Biologie animale

ED n°4

Anatomie comparée

Appareil circulatoire

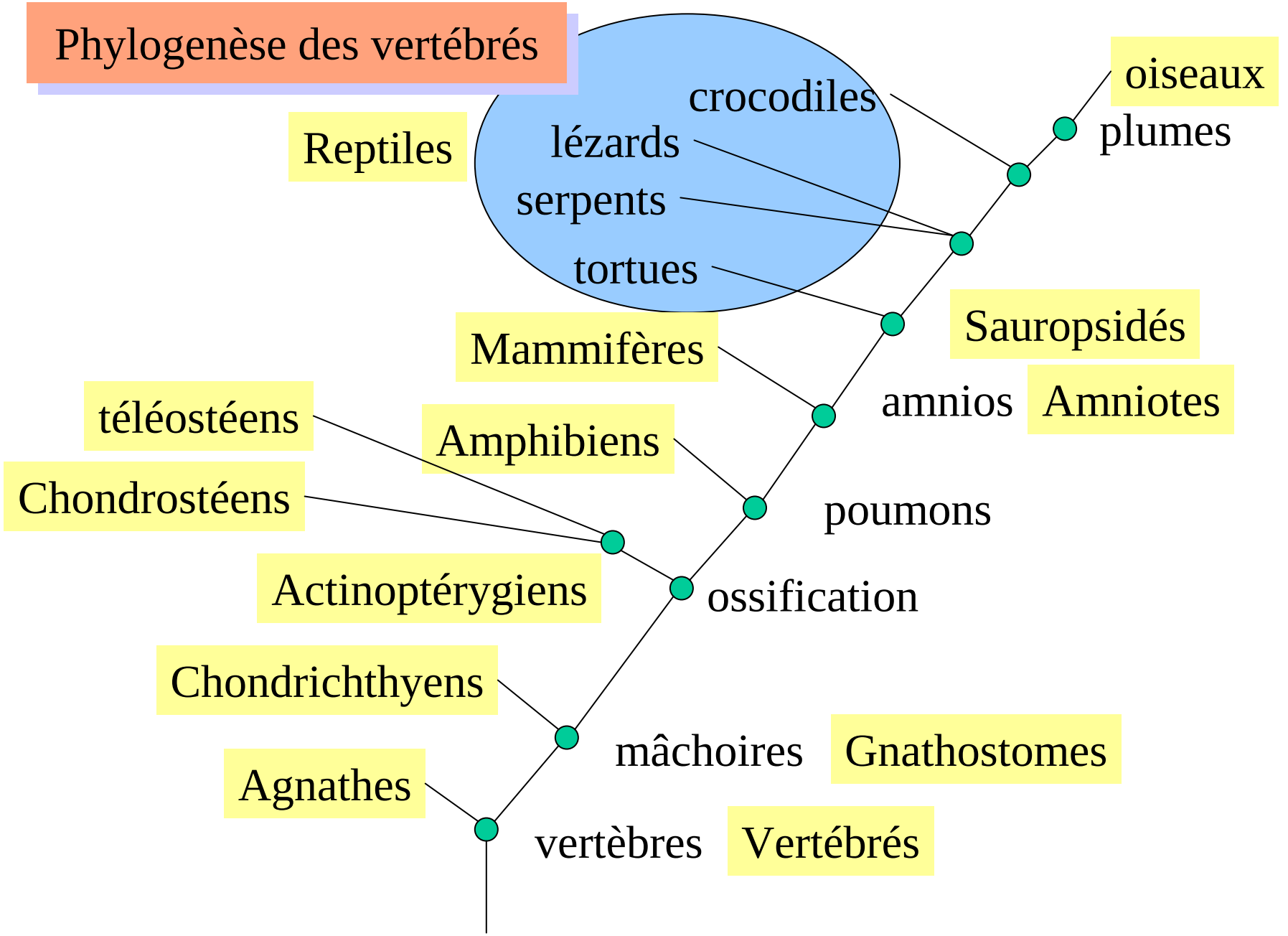
Anatomie comparée

- *L'anatomie comparée étudie l'évolution d'un appareil au cours de l'évolution des vertébrés*

- *ED d'aujourd'hui : appareil circulatoire*

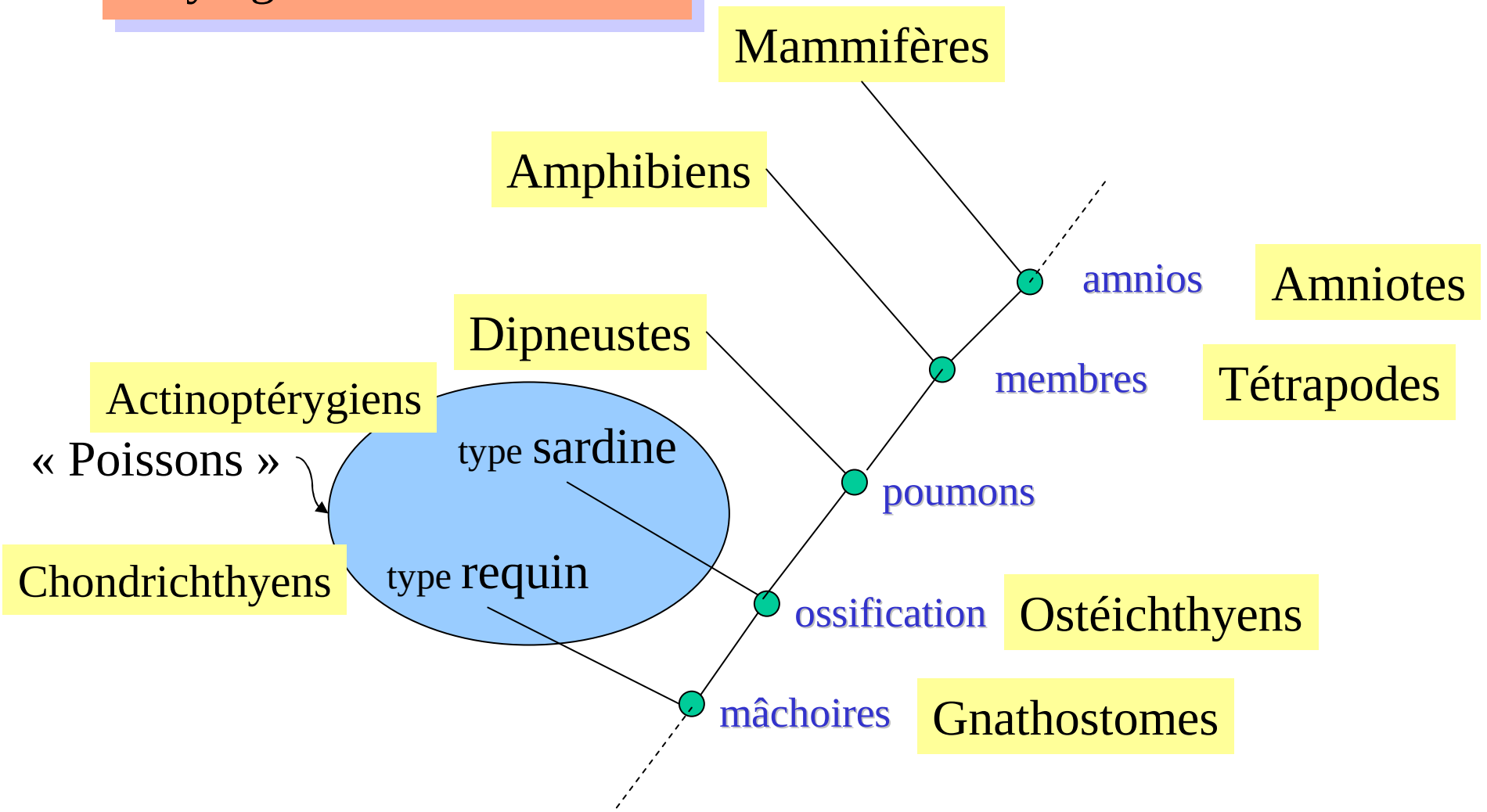
Rappel

Phylogenèse des vertébrés



Rappel

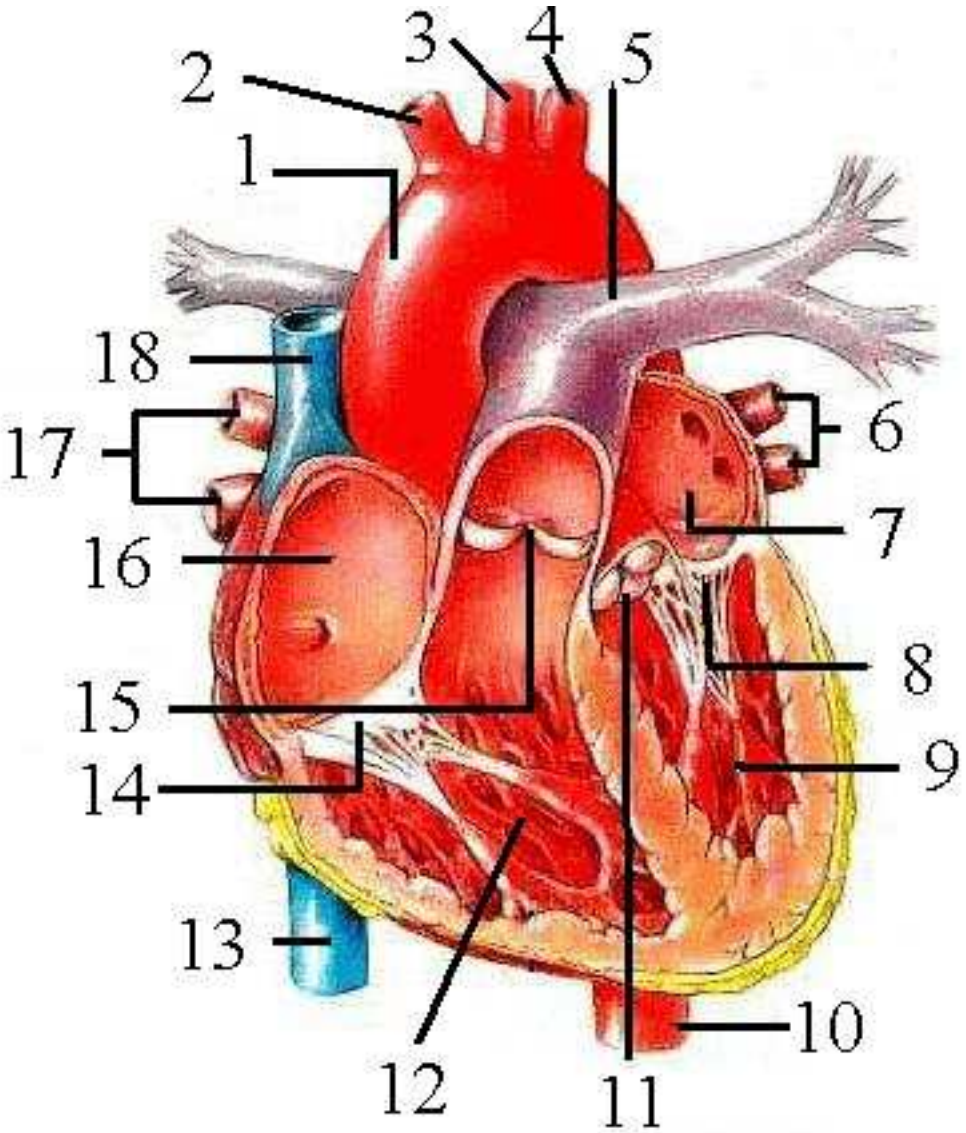
Phylogenèse des vertébrés



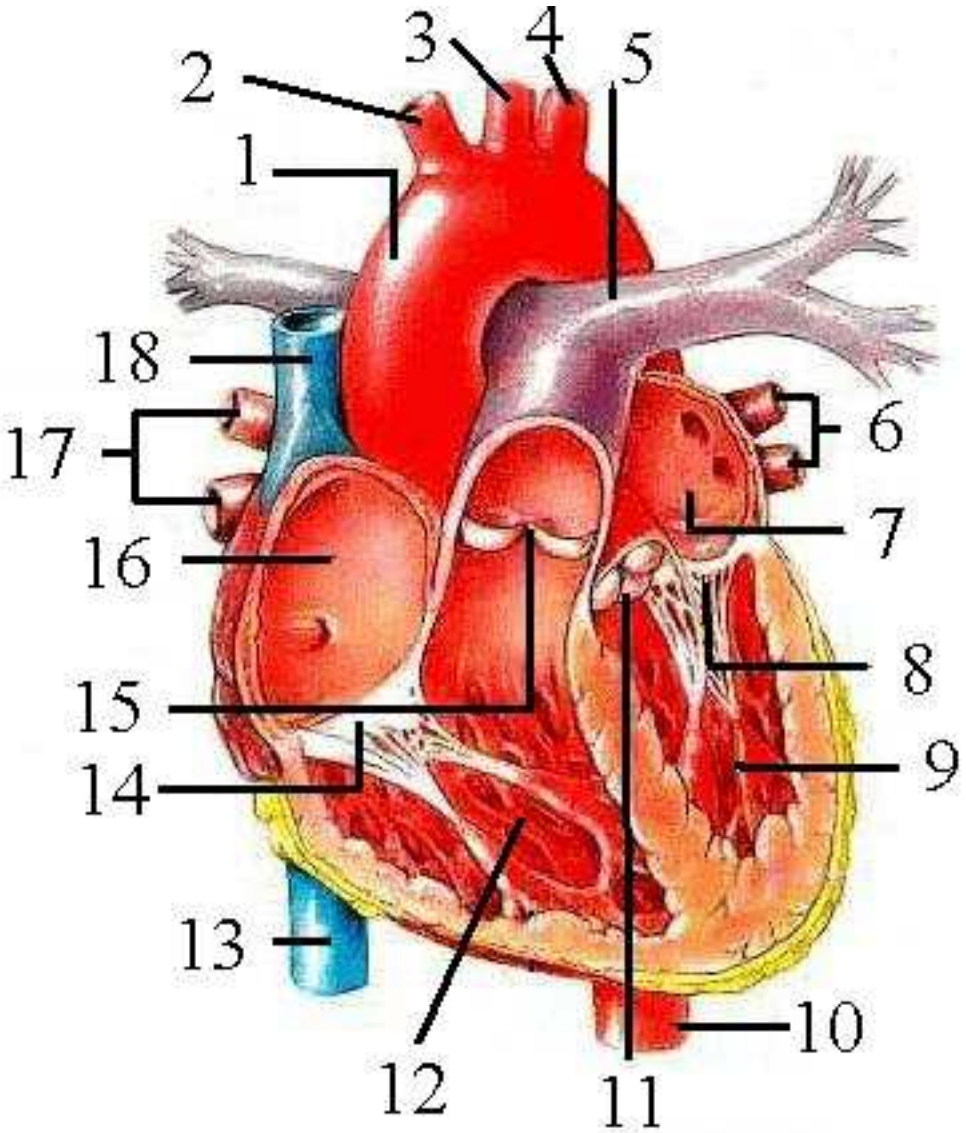
Plan

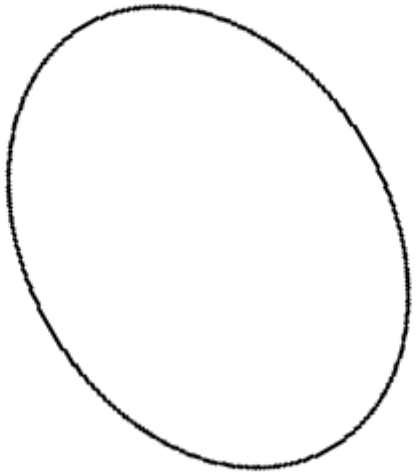
- *Partir de ce que vous connaissez*
  - *l'homme*
- *Décrire l'appareil circulatoire du poisson*
- *comprendre la transformation de l'appareil circulatoire, depuis les poissons jusqu'aux oiseaux et aux mammifères*
  - *en fonction du passage de la vie aquatique à la vie aérienne*

Restitution de connaissances



Dessin étape 1





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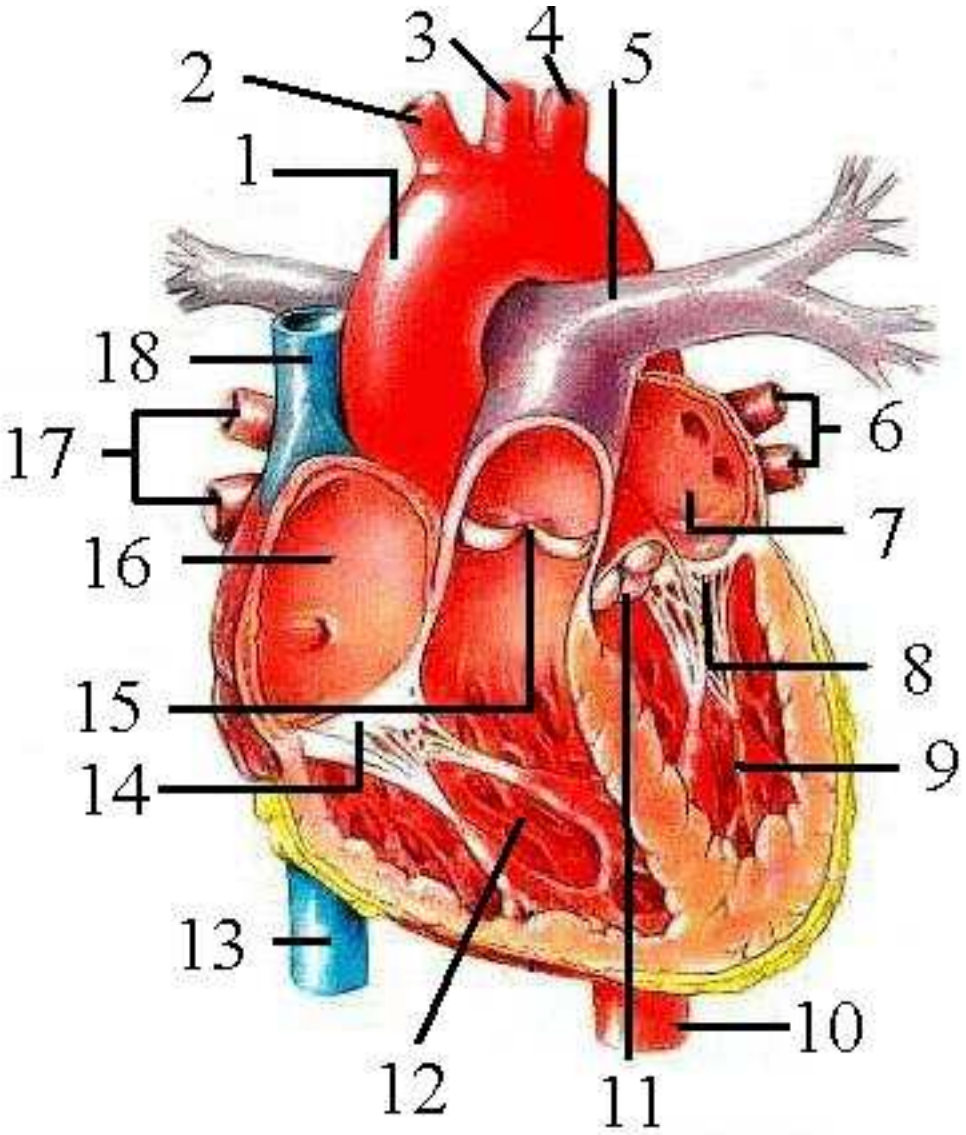
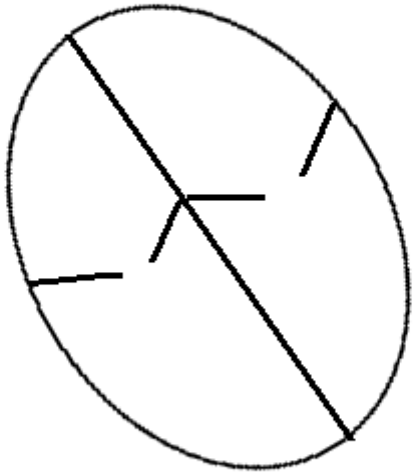
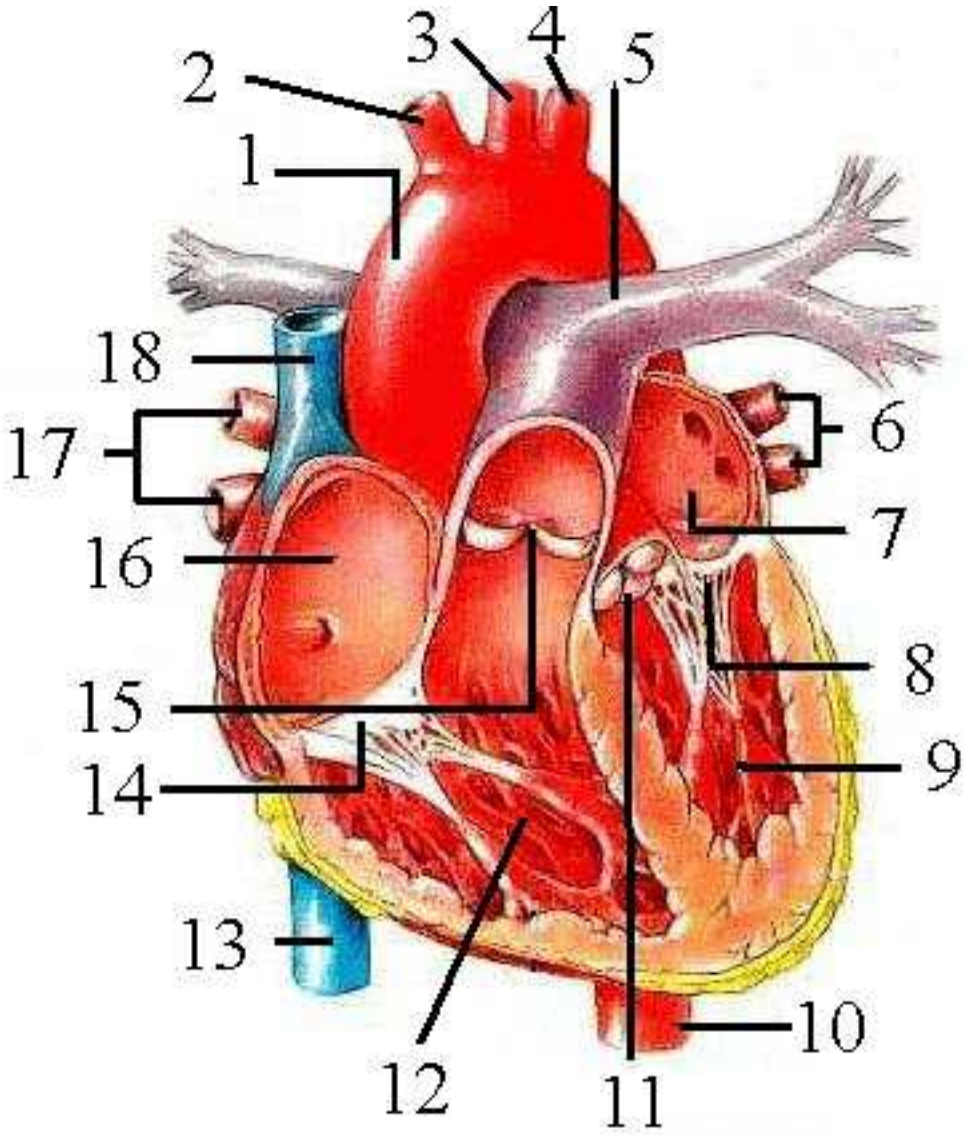
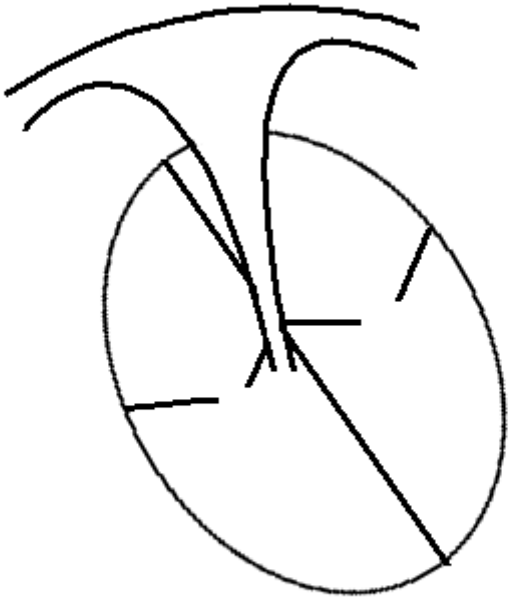




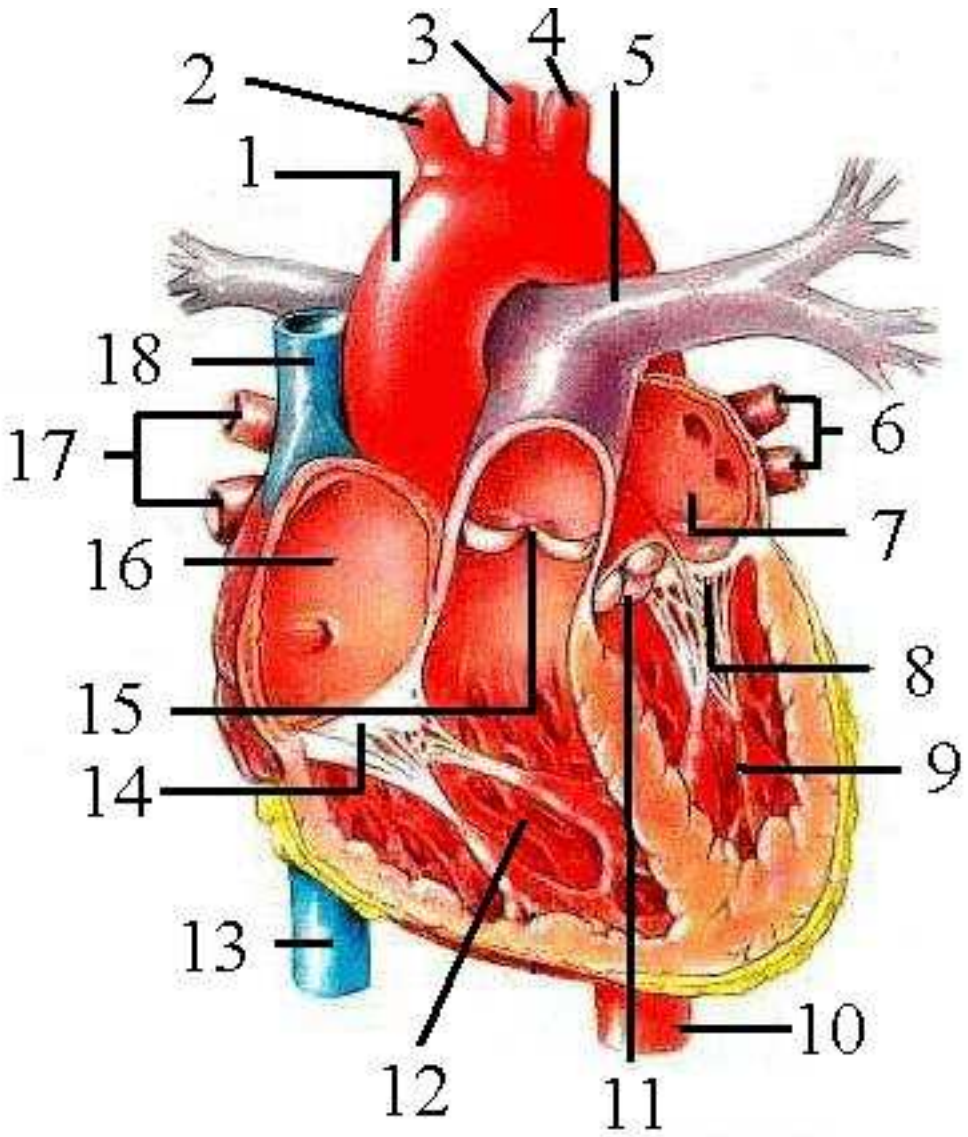
Dessin étape 3

+ valvules sigmoïdes 15

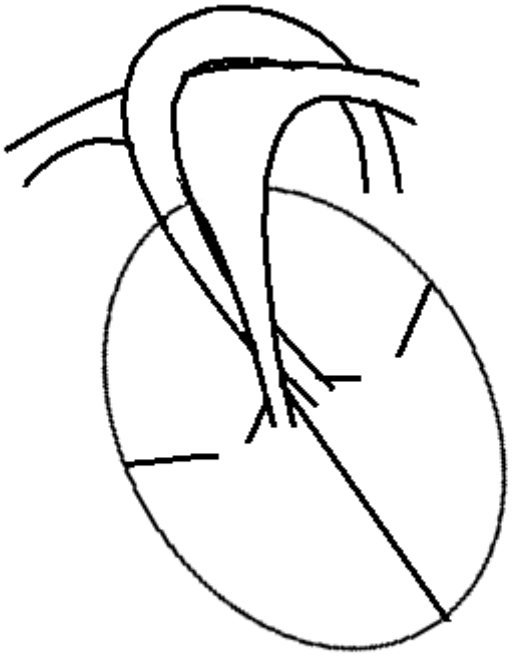




Dessin étape 4



+ valvules sigmoïdes 11
+ artères 2, 3, 4



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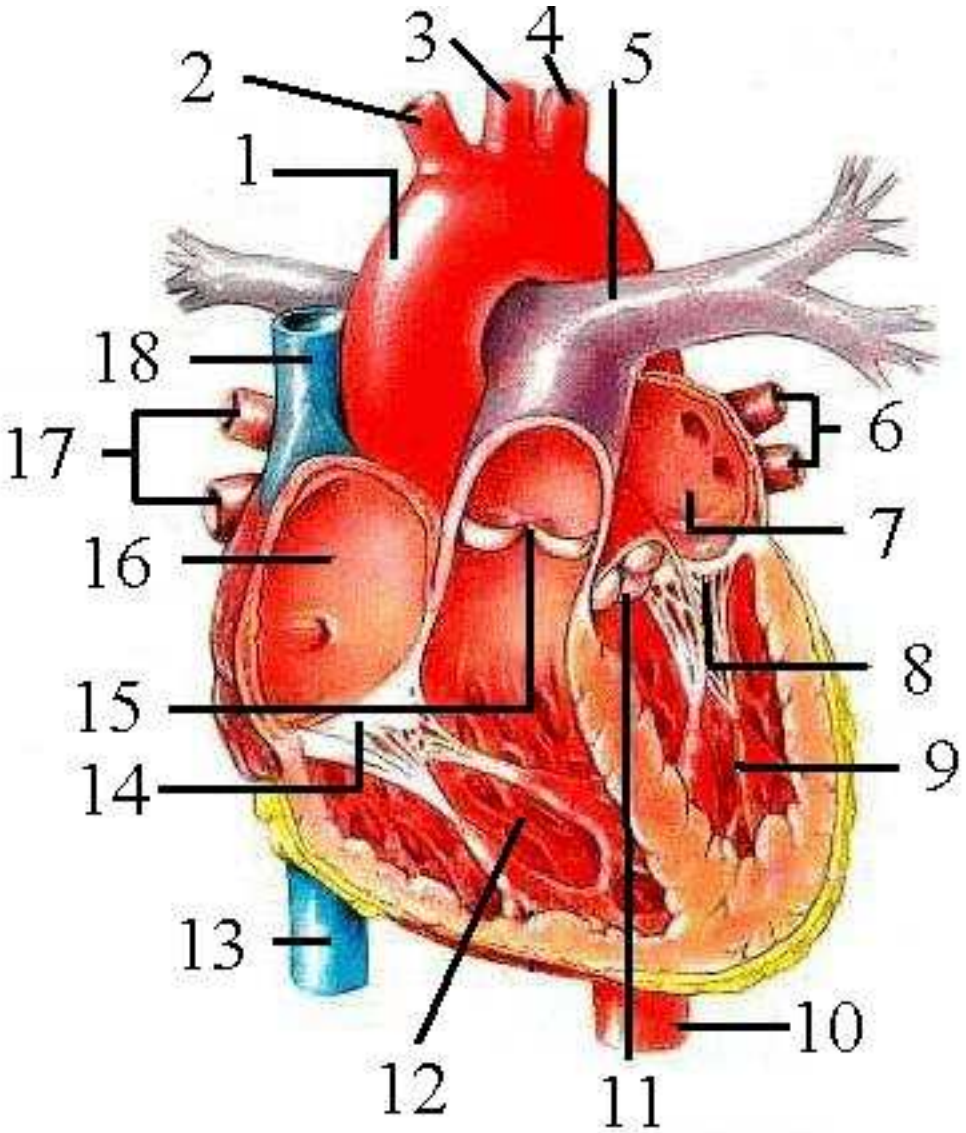

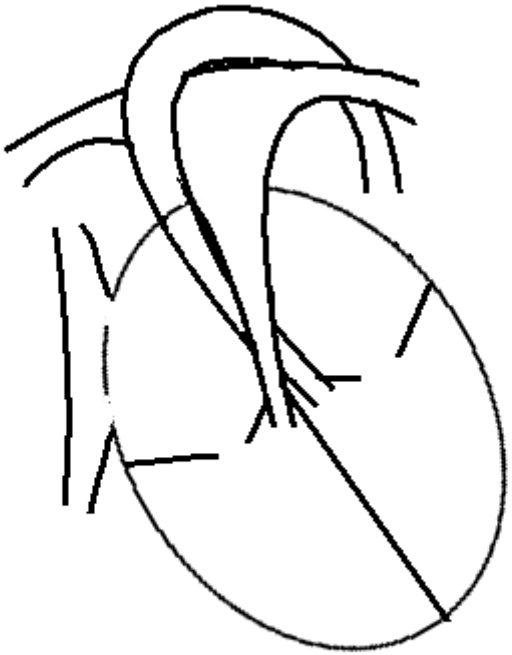

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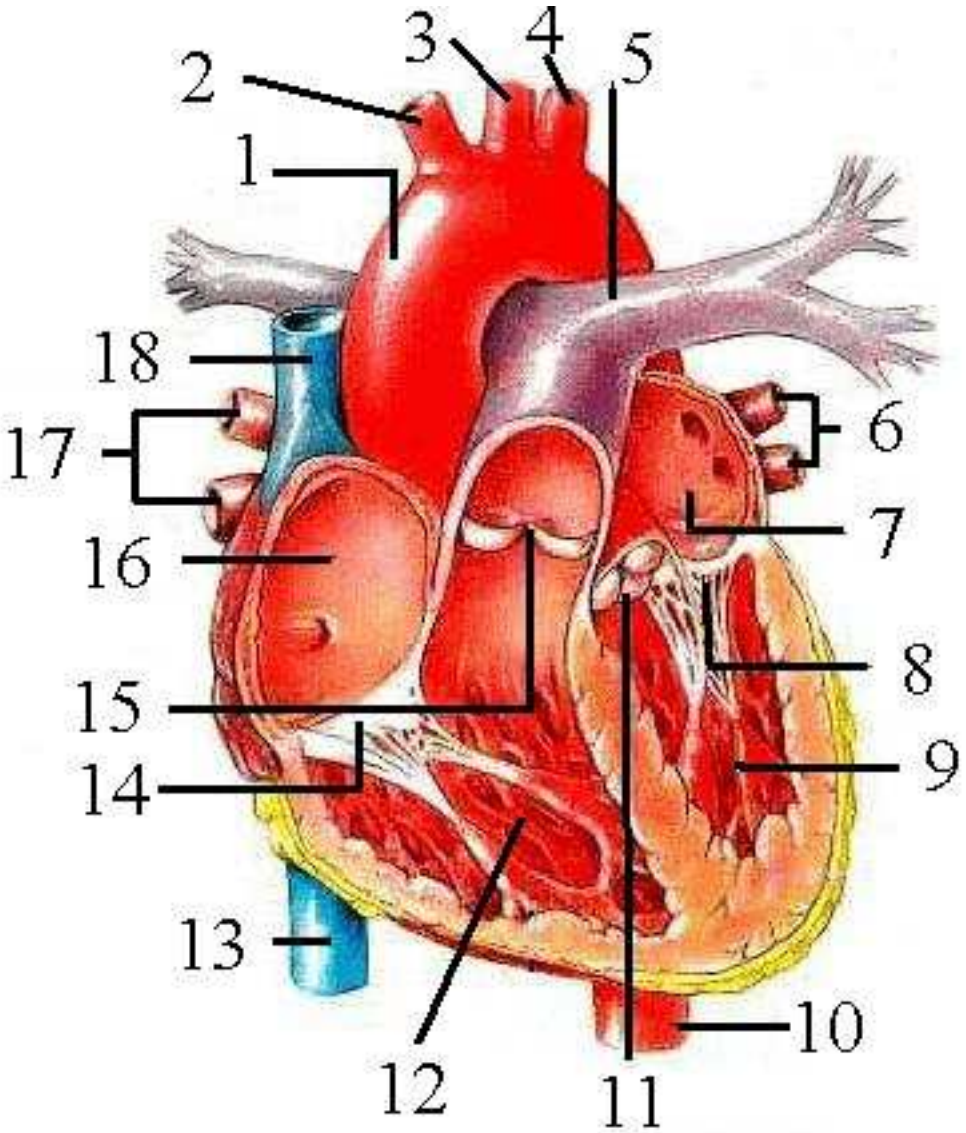
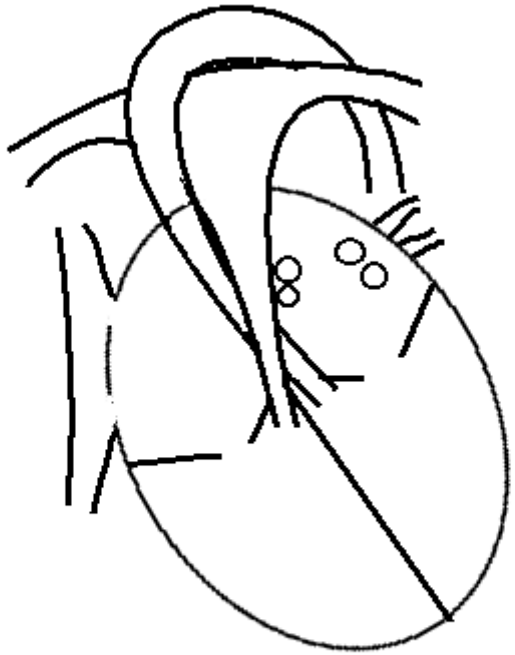
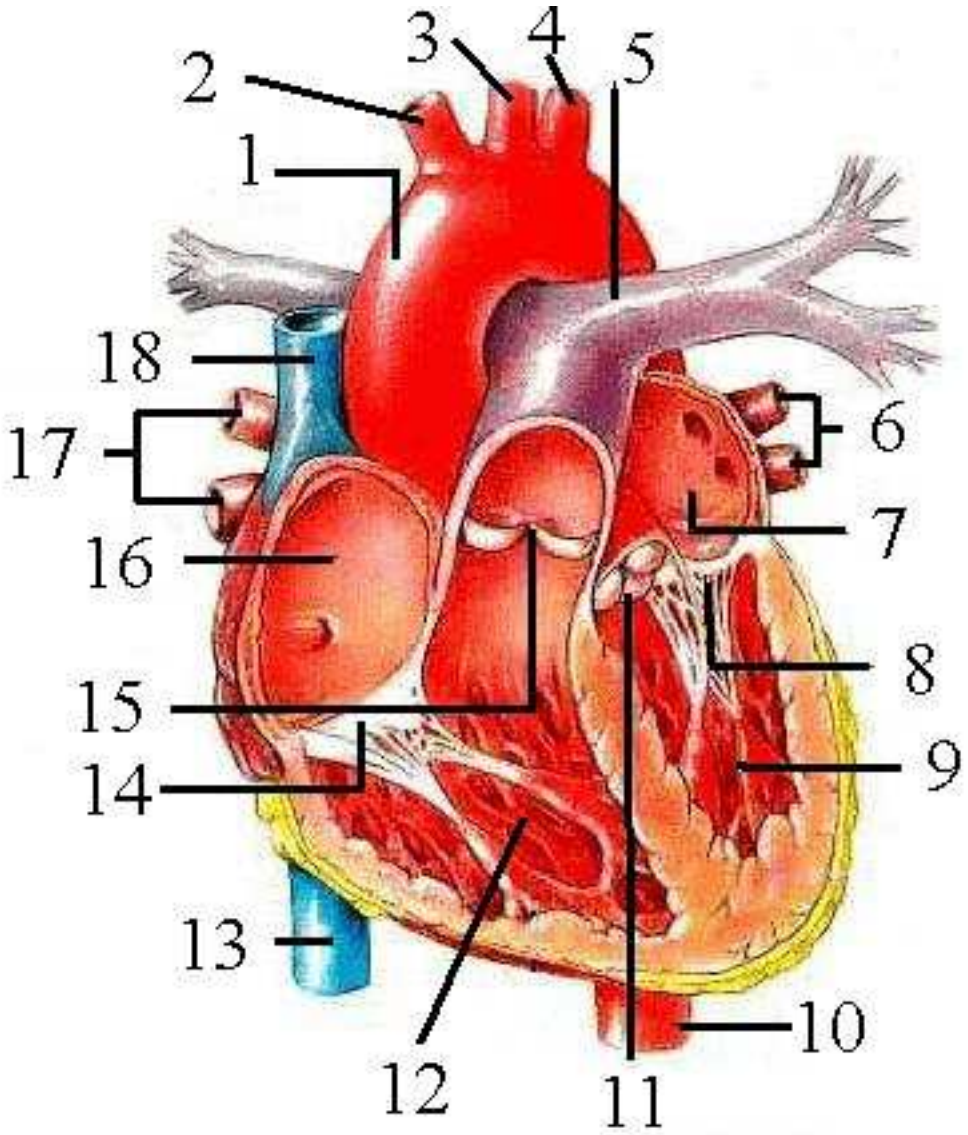
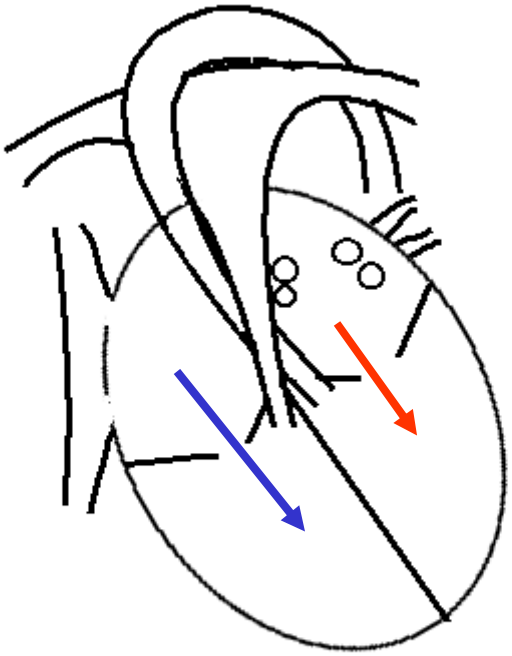


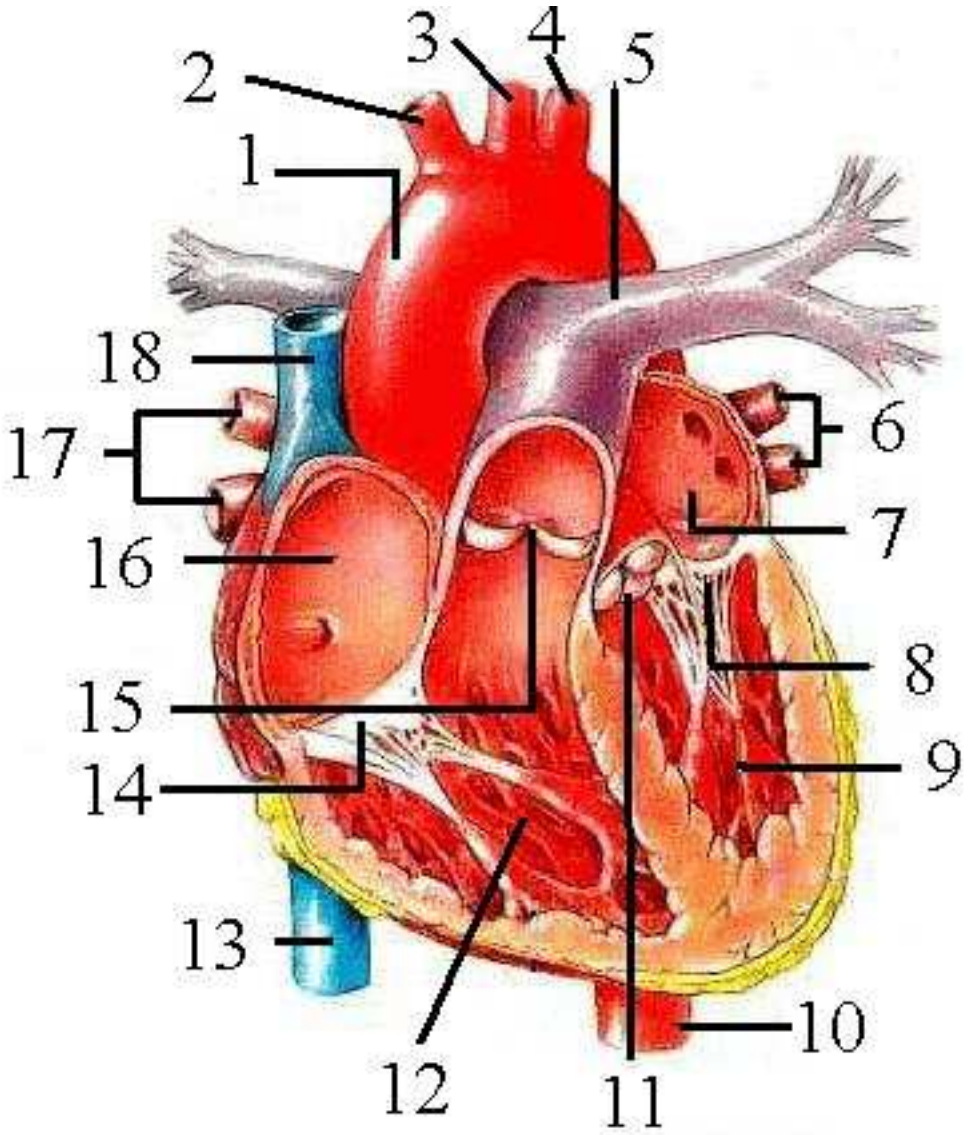


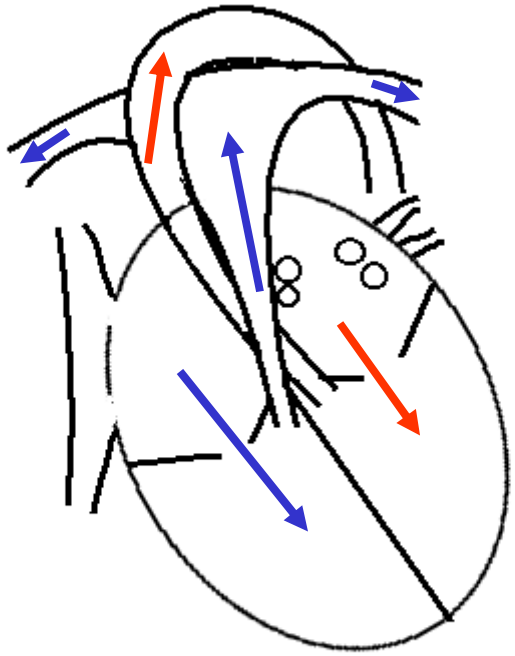
Dessin étape 7



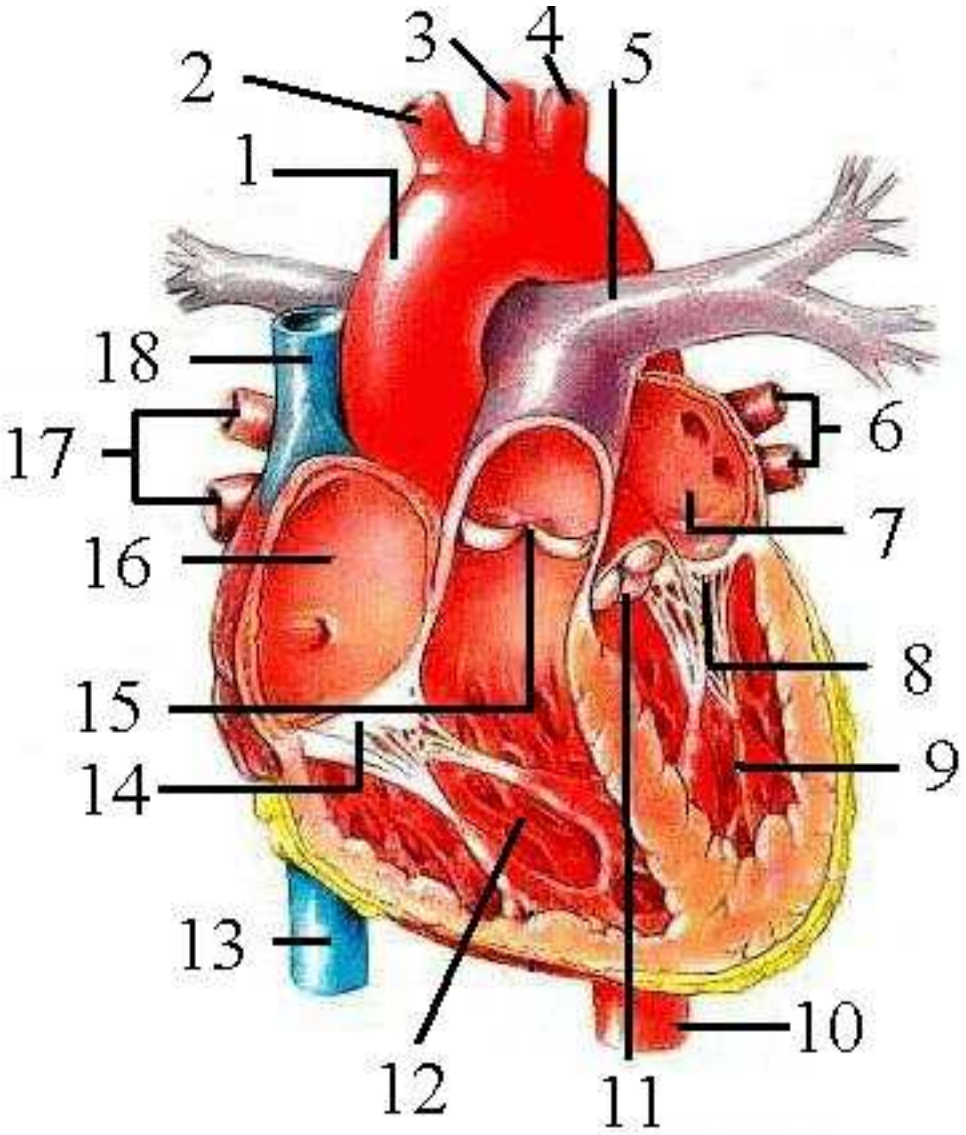


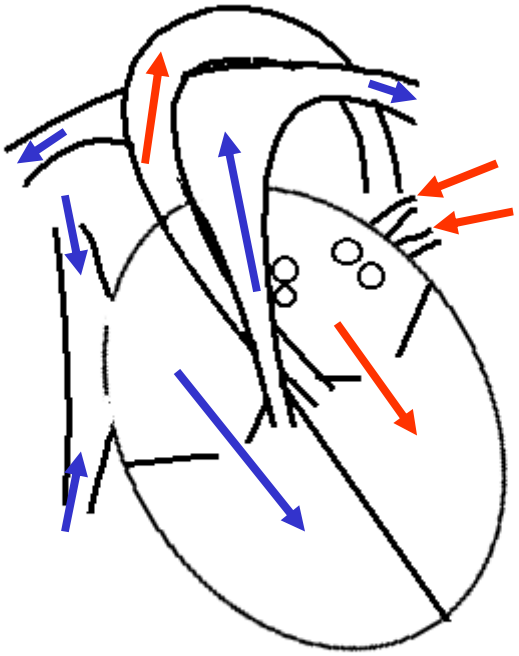
Dessin étape 8





Dessin étape 9





Bilan

- *L'appareil circulatoire du mammifère est clos*
- *La circulation est double*
  - *petite circulation = circulation pulmonaire*
  - *grande circulation = circulation générale*
- *La circulation est complète*
  - *sans mélange du sang hématosé et non hématosé*
- *Cœur à 4 cavités + valvules (sens de circulation)*
- *vaisseaux*
  - *artères, veines et capillaires*

Appareil circulatoire du poisson

1- orientation

dos

tête

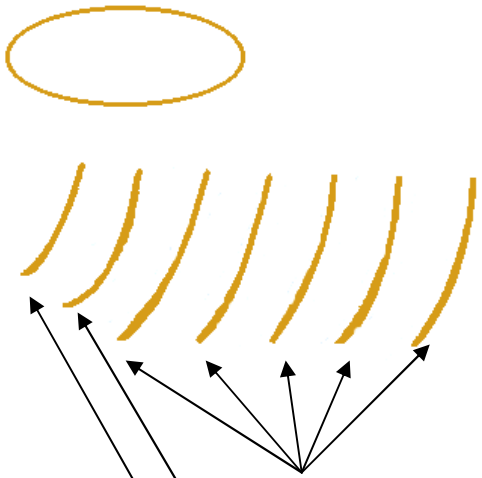
queue

ventre

Appareil circulatoire du poisson

2a- repères

Squelette de la tête



Neurocrane

Splanchnocrane

5 arcs branchiaux

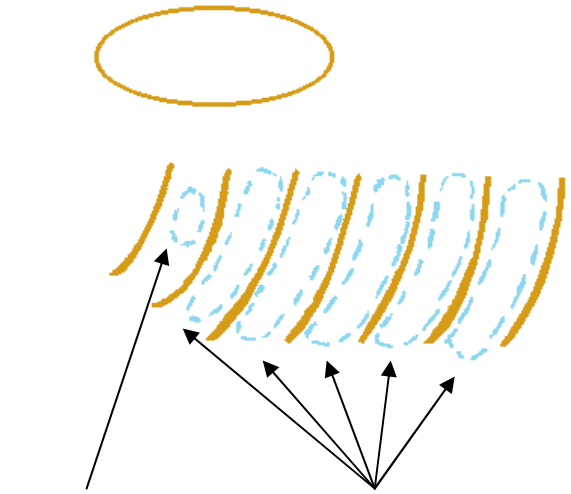
Arc hyoïde

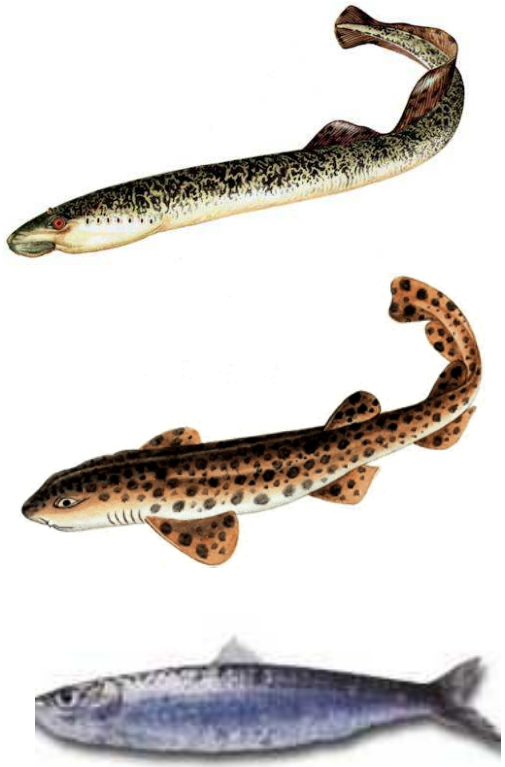
Arc mandibulaire

Appareil circulatoire du poisson

2b- repères

Les fentes branchiales

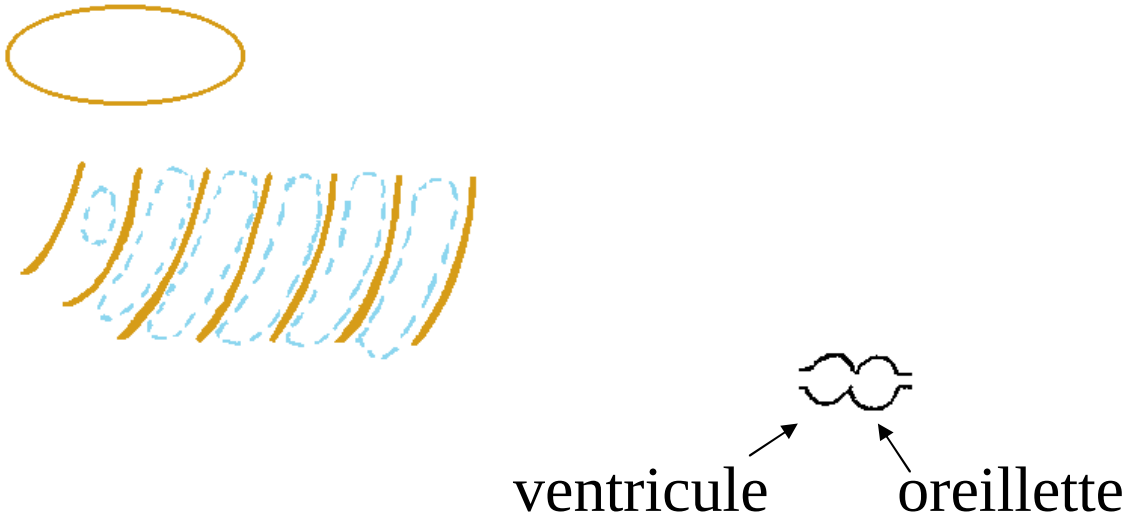




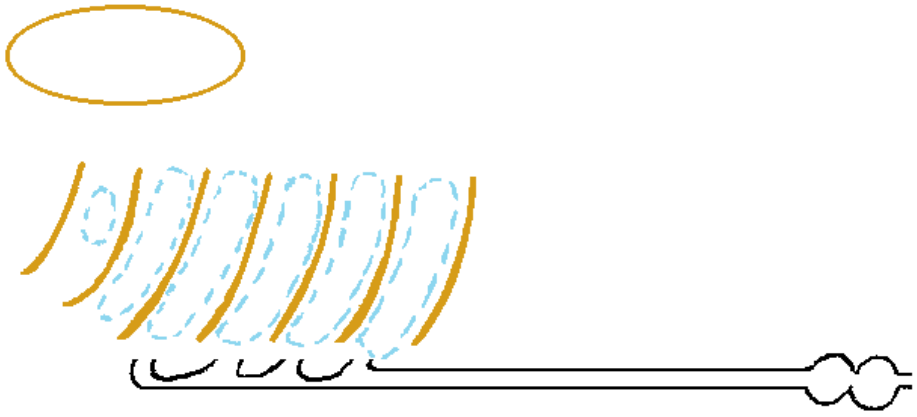
Appareil circulatoire du poisson

3- Cœur

Deux cavités

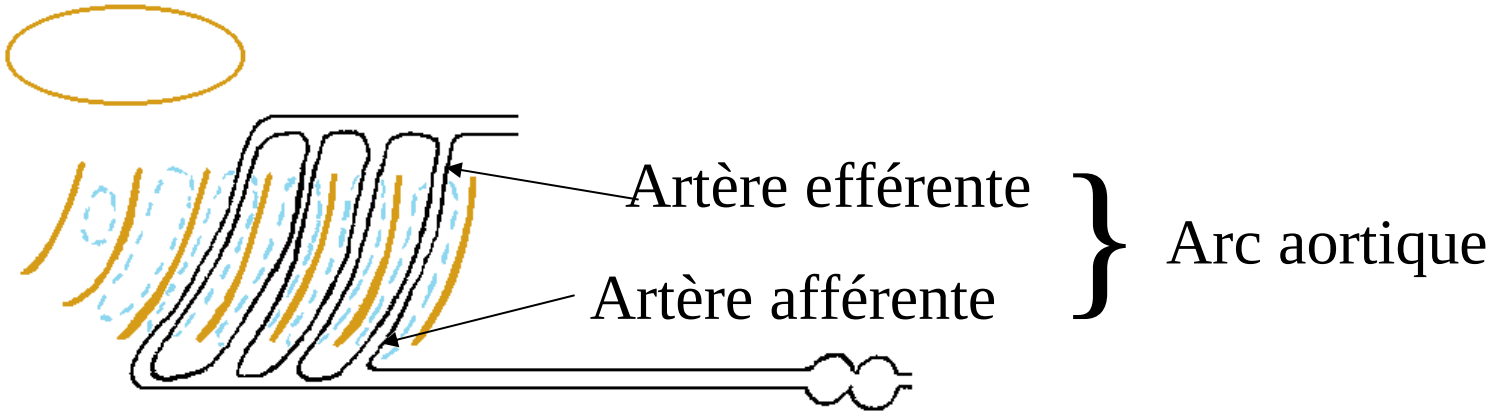


Appareil circulatoire du poisson

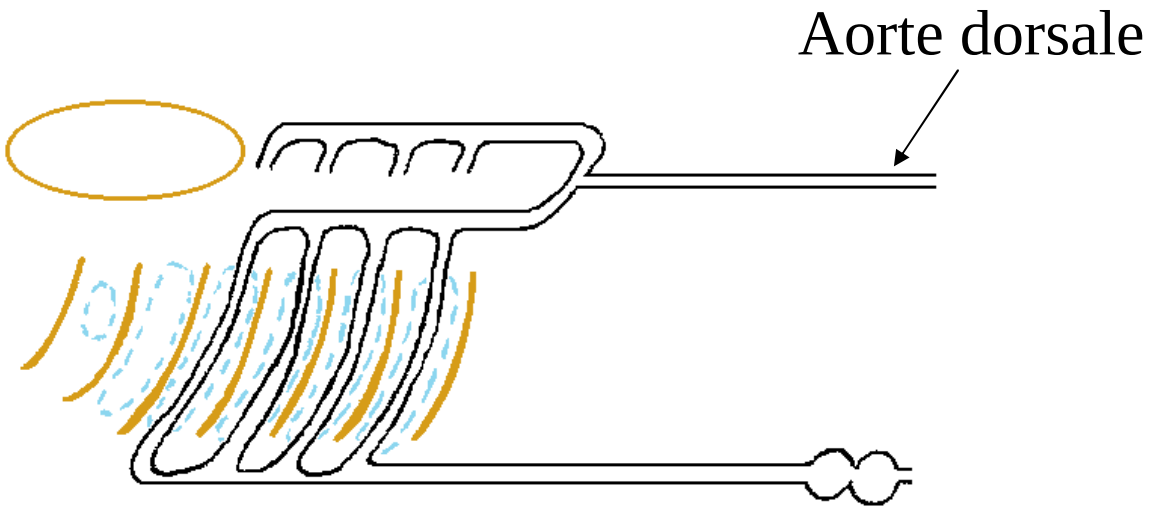


Aorte ventrale

Appareil circulatoire du poisson

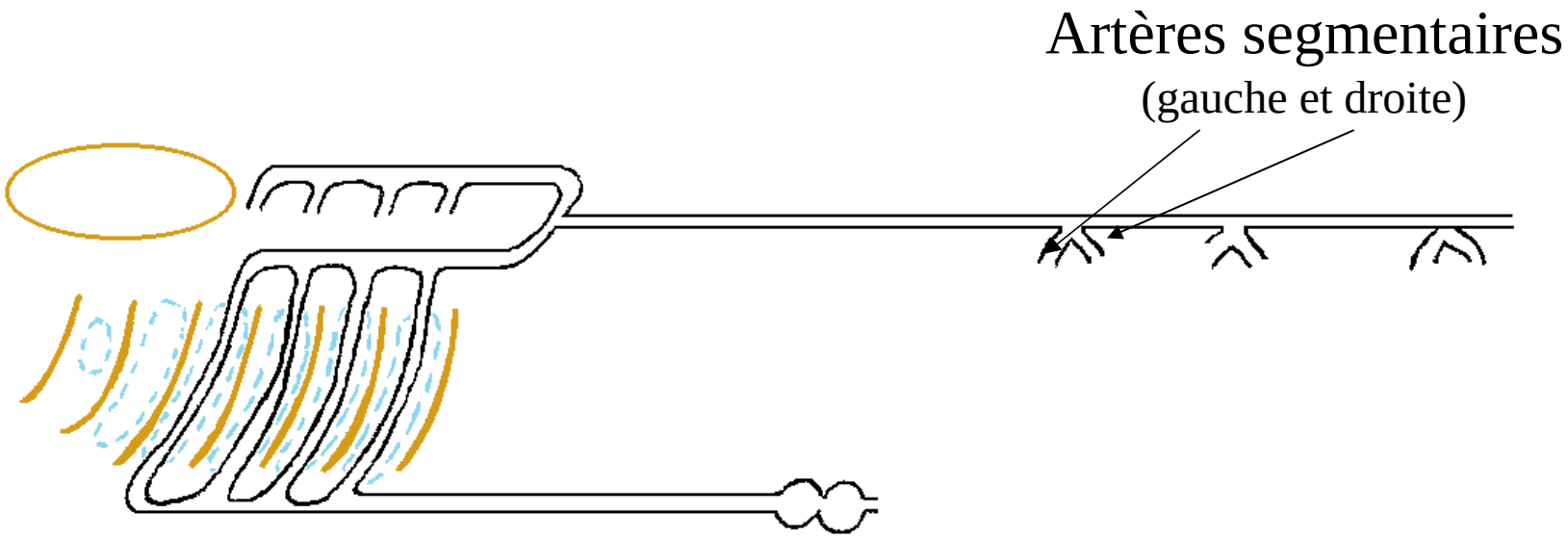


Appareil circulatoire du poisson

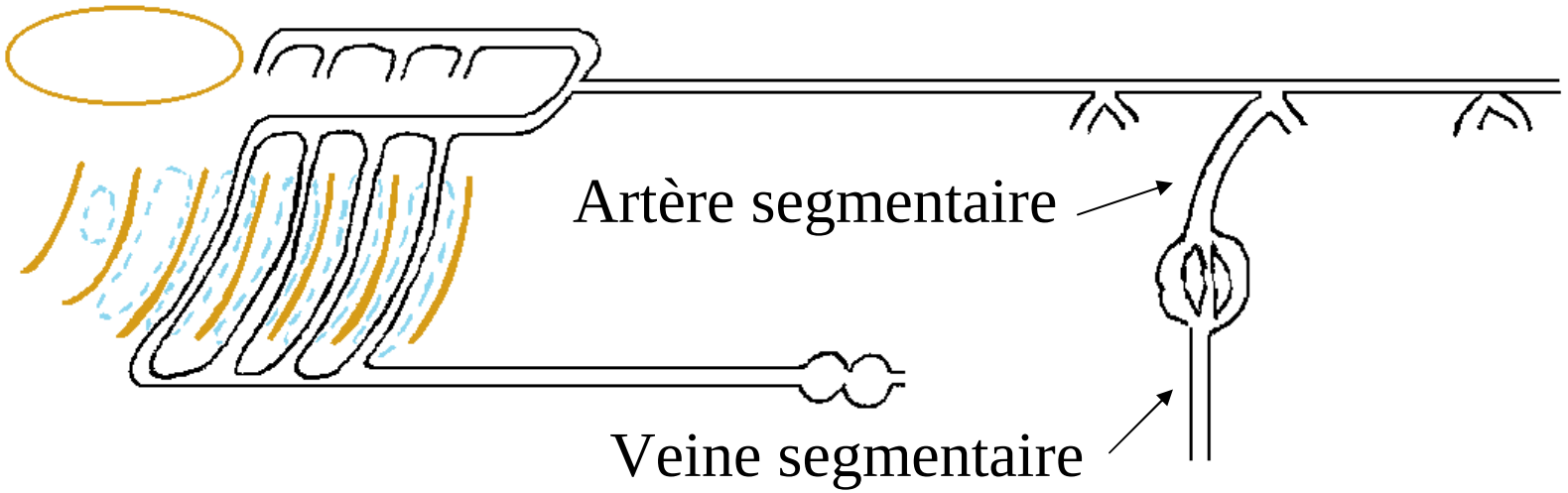


Appareil circulatoire du poisson

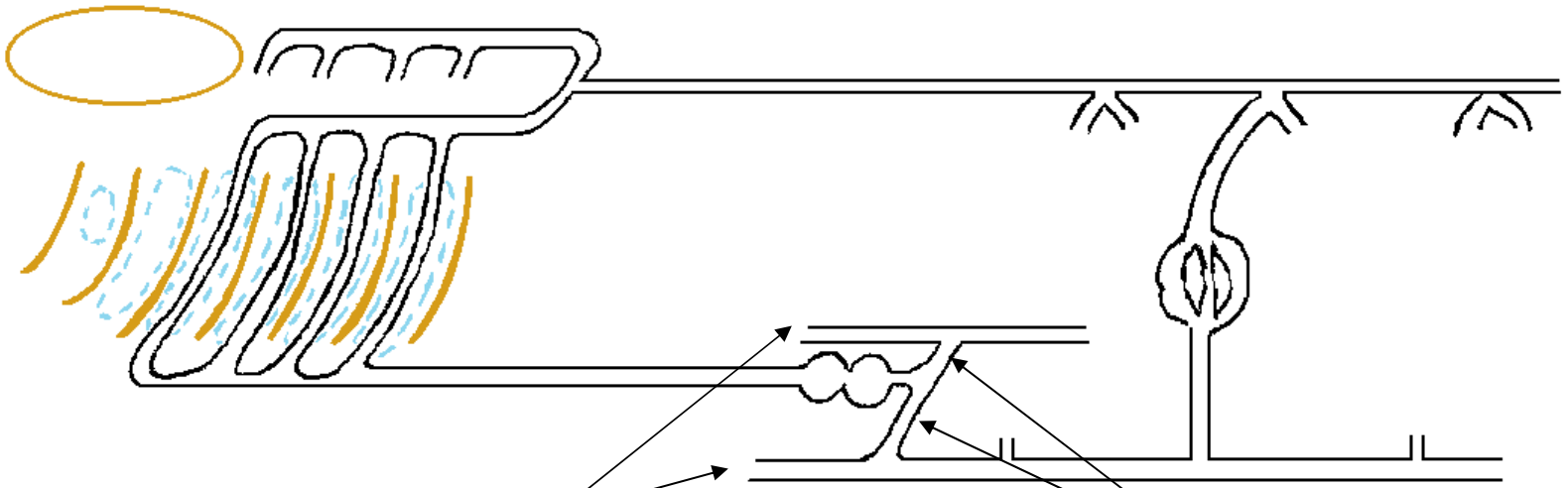
7- Distribution dans tous les métamères



Appareil circulatoire du poisson



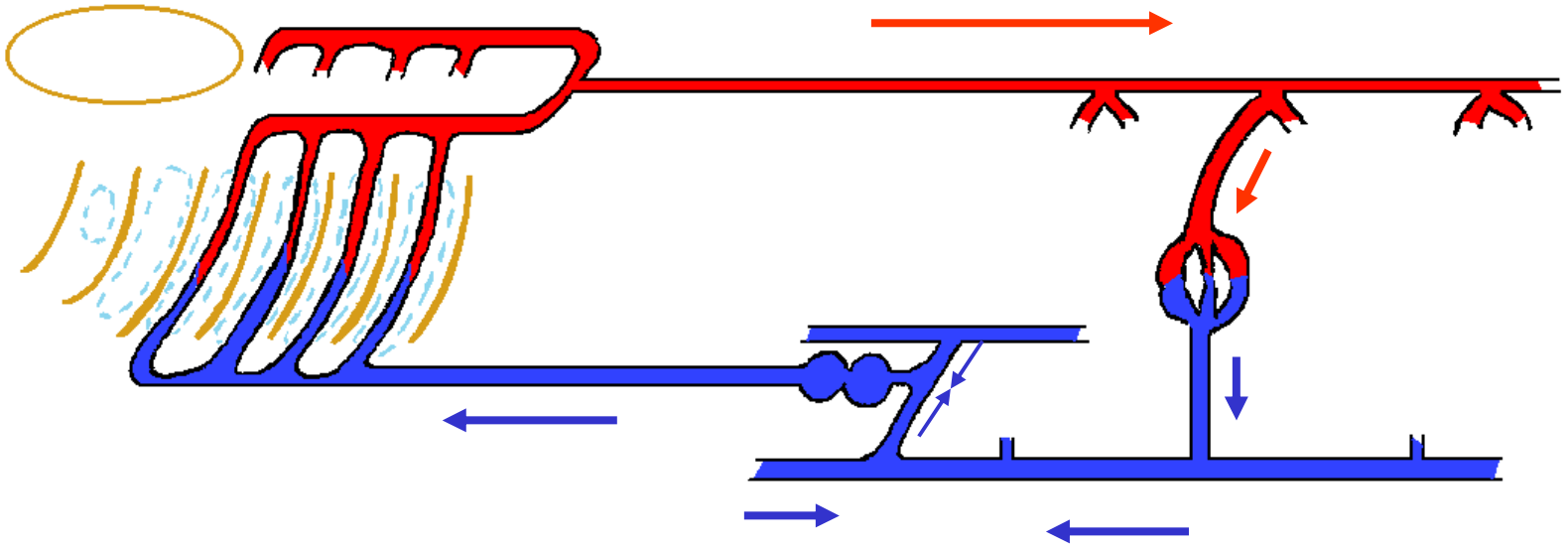
Appareil circulatoire du poisson



Veines cardinales
(droite et gauche)

Canaux de Cuvier

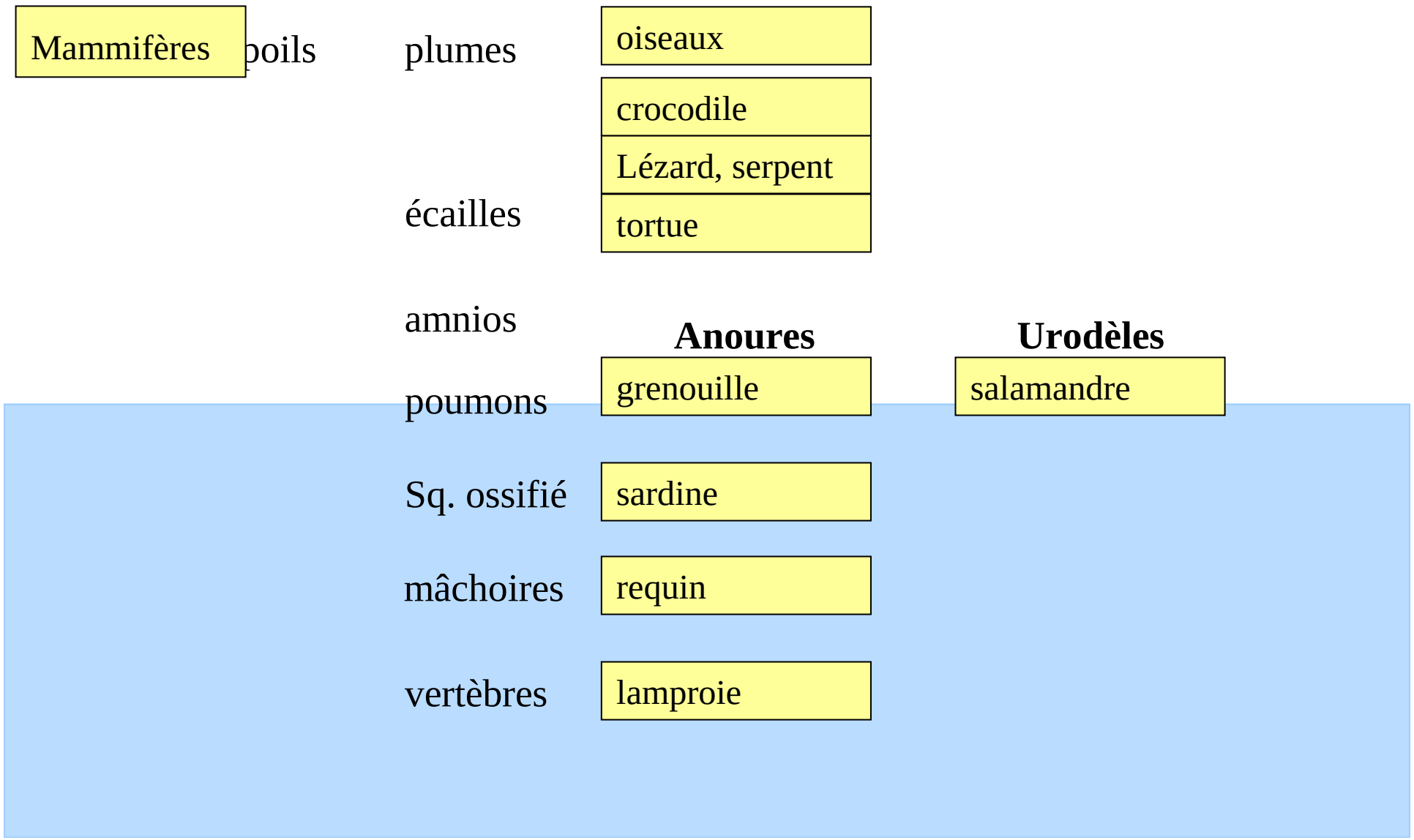
Appareil circulatoire du poisson



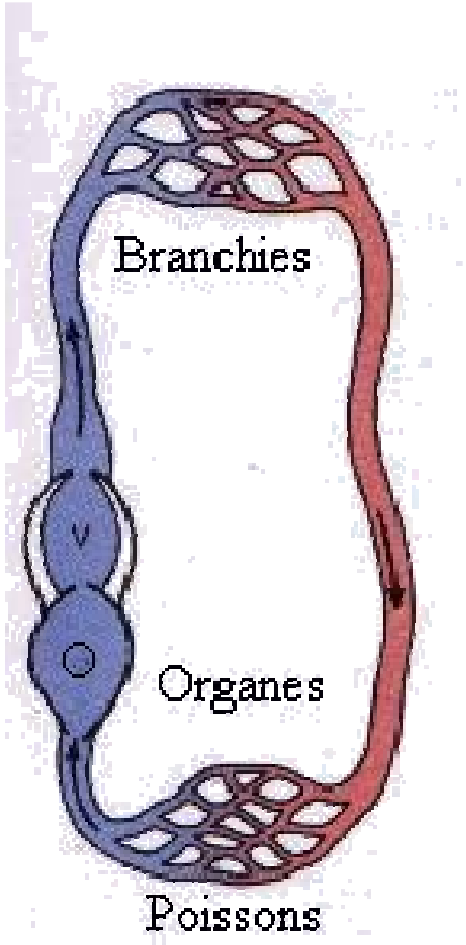
Bilan

- *L'appareil circulatoire du poisson est clos*
- *La circulation est simple*
- *La circulation est complète*
  - *sans mélange du sang hématosé et non hématosé*
- *Cœur à 2 cavités*
- *vaisseaux*
  - *artères, veines et capillaires*
  - *les artères conduisent le sang du cœur aux organes dans les métamères*

Évolution des vertébrés

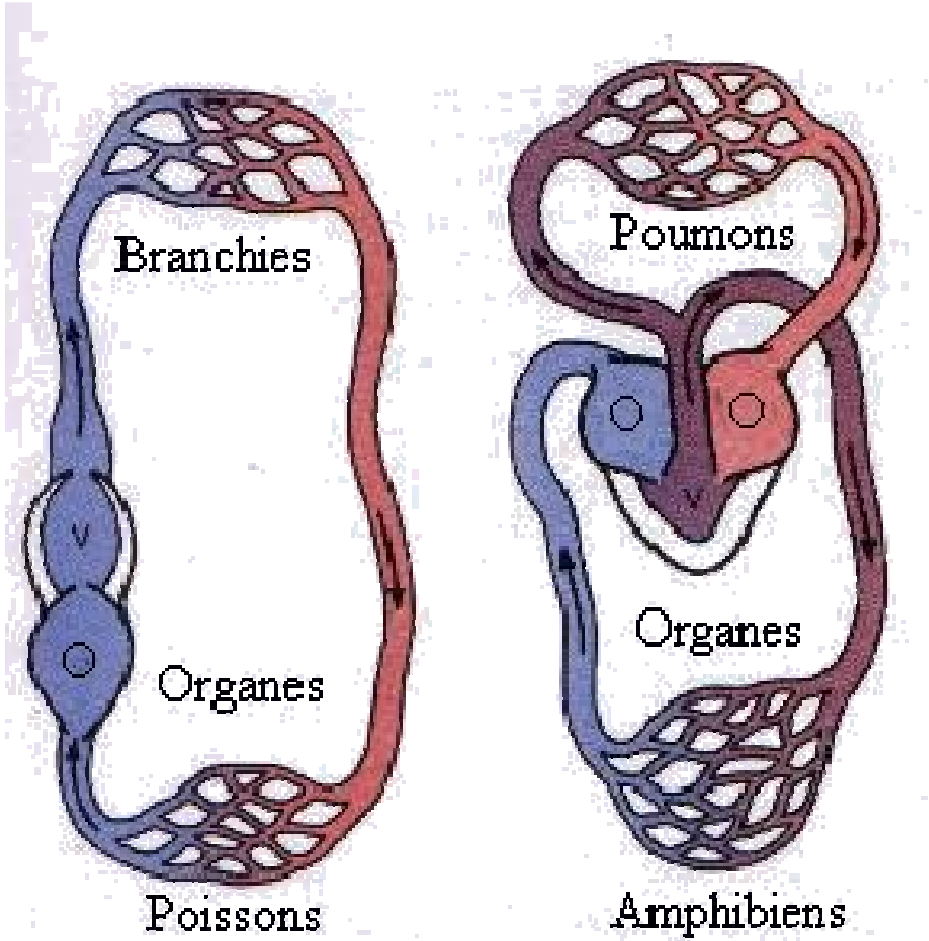


Évolution du cœur et de la circulation : Poissons



- *La circulation est simple*
- *La circulation est complète*
- *Cœur à 2 cavités*

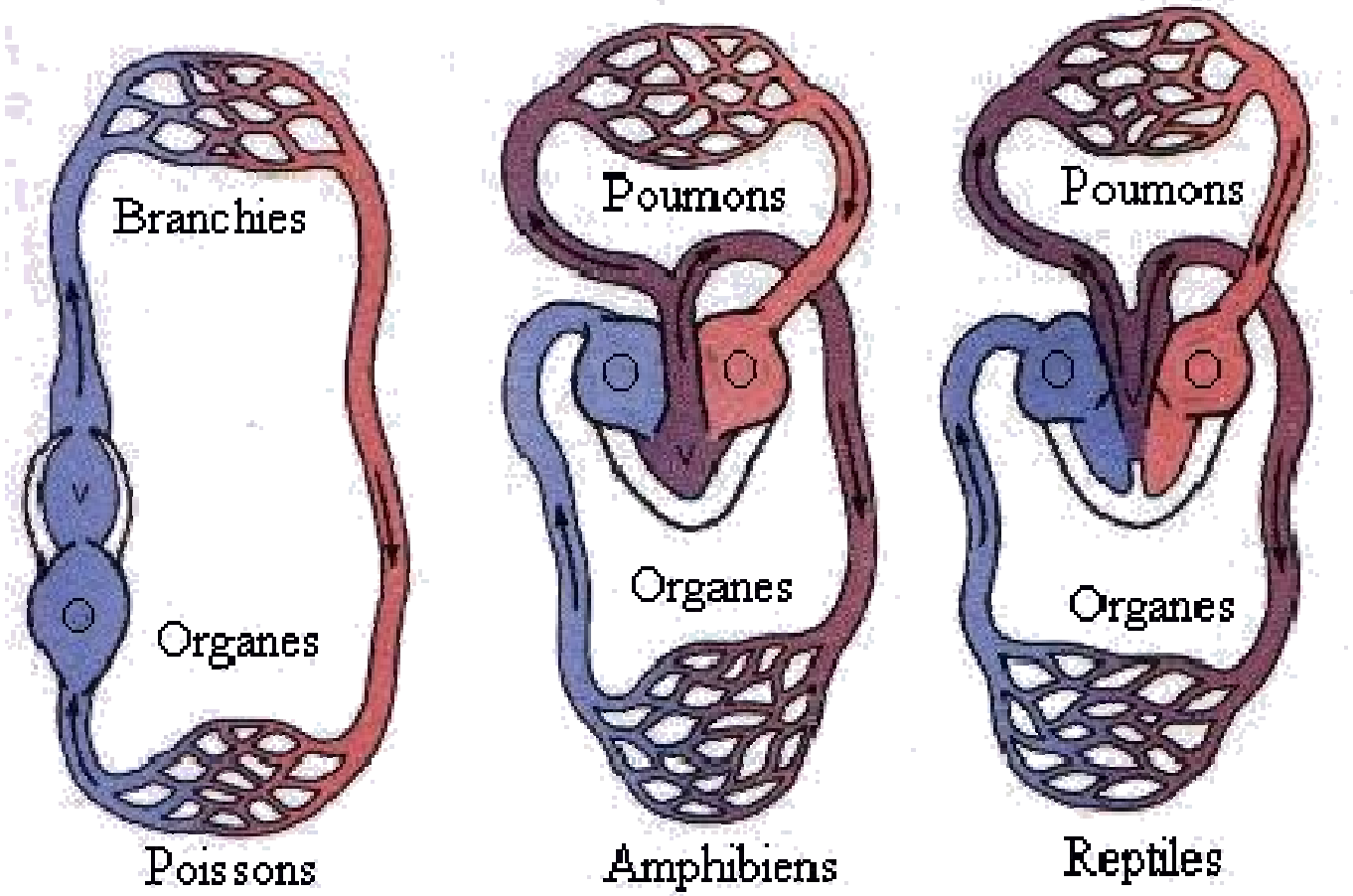
Évolution du cœur et de la circulation : Amphibiens



- *Circulation double*
- *Cœur à 3 cavités*
  - *2 oreillettes, 1 ventricule*
- *La circulation incomplète*

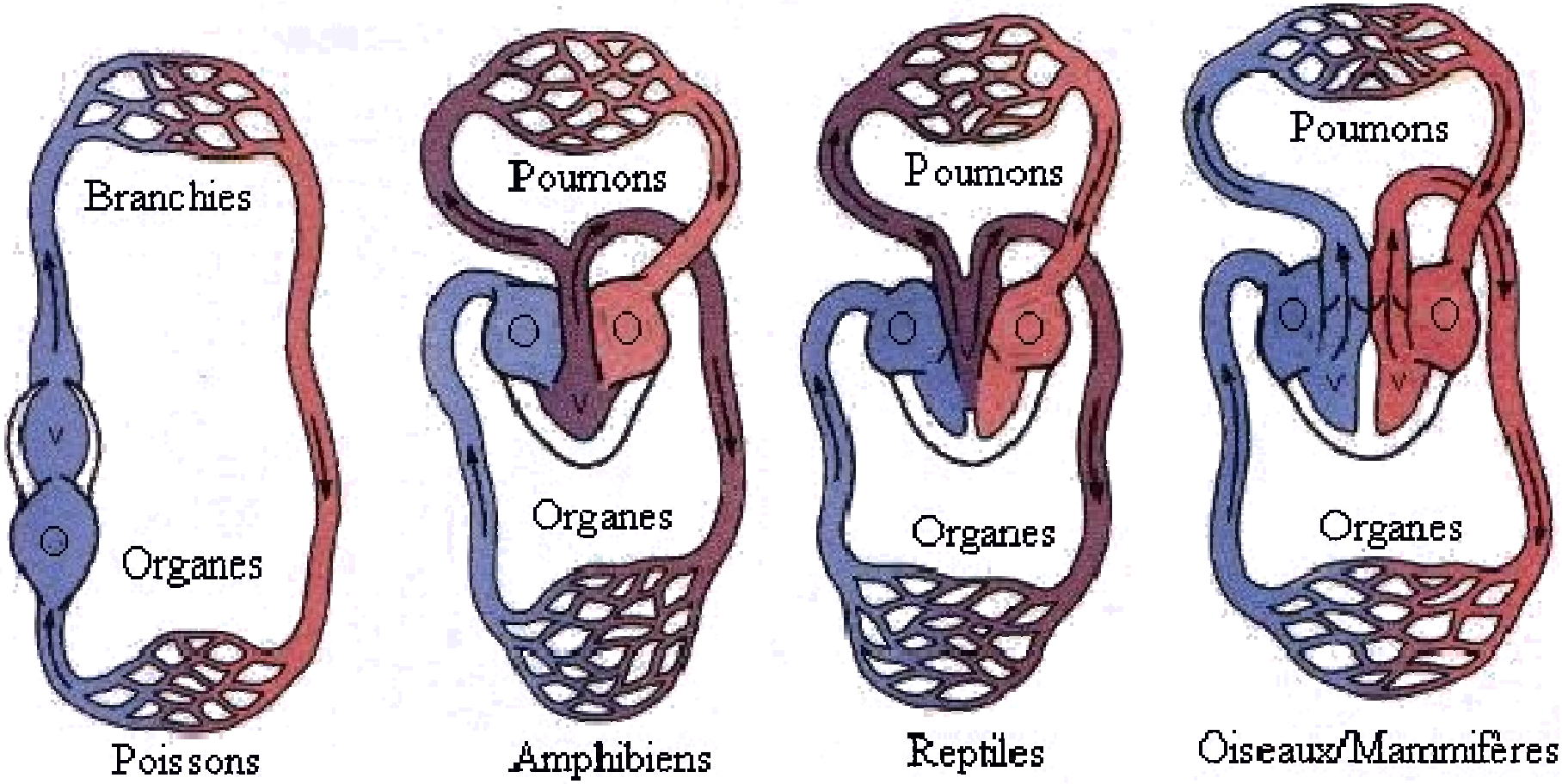
Reptiles

- *cloisonnement progressif du ventricule*
- *effectif chez crocodiles*

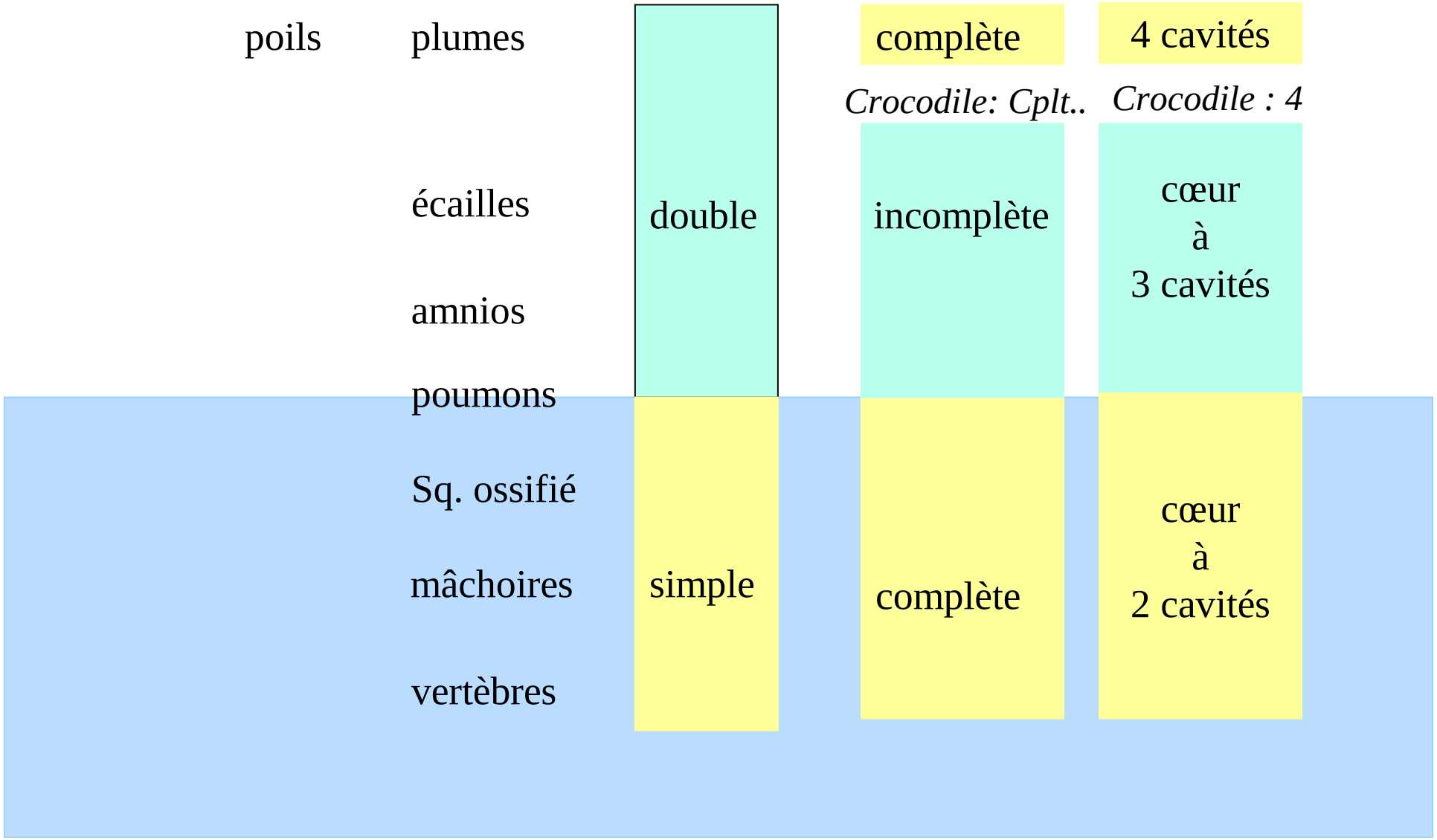


Oiseaux / Mammifères

- *La circulation est double*
- *La circulation est complète*
- *Cœur à 4 cavités*

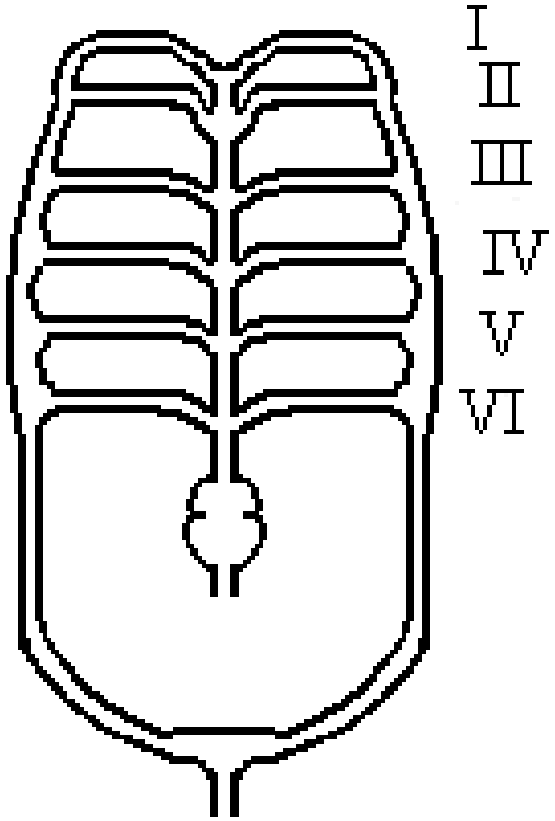


Évolution de l ’appareil circulatoire



Dénomination des arcs aortiques

Vue ventrale



I Arc mandibulaire (slt Agnathes)

II Arc hyoïdien (poissons cartilagineux et Agnathes)

III Carotide

IV Aorte 1

V Aorte 2

VI A. pulmonaire

Diminution du nombre d’arcs aortiques

III, IVg, VI — poils

plumes — III, IVd, VI

écailles — III, IV, VI

amnios

poumons — III, IV, VI (grenouille) ; III, IV, V, VI (salamandre)

Sq. ossifié — III, IV, V, VI

mâchoires — II, III, IV, V, VI

vertèbres — I, II, III, IV, V, VI