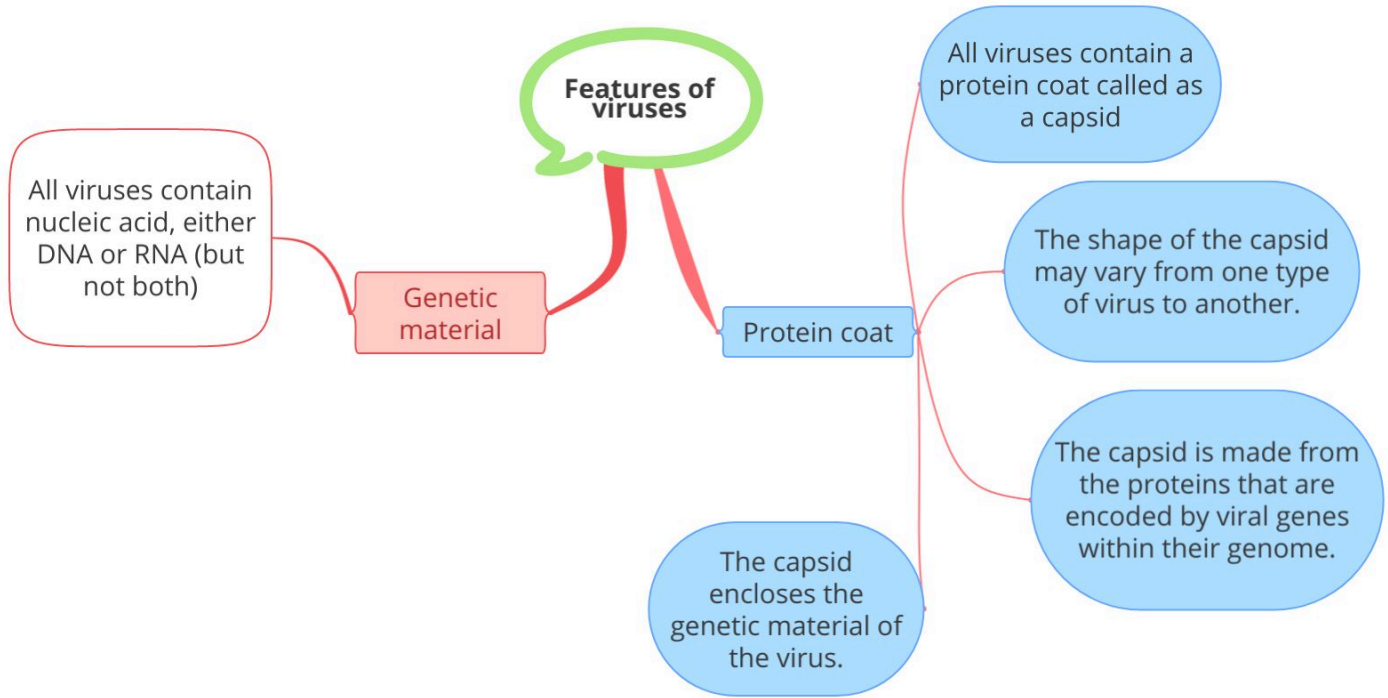


# CLASSIFICATION OF ARTHROPODS:



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## FEATURES OF A VIRUS:



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