

## Read and React - The Garden Snail



### Snail Classification

You will be observing the common garden snail, *Helix aspersa*. It is from the **Phylum Mollusca**. There are more than 50,000 species of mollusk. They are **invertebrates** and include the octopus, squid, snails, slugs, clams, oysters, and many others. As diverse as this phylum is, all its animals include three physical traits. They have what is referred to as the: visceral mass, mantle and foot. Mollusks are further broken down into **Classes**. The snail belongs to the Class **Gastropoda**. The gastropods include snails, slugs, conchs, periwinkles and sea slugs.

**Snail Classification** - Kingdom: Animalia > Phylum: Mollusca > Class: Gastropoda > Order: Stylommatophora > Family: Helicidae > Genus: Helix > Species: aspersa

### Physical Traits

- They have a large, muscular **foot** on which they move slowly along any surface and the **visceral mass** sits atop the foot. They secrete a thick mucus that helps them move over surfaces and leaves a trail.
- Many gastropods have shells, though not all. Both the slug and the sea slug (nudibranch) lack a shell. Snails and slugs breathe through respiratory pores, the oxygen being absorbed directly into the abundant tiny blood vessels of the **mantle**. In the more aquatic gastropods, there are gills instead.
- Snails have an odd development, the young going through a torsion that results in the anus emptying waste out at the back of the head.
- The adult has a hard, thin **calcareous** shell that is 25–40 mm in diameter and 25–35 mm high with four or five whorls. The spiral shell varies in color but is generally dark brown with yellow stripes, flecks, or streaks. The opening has a tough plate, called an **operculum**, that can seal them inside in case of danger.
- They also have two pairs of **tentacles**, the upper two of which have eye-like light sensors, and the lower two are smaller and sensitive to touch and smell. The tentacles can be retracted into the head. The mouth is located beneath the tentacles, and contains a rough tongue-like structure called a **radula** which the snail uses to scrape and manipulate food particles.
- The snail's "brain" is a series of "**ganglion**" (grouping of nerve cells bosses) that wrap around the snail's **esophagus** (throat).

### Diet

The garden snail is a herbivore eating (and damaging) many types of plants including fruit trees, vegetable crops, garden flowers, and grasses. It is a food source for many other animals, including small mammals, many bird species, lizards, frogs, centipedes, predatory insects, predatory terrestrial snails and man.

### Reproduction

Each snail contains both male and female reproductive parts. This makes them "**hermaphrodites**." They still choose to mate with other snails, though they can fertilize themselves. During a mating session of several hours, two snails exchange sperm. The garden snail uses 'love darts' during mating. Love darts are sharp, slimy, mucus coated projectiles fired at the snail's sexual partner. About two weeks after mating approximately 80 spherical pearly-white eggs are laid into crevices in the topsoil. Up to six batches of 80 eggs can be laid in a year. The size of the egg is 4 mm. and young snails take one to two years to reach adulthood.



## Read and React - 10 Short Answers - The Garden Snail



### Physical Traits

- They have a large, muscular \_\_\_\_\_ on which they move slowly along any surface and the **visceral mass** sits atop the foot. They secrete a thick \_\_\_\_\_ that helps them move over surfaces and leaves a trail.
- Many gastropods have shells, though not all. Both the slug and the sea slug (nudibranch) lack a shell. Snails and slugs breathe through respiratory \_\_\_\_\_, the oxygen being absorbed directly into the abundant tiny blood vessels of the **mantle**. In the more aquatic gastropods, there are gills instead.
- Snails have an odd development, the young going through a torsion that results in the \_\_\_\_\_ emptying waste out at the back of the head.
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- The snail's “\_\_\_\_\_” is a series of “**ganglion**” (grouping of nerve cells bosses) that wrap around the snail's **esophagus** (throat).

### Diet

The garden snail is a \_\_\_\_\_ eating (and damaging) many types of plants including fruit trees, vegetable crops, garden flowers, and grasses. It is a food source for many other animals, including small mammals, many bird species, lizards, frogs, centipedes, predatory insects, predatory terrestrial snails and \_\_\_\_\_.

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Each snail contains both male and female reproductive parts. This makes them “**hermaphrodites**.” They still choose to mate with other snails, though they can fertilize themselves. During a mating session of several hours, two snails exchange \_\_\_\_\_. The garden snail uses ‘love darts’ during mating. Love darts are sharp, slimy, mucus coated projectiles fired at the snail's sexual partner. About two \_\_\_\_\_ after mating approximately 80 spherical pearly-white eggs are laid into crevices in the topsoil. Up to six batches of 80 eggs can be laid in a year. The size of the egg is 4 mm. and young snails take one to two years to reach adulthood.

## Read and React - Critical Thinking - The Garden Snail



1) Can you name other animals that are in the Phylum Mollusca? \_\_\_\_\_

\_\_\_\_\_

2) Can you name other animals that are in the Class Gastropoda? \_\_\_\_\_

\_\_\_\_\_

3) What are three traits that this group have in common? \_\_\_\_\_

\_\_\_\_\_

4) What helps snails move over surfaces and leaves a trail? \_\_\_\_\_

\_\_\_\_\_

5) How do snails breathe? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6) What structures in snails help them sense the world around them? \_\_\_\_\_

\_\_\_\_\_

7) How do snails break down food (compared to how we bite and chew)? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8) Name a unique trait of a snail's reproduction: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Wild Discoveries - Garden Snail Physical Traits

### *Science Inquiry and Observation*

#### **Materials:**

- white copy paper
- rulers
- pencils
- magnifying lens



#### **Procedures:**

1. Observe your snails.
2. Describe your snail's shell:

\_\_\_ shell color: \_\_\_\_\_

\_\_\_ shell shape: \_\_\_\_\_

\_\_\_ shell texture: \_\_\_\_\_

\_\_\_ shell size and number of whorls: \_\_\_\_\_

3. Observe your snail's body. Find its tentacles, eyes, muscular foot, respiratory pore, anus and genital pore:

4. Make a drawing of your snail below and label the parts:

A large, empty rectangular box with a thin black border, intended for a student to draw and label a snail. The box occupies the lower half of the page.

## Wild Discoveries - Garden Snail Locomotion

### *Science Inquiry and Observation*

#### **Materials:**

- paper and pencil
- rulers
- different color markers
- clear glass pie plate, pane of glass or cookie tray
- flashlight



#### **Procedures:**

1. Observe your snail move across the surface from above and below. Describe how the muscular “foot” moves:

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2. Hold the snail in your hand. How does its movement feel? \_\_\_\_\_

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3. Does the snail move in a straight line? Does it stay on the plate or try to move off? \_\_\_\_\_

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4. As the snail moves tip the plate up one way and then the other. Does the snail move more readily up hill or down? Describe. \_\_\_\_\_

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5. Shine a flashlight at the snail as it is moving. Does it stop? Change direction? Come to the light? Describe.

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6. Tap the plate in front of the snail a few times with the tip of your pencil. Does it stop? Change direction?

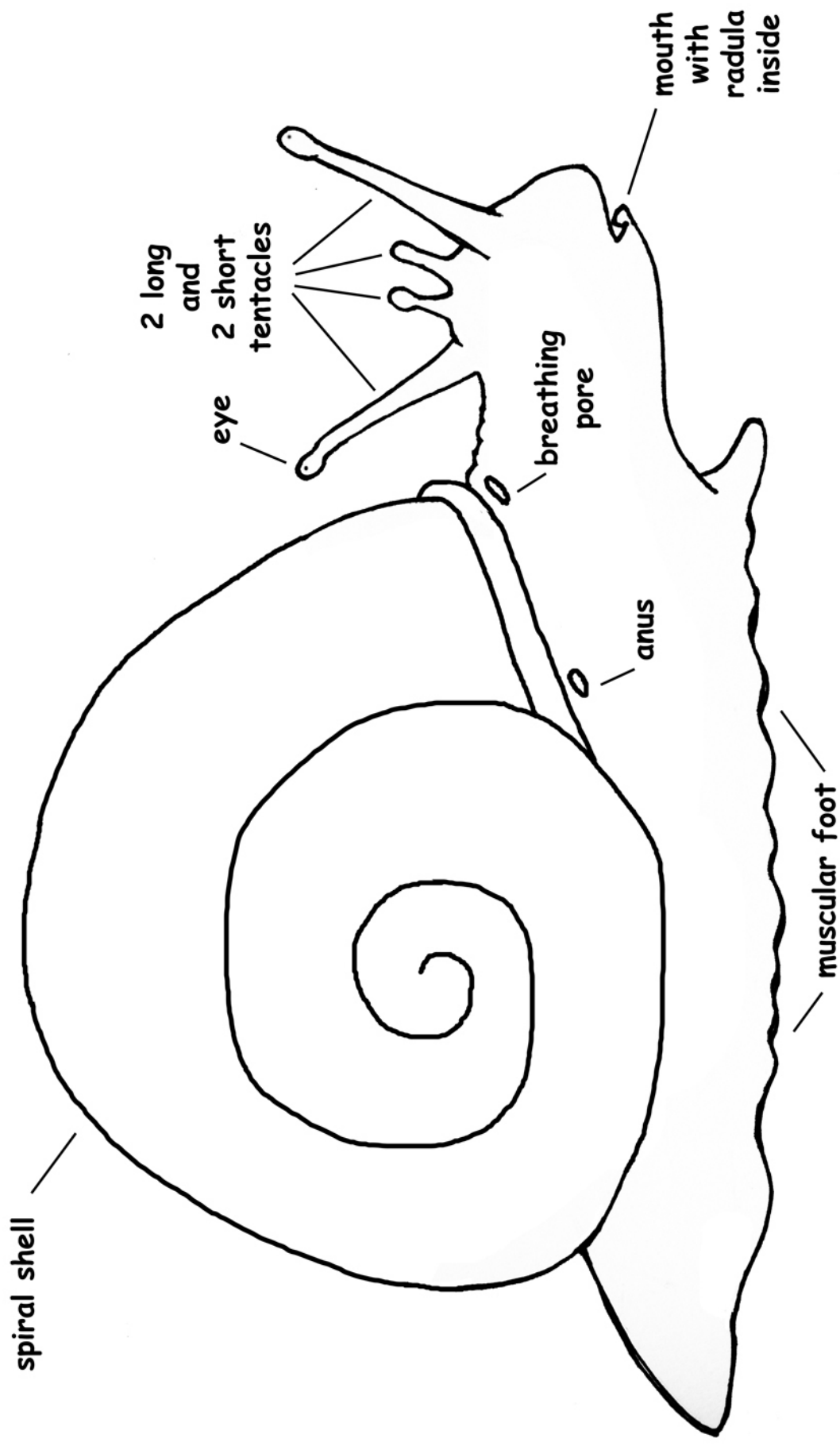
Come to the light? Describe. \_\_\_\_\_

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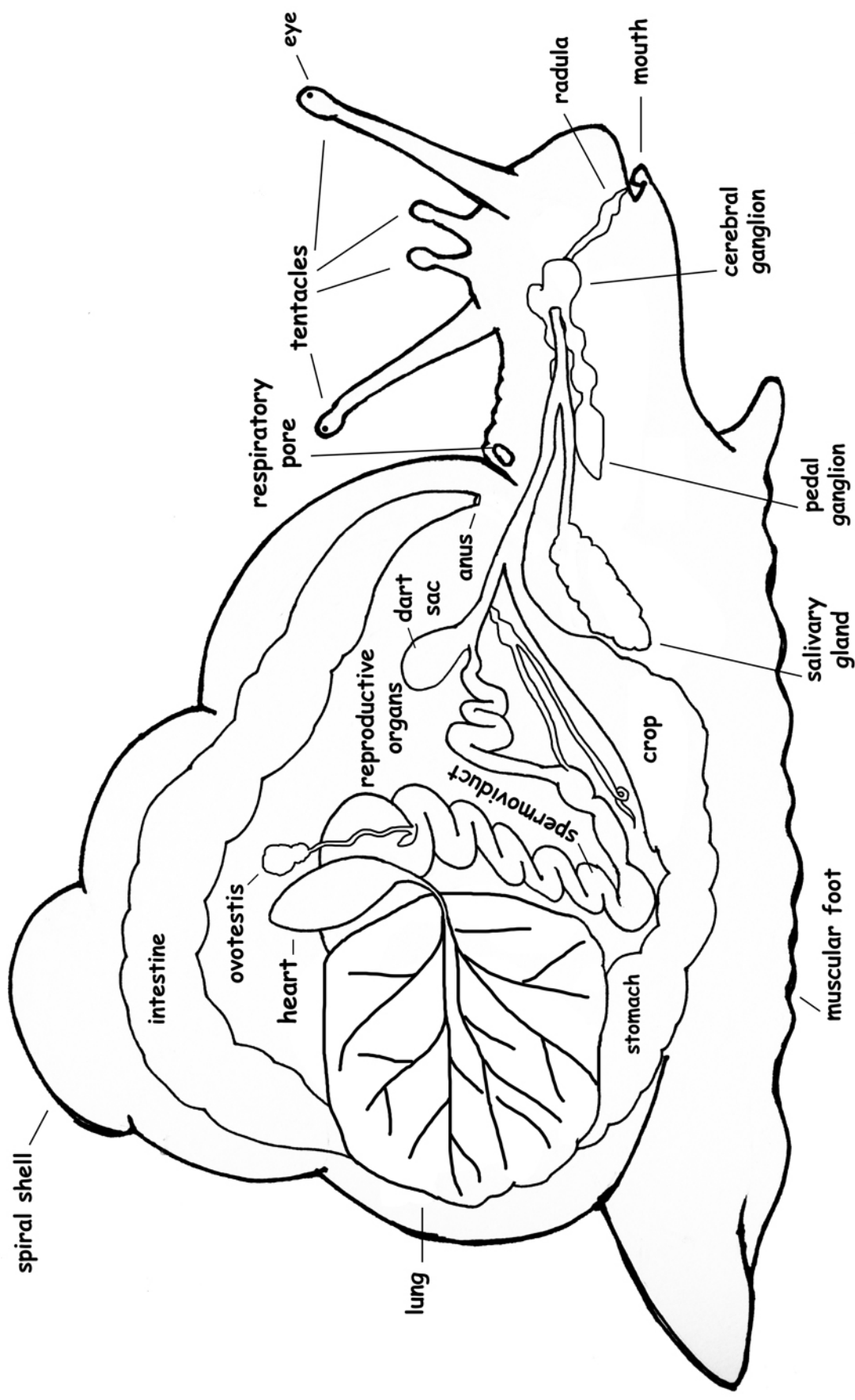
# Snail (Brown Garden)

*Helix aspersa*



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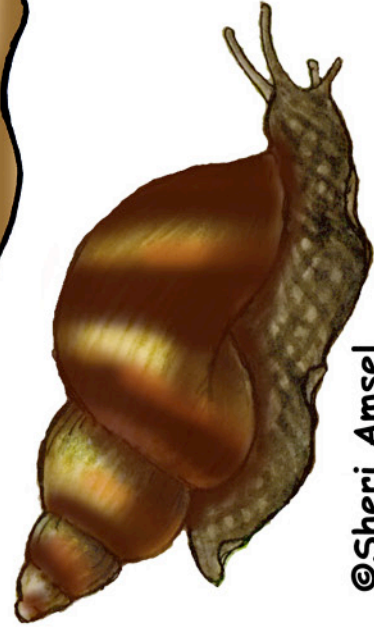
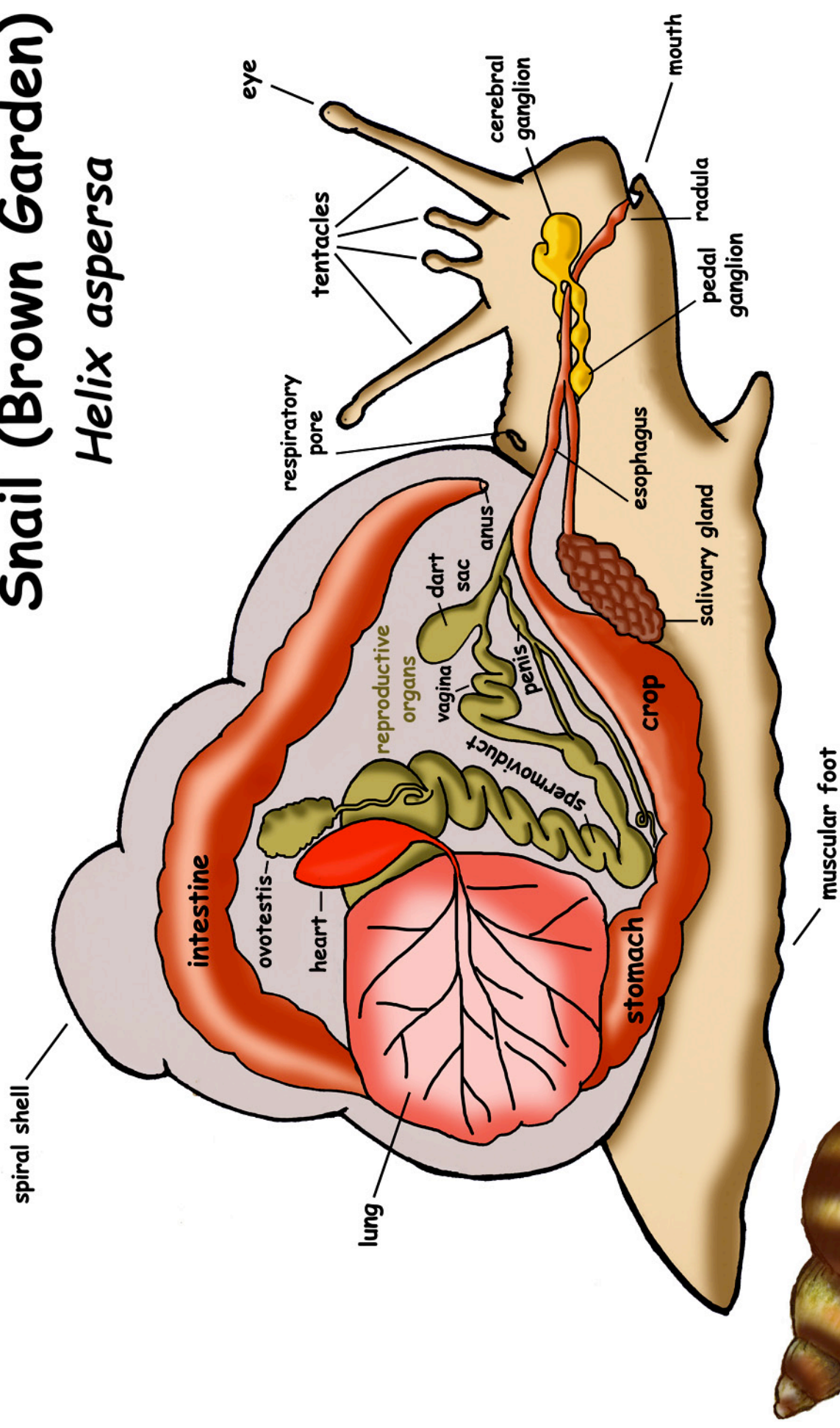
*Helix aspersa*





# Snail (Brown Garden)

## *Helix aspersa*



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