

# Introduction to Biology. Lecture 22

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# Outline

- 1 Questions and answers
  - Where we are?
- 2 Animals
  - Basic principles of animal body construction
  - Animal phyla and their phylogeny
  - Classes of chordates and their phylogeny

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# Questions and answers

## Where we are?

# Respiration

- Gills
- Lungs
- Tracheas

# Animals

## Basic principles of animal body construction

# Osmoregulation

- Nephridia
- Kidneys

# Nervous system

- Diffuse neurons
- Trunks and circles
- Ganglia
- Brain



# Reproduction and development

- External and internal fertilization
- Direct development or development with metamorphosis

# Animals

## Animal phyla and their phylogeny

# Four subkingdoms

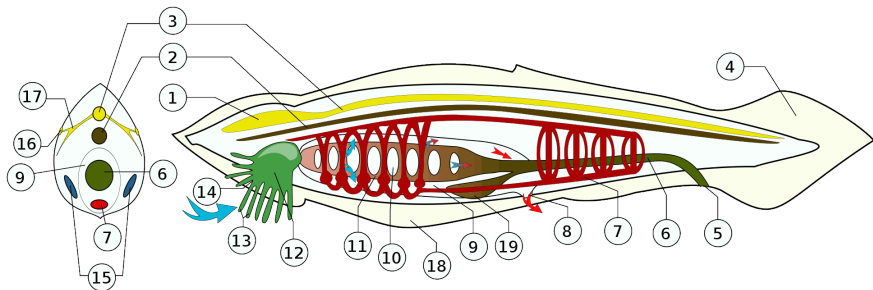
- Spongia: asymmetric filtrators
- Phagocytellozoa: asymmetric crawlers
- Cnidaria: radial stinging predators
- Bilateria: bilateral

# Nine phyla

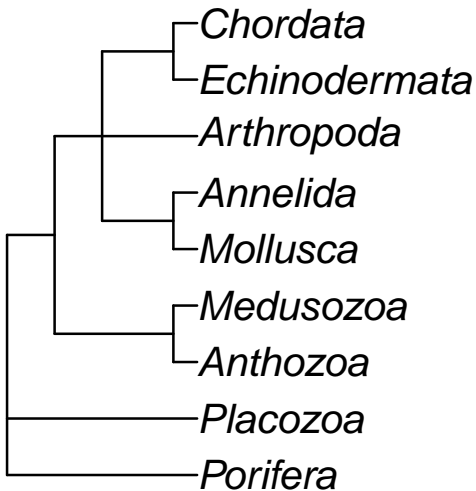
- Spongia
  - Porifera, sponges
- Phagocytellozoa
  - Placozoa, *Trichoplax*
- Cnidaria
  - Anthozoa, corals
  - Medusozoa, jellyfish
- Bilateria
  - Mollusca
  - Annelida
  - Arthropoda
  - Echinodermata
  - Chordata

*Nine phyla = nine body plans*

# Chordate body plan



# Phylogeny of nine phyla



# Animals

## Classes of chordates and their phylogeny



# Eight classes of Chordata

## **Acrania:**

Class 1. Leptocardii: lancelet

## **Vertebrata:**

- Pisces:

Class 2. Chondrichthyes

Class 3. Actinopterygii

Class 4. Dipnoi

- Tetrapoda:

Class 5. Amphibia

Class 6. Reptilia

Class 7. Aves

Class 8. Mammalia



# Optional homework: in preparation for the 3rd test, fill this table:

	1	2	3	4	5	6	7	8	9	10
Porifera										
Placozoa										
Anthozoa										
Medusozoa										
Annelida										
Mollusca										
Arthropoda										
Echinodermata										
Chordata										

Characters: 1 ...

Characters will not be necessary relevant to all members of phylum!



## For Further Reading



**Animal.**

<http://en.wikipedia.org/wiki/Animal>



**Animal phyla.**

[http://en.wikipedia.org/wiki/Phylum#Animal\\_phyla](http://en.wikipedia.org/wiki/Phylum#Animal_phyla)

