

Introduction to Animals

Section 2 Animal Body Plans

Main Idea

Details

Scan the figures and read the captions in Section 2 of the chapter. Write two facts that you discovered about animal body plans.

1. **Accept all reasonable responses.**
2. _____

Review Vocabulary

Use your book or dictionary to define phylogeny.

phylogeny

evolutionary history of a species based on comparative relationships of structures and comparisons of modern life-forms with fossils

New Vocabulary

Compare the terms within each table by writing their definitions.

acoelomate

anterior

bilateral symmetry

cephalization

coelom

deuterostome

dorsal

posterior

protostome

pseudocoelom

radial symmetry

symmetry

ventral

| | | | |
|--|--|--|---|
| anterior head end of bilateral animals where sensory organs are often located | posterior tail end of bilaterally symmetrical animals | dorsal upper surface of bilaterally symmetrical animals | ventral lower surface of bilaterally symmetrical animals |
|--|--|--|---|

cephalization **body plan that tends to concentrate nervous tissue and sensory organs at the anterior end of the animal**

symmetry **term describing the arrangement of an animal's body structures**

| | |
|---|---|
| bilateral can be divided down the body's length into two similar right and left halves | radial can be divided along any plane, through a central axis, into roughly equal halves |
|---|---|

| | |
|--|--|
| protostome animal with a mouth that develops from the opening in the gastrula | deuterostome animal whose mouth develops from cells other than those at the opening of the gastrula |
|--|--|

| | | |
|--|--|--|
| coelom fluid-filled body cavity completely surrounded by mesoderm | acoelomate an animal without a coelom | pseudocoelom fluid-filled body cavity between the mesoderm and endoderm |
|--|--|--|

Section 2 Animal Body Plans (continued)

Main Idea _____

Details _____

Evolution of Animal Body Plans and Development of Tissues

I found this information on page _____.

SE, pp. 698–699

RE, pp. 286–287

Symmetry

I found this information on page _____.

SE, p. 700

RE, pp. 287–288

Model an evolutionary tree, and show what the trunk, branches, and branching points represent. **Accept all reasonable responses.**

Analyze the evolutionary sequence by completing the sentences.

The earliest animals had **asymmetrical** body plans, as do their modern descendants, such as **sponges**.



Later, sea stars, hydras, and other animals appeared with **radial symmetry**. They were able to detect and capture **prey** coming from any direction.



The last body plan to develop was **bilateral symmetry** with a head at the **anterior** end of the body and a tail at the **posterior** end of the body.

Model a bilaterally symmetrical being. Then create characters showing asymmetry and radial symmetry. Use your imagination. List the number of arms, legs, eyes, etc., that each character has.

Accept all reasonable responses.

| Bilateral Symmetry | Radial Symmetry | Asymmetry |
|--|-----------------|-------------|
| body parts: 2 eyes, 2 legs, 2 arms, 1 nose in center | body parts: | body parts: |

Section 2 Animal Body Plans (continued)

Main Idea _____

Details _____

Body Cavities

I found this information on page _____.

SE, p. 701
RE, p. 288

Model each type of body cavity labeled below. **Diagrams should resemble SE p. 701. Accept reasonable variations.**

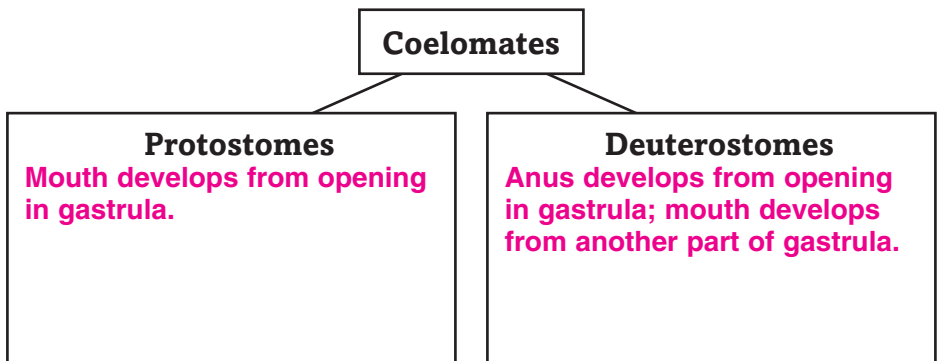
| Acoelomate | Pseudocoelomate | Coelomate |
|------------|-----------------|-----------|
| | | |

Development in Coelomate Animals

I found this information on page _____.

SE, p. 703
RE, p. 289

Compare mouth development in the two major lines of coelomates.



Segmentation

I found this information on page _____.

SE, p. 703
RE, p. 289

Analyze two advantages of segmentation.

1. animal can survive damage to one segment; other segments
might be able to take over functions of damaged segment
2. movement more effective because segments can move
independently

SUMMARIZE

Describe the general evolutionary trend of animal body parts. Explain your description. **Accept all reasonable responses.**

The general trend is from simple to complex. Early animals lacked true tissues. As animals evolved, tissues developed. Tissues evolved into specialized tissues.