Mink Dissection

During this activity, you will observe and dissect a mink to develop a better understanding of mammalian anatomy. The mink is an excellent organism for dissection purposes due to its size, availability, and similarity to humans. As you proceed, consider how the form of a particular structure fits its overall function. This is an underlying theme in the anatomical study of all organisms.

Background

The American mink, *Neovison vison*, is an agile, semiaquatic member of the family Mustelidae, which includes weasels, otters, and ferrets. Like most members of this family, mink have a slender body with short legs and a long, thick tail. Typical mink have soft, thick, dark brown fur, and are covered with protective oily guard hairs. Their slightly webbed feet make them excellent swimmers. Mink are found throughout North America and typically live in wooded areas near streams, rivers, lakes, or ponds and marshes. Members of the order Carnivora, mink prey upon muskrats, mice, snakes, frogs, and birds. While they have few natural enemies, bobcats or coyotes sometimes kill mink. Humans are their greatest threat.

Mink are territorial. Like other animals in the weasel family, they use a musky and foul-smelling secretion from anal glands to mark their boundaries. The odor is considered by many to be as irritating as that of skunks. These pheromones are not only useful for marking boundaries; they also play a role in defense, courtship behavior, and recognition within a mink population.
Pre-Lab Observation Sheet

Part 1. Directional Terms and Body Planes
Review the following directional terms and body planes. Write a definition for each term. Then, label the directional terms and planes on the mink illustration. Items marked with an asterisk (*) are not in the illustration.

<table>
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<table>
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<td>Transverse plane</td>
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Pre-Lab Observation Sheet (cont.)

Orientation of Body Planes and Directions

1. 
2. 
3. 
4. 
5. 
6. 
7. 
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9. plane 
10. plane 
11. plane
Part 2. Characteristics of the Mink

1. Based on your study, describe what you have learned about the mink's
   (a) physical characteristics.
   (b) range and habitat.
   (c) social behaviors.
   (d) reproductive traits and behaviors.
   (e) diet.

2. Why is the mink a good choice for study and dissection?

3. What are three questions that you have concerning the mink that can only be answered through dissection?
   (1)
   (2)
   (3)
Procedure

During this activity, you will dissect a skinned mink. In the skinning process, sometimes certain features are removed or damaged. If this is the case with your specimen, please refer to the diagrams and observe another specimen if one is available.

This dissection is divided into several parts, each addressing a different body system or set of systems. Before you begin, read the entire procedure carefully. As you follow the step-by-step instructions, record your observations and answers on the Mink Dissection Observation Sheet. Use the diagrams to reinforce what you learn from the procedure, and remember—form fits function.

Part I. External Anatomy

1. The mink is a member of Class Mammalia and Order Carnivora. Examine your specimen carefully. What characteristics or features are observed that help place the mink in these taxa? Record the evidence on your observation sheet.

2. Note the sensory organs concentrated around the head. The **pinnae** (ears), **nares** (nostrils), and **vibrissae** (whiskers) will be easy to observe, although the **vibrissae** (whiskers) have probably been removed from the specimen. Describe how these sensory structures provide the mink with the ability to respond to environmental stimuli. Write your answer on your observation sheet.

3. Examine the eyes more closely. Note the presence of a third eyelid, the **nictitating membrane**. This membrane moves laterally to cover the eye when the animal swims underwater. Another interesting feature of the eye is the **tapetum lucidum**, a reflective layer of tissue on the retina. What is the advantage of having this reflective layer for a nocturnal animal such as mink? Record your answer on your observation sheet.

4. Work with a group that has a mink of the opposite sex, and compare male and female specimens. Note that both sexes have many of the same structures. For instance, there are eight **mammary** glands on the ventral surface (these may have been damaged or removed in the skinning process). In females, these structures are the openings for the mammary glands, which secrete milk for the young; in males, they have no known function. Also, both males and females have an **anus** located just ventral to the tail. Indigestible foodstuffs are eliminated from the body through the anus. Finally, a feature common to members of the weasel family is the presence of **anal glands**. Similar to a skunk’s spray, the mink’s anal secretions are considered repulsive and irritating to many. **Note:** If the anal glands are present, carefully remove them. **Do not puncture or damage these organs.** What uses do you
think these secretions could have to the mink? Record your ideas on your observation sheet.

5. Look closely at your specimen. Females have an external vestibule ventral to the anus. This reproductive opening also serves as a channel for release of urine from the body. The male mink’s penis is considered quite long in relation to the rest of its body. The length of the organ allows sperm to be deposited close to the eggs. Male mink also have a scrotal sac with enclosed testes near the anus. These structures may have been removed during skinning. If so, view another male specimen available in the class. Record the gender of your specimen on your observation sheet.

Part II. Internal Anatomy

6. Place the mink on the tray with its ventral surface facing upward. (Your teacher may provide instructions for stabilizing your specimen with string tied to the limbs and then wrapped around the dissecting tray.) Refer to the image at right, and make the incisions described. Exercise caution while making these cuts; do not damage the underlying tissues. With scissors, make an incision slightly off center at the base of neck. Using scissors or a scalpel, cut caudally through the ribs and continue through the abdominal region. Next, make lateral incisions along the base of the ribs. Make a second set of lateral incisions at the caudal end of the first cut. Use a blunt probe to separate the muscles of the neck region to expose the underlying organs. Finally, use a blunt probe through the caudal end of the abdominal region to expose the pelvic area. Pin the flaps of muscle to the tray to expose the two major body cavities. The cavities are separated by a thin sheet of muscle called the diaphragm. The cavity that is anterior to the diaphragm is the thoracic cavity; the one posterior to the diaphragm is the abdominal cavity. Identify which major organ systems are present in each body cavity. Record your findings on your observation sheet.

7. The most visible organ in the abdominal cavity is the large, brown, five-lobed liver. A thin membrane called the greater omentum, or fatty apron, covers most of the organs just below the liver. This delicate layer of mesentery (connective tissue) keeps the abdominal organs in place and connected to the walls of the cavity. Carefully loosen the greater omentum from the underlying organs, and fold or reflect it anteriorly. Fat is an energy-storing tissue. What benefit is there to having this “fatty apron” covering the digestive organs? Record your answer on your observation sheet.
The Digestive System

The digestive system in mammals chemically and mechanically breaks down food into smaller compounds that can be released into the bloodstream and then transported to body cells. Let’s investigate the specialized organs of this system.

8. Using the diagram below, locate the major organs of the digestive system. Identify the stomach, small intestine, colon (large intestine), and rectum. You will have to reflect the liver with your blunt probe to see the stomach and gallbladder. You will have to reflect the small intestine to observe the colon and rectum. As you identify these organs, describe the relative size, shape, and color of each on your observation sheet.

Figure 4. Major organs of the digestive system.
9. Take a closer look at the stomach of your specimen. It lies on the left side, under the liver. This J-shaped organ is used for food storage as well as for chemical and mechanical digestion. Depending on your specimen, the stomach may be empty or full. Using a scalpel, make an incision along the greater curvature (refer to the diagram) to open the stomach and view its interior. Notice the small folds, called rugae, which form the lining of the stomach. What do you think is the role of rugae in the function of the stomach? Record your thoughts on your observation sheet.

10. The contents of the stomach empty into the duodenum, the first of three sections of the small intestine. At this point, digestive fluids are secreted into the small intestine from the gallbladder and the pancreas. Locate the gallbladder just under the right, middle lobe of the liver. The gallbladder concentrates and stores bile produced by the liver. Bile functions in the emulsification of fats. The long, whitish, granular pancreas can be found within the mesentery that supports the stomach. The pancreas releases several digestive enzymes necessary for the chemical digestion of proteins, lipids, and carbohydrates. These fluids mix with food to form chyme, which travels through the remainder of the small intestine to the colon. Using your scalpel or scissors, carefully cut longitudinally along a portion of the small intestine, and examine the lining with a hand lens. You may see small, fingerlike projections called villi. Each villus also has microscopic hairlike structures called microvilli. These structures greatly increase the surface area of the small intestine. Based on your observations, how does the stomach maximize absorption of nutrients?

11. The colon is the site of reabsorption of water from the remaining indigestible foodstuffs. This organ is divided into three sections, the ascending colon, the transverse colon, and the descending colon. Locate these on your specimen. Locate the rectum, located at the distal end of the colon. Feces are stored here until defecation occurs through the opening called the anus. Make a longitudinal incision along the colon, and then examine the lining with your hand lens. Compare the lining of the colon to the lining of the stomach and the lining of the small intestine. Describe any differences in terms of form and function. Record these comparisons on your observation sheet.

12. In order to better observe the urogenital system later in this exercise, remove most of the digestive system. To do so, use your scissors to cut the esophagus at the most-anterior point of the stomach, below the diaphragm. Then, cut the descending colon anterior to the rectum. Carefully lift the entire gastrointestinal tract out of the abdominal cavity, clipping away any attached connective tissue. Measure and record the total length of the gastrointestinal tract. Then, measure and record the length of the stomach, the small intestine, and the colon. Determine the length of each organ as a percentage of the whole. Document your findings on your observation sheet.
The Respiratory and Circulatory Systems

The respiratory system provides for gas exchange, where carbon dioxide waste is removed and replaced with fresh oxygen entering the bloodstream. The circulatory system functions for the transport of respiratory gases, nutrients, hormones, defense cells, and wastes throughout the body. Mammals possess efficient circulatory systems comprised of highly branched networks of vessels and a four-chambered heart.

13. To expose the trachea, use scissors to extend the midline incision toward the specimen’s chin, being careful not to damage the underlying structures. Gently tease away any surrounding tissue. The trachea is a long tube, with rings of cartilage that provide support and prevent collapse. Pinch this tube with your fingers to feel the rings. Now, follow the trachea caudally down through the larynx (voice box) and then toward the lungs. The trachea splits into two bronchi, which lead into the left and right lungs. The right lung has 4 lobes. How many lobes are present in the left lung? Describe the appearance and texture of the lungs, and explain how this is important to their function in gas exchange. Record your data and description on your observation sheet.

14. Locate the diaphragm, the thin sheet of muscle that separates the thoracic and abdominal cavities. Describe and draw the curvature of this muscle and tell how its contraction to a flattened state enables breathing to occur. Record your description, drawing, and explanation on your observation sheet.

Figure 7. Respiratory system.
15. To examine the heart, it is necessary to remove the pericardial membrane, the sac that surrounds and protects the heart. On your observation sheet, describe and draw the position of the heart relative to the lungs and diaphragm.

16. Remove the heart from the thoracic cavity. Do this by cutting the vessels attached to the heart. Observe the thick, muscular ventricles and collapsed atria. Now, cut the heart into ventral and dorsal halves. To do so, place the heart on the tray, dorsal side down. Place one hand on top of the ventral side of the heart and, using a large knife, cut parallel to the tabletop, midway between the dorsal and ventral sections. Make a clean slice from right to left, and avoid using a sawing motion.
Identify the four chambers of the heart and the vessels that are attached. Trace the path of blood into and out of the heart:

body → vena cava → right atrium → tricuspid valve → right ventricle → semilunar valve → pulmonary arteries → lungs → pulmonary veins → left atrium → bicuspid valve → left ventricle → aortic semilunar valve → aorta → body.

The right side of the heart pumps deoxygenated blood to the lungs for gas exchange. This is the pulmonary circulation. The left side of the heart pumps oxygenated blood to the body. This is called systemic circulation. Compare the thickness of the walls of the right and left ventricles. Why do you think the left ventricle has a thicker muscular wall? Write your explanation on your observation sheet.

The Urogenital System

The urogenital system includes reproductive and excretory organs and structures. The reproductive and excretory systems are often studied together because they share common ducts. The main purpose of the excretory organs is to filter nitrogenous wastes from the blood and remove them from the body in the form of urine. The reproductive organs, of course, are responsible for the production of the egg and sperm and the necessary means for the union of these two special types of cells.

Note: You are expected to be familiar with structures of both sexes, so work with a group that has a mink of the opposite sex in order to complete all of the following steps.

17. Using a blunt probe, extend the incision you made earlier along the ventral midline of the lower abdominal region toward the anus. It is also necessary to cut longitudinally through the pubic symphysis (the area where two pelvic bones meet in front, just above the genital area) with a scalpel. Start your incision slightly to one side to avoid cutting through underlying structures. Cut only partially through the symphysis, and then apply downward pressure to each leg to complete the separation. Carefully separate the connective tissue and fat to distinguish urogenital organs. Expose the bean-shaped kidneys along the dorsal surface of the abdominal cavity. Notice the large renal arteries and renal veins that carry blood into and out of the kidneys. When urine leaves the kidneys, it is transported through the ureters to the urinary bladder. Eventually, stored urine is eliminated through the urethra.

Carefully remove a kidney from your specimen. Make an incision to cut it into ventral and dorsal halves, as you did with the heart. On your observation sheet, describe the internal structure of the kidney. Refer to the labeled image and use the correct terminology.
18. The male's bean-shaped *testes*, which produce sperm, are housed in the *scrotal sacs*. (These sacs might have been removed during skinning, but one or both of the testes may still be present. If not, view another male mink with intact testes.) Locate the spermatic cord that extends from each testis into the abdominal wall and "loops" around the ureter. Each spermatic cord contains the *vas deferens*, blood vessels, lymphatic vessels, and nerves. Remove the tough sheath around the testis to reveal a coiled set of tubules called the *epididymis*, where sperm are stored until released.

Upon ejaculation, the sperm travel out of the epididymis through the *vas deferens* to the urethra. The urethra carries sperm out of the body through the *penis*. The mink penis, unlike that of a human, is enclosed in a sheath that is held along the ventral wall of the abdomen. Another interesting feature of the mink penis is that it contains a bone called the *os penis*, which assists in maintaining erection during copulation. A third feature of the mink's penis is its length. This allows the penis to fit completely through the tube-like vestibule of the female and deposit sperm directly where the uterine horns converge. What is the advantage of the *os penis* in terms of fertilization of the egg? How does this compare to human reproduction? Record your answers on your observation sheet.

![Figure 10. Male urogenital system.](image-url)
19. The paired female gonads are the ovaries, located in the abdomen caudal to the kidneys. They are anchored to the dorsal wall by special ligaments. Coiled oviducts attached to the ovaries receive the mature egg during ovulation. Fertilization usually occurs in the upper third of the oviduct followed by implantation further along in the large, paired uterine horns of the uterus. (In humans, the uterine horns are reduced in size and called the fallopian tubes, where fertilization takes place. The resulting zygote then implants in the uterus.) How is the size of the uterine horns important to the reproductive needs of the mink? Record your answer on your observation sheet.

20. Finally, the uterus extends to the vagina, which is joined by the urethra to form the urogenital sinus. The sinus opens to the outside of the body through the vestibule. How does the reproductive anatomy of the female mink differ from that of the female human? Record your answer on your observation sheet.

21. Disinfect your work area and instruments, and wash your hands thoroughly.
## Mink Dissection Observation Sheet

1. **Class Mammalia and Order Carnivora characteristics**  
   List the observable external features that support the mink’s placement in Class Mammalia and Order Carnivora.

2. **sensory organs (pinnae, nares, eyes, vibrissae)**  
   Describe how the sensory structures of the head (pinnae, nares, eyes, vibrissae) provide the mink with the ability to respond to environmental stimuli.
   - **pinnae:**  
   - **nares:**  
   - **eyes:**  
   - **vibrissae:**

3. **tapetum lucidum**  
   What advantage does the tapetum lucidum provide the mink?

4. **anal gland secretions**  
   What uses do you think anal gland secretions have to the mink?

5. **gender (male or female)**  
   What gender is your specimen?  
   - ☐ Male  
   - ☐ Female

6. **thoracic and abdominal cavity organ systems**  
   Which major organ systems are present in the thoracic cavity?  
   Which major organ systems are present in the abdominal cavity?
   - **thoracic cavity:**  
   - **abdominal cavity:**

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| 7 | **greater omentum**  
What benefit is there to having the greater omentum covering the digestive organs? |
|---|---|
| 8 | **stomach, small intestine, colon, and rectum**  
Describe the relative size, shape, and color of the following organs and structures. |
| (a) stomach |
| (b) small intestine |
| (c) colon |
| (d) rectum |
| 9 | **rugae**  
What is the role of rugae in the function of the stomach? |
| 10 | **absorption of nutrients**  
How does the stomach maximize absorption of nutrients? |
| 11 | **form and function of digestive organs**  
Compare the lining of the colon to the lining of the stomach and the lining of the small intestine. Describe any differences in terms of form and function. |
# length of digestive tract and organs

Measure and record the total length of the gastrointestinal tract. Then, measure and record the length of the stomach, the small intestine, and the colon. Determine the length of each organ as a percentage of the whole.

<table>
<thead>
<tr>
<th>total length of the gastrointestinal tract:</th>
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<tbody>
<tr>
<td>stomach: % of total length:</td>
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<tr>
<td>small intestine: % of total length:</td>
</tr>
<tr>
<td>colon: % of total length:</td>
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## lungs

The right lung has 4 lobes. How many lobes are present in the left lung? Describe the appearance and texture of the lungs, and explain how this is important to their function in gas exchange.

## diaphragm

Describe and draw the curvature of the diaphragm, and tell how its contraction to a flattened state enables breathing to occur.
**heart and lungs**
Describe and draw the position of the heart relative to the lungs and diaphragm.

**chambers of the heart**
(a) Identify the four chambers of the heart and the vessels that are attached.
(b) Why does the left ventricle have a thicker muscular wall than the right ventricle?

(a) __________
__________
__________
__________

(b) __________

**kidneys**
Describe the internal structure of the kidney.
| 18 | **fertilization in mink vs. human**  
What is the advantage of the os penis in terms of fertilization of the egg?  
How does this compare to human reproduction? |
| 19 | **uterine horns**  
How is the size of the uterine horns important to the reproductive needs of the mink? |
| 20 | **difference between mink and human female anatomy**  
How does the reproductive anatomy of the female mink differ from that of the female human? |
| | **other important data**  
Write and/or draw any other information you feel is important to remember about mink anatomy. |
Questions

1. What observable characteristics provide evidence of the predatory lifestyle of the mink?

2. What structures or features enable the mink to be nocturnal?

3. Discuss the use of pheromones in the weasel family. How do other organisms use these chemical signals? Provide two examples.

4. Draw the digestive tract of the mink from mouth to anus. Label each organ.
5. Which organ of the mink's digestive tract is longest? Why?

6. How many heart chambers are present in mammals? Birds? Reptiles? Amphibians? Fish? Discuss the structure of the heart in terms of these animal classes and their ability to transport oxygen efficiently to body cells.

7. Draw the internal features of the mink heart. Label all chambers, valves, and vessels. Using a blue pencil, draw arrows that trace the pulmonary circulation. Using a red pencil, draw arrows that trace the systemic circulation.

8. Explain the relationship between the respiratory system and the circulatory system.
9. Describe the action of the diaphragm in the mechanical process of breathing.

10. Explain the relationship between the digestive system and the circulatory system.
Glossary

Abdominal cavity. Located posterior to the diaphragm. Contains most internal viscera, including the liver, stomach, intestines, and gonads.

Anal gland. One of the paired organs near the rectum that produce pheromones, communicative scents that play a role in courtship and sexual behavior. Pheromones are also used for defense, for marking boundaries, and for recognition of individuals within a population.

Anus. External opening through which feces exits the digestive system.

Aorta. The large artery that carries oxygenated blood away from the left ventricle of the heart.

Artery. A blood vessel that carries blood away from the heart.

Atrium (pl., atria). One of two upper chambers of the heart; the left atrium receives oxygenated blood into the heart via the pulmonary veins, and the right atrium receives blood from the superior and inferior vena cava.

Bicuspid valve. Atrioventricular valve between the left atrium and ventricle; also called the mitral valve.

Bile. A greenish-yellow fluid secreted from the liver that is released into the duodenum of the small intestine. Bile aids in the process of digestion.

Bronchus (pl., bronchi). One of the paired branches of the trachea; one bronchus enters each lung and subdivides many times to form bronchioles.

Chyme. Mixture of partially digested food and enzymes from the stomach.

Colon. Structure in the digestive tract that comes after the small intestine. Its primary purpose is to extract water from feces, which is formed here and excreted through the anus. Consists of three parts named for their directionality (ascending, transverse, and descending).

Diaphragm. A muscle that separates the thoracic and abdominal cavities. Contraction of the diaphragm enlarges the thoracic cavity, causing a decrease in intrathoracic pressure. As a result, air is drawn into the lungs.

Duodenum. The first part of the small intestine, connecting the stomach to the jejunum. The location of further breakdown of food after breakdown in the stomach.

Epididymis. Tightly coiled tube attached to the testis; stores sperm until their release through the vas deferens.

Esophagus. Muscular tube through which food passes from the pharynx to the stomach.

Gallbladder. Small sac attached to the liver; stores bile produced by the liver.

Greater omentum. Portion of the dorsal mesentery attached to the greater curvature of the stomach; supports the stomach.

Heart. Muscle in the thoracic cavity that pumps blood through the body.

Kidneys. Bean-shaped excretory organs that remove excess water and waste products from the blood.

Larynx. Cartilaginous structure between the glottis and the trachea.
Liver. Accessory digestive organ with many functions, including fat digestion and storage, bile production, glucose metabolism, and detoxification; the largest visceral organ.

Lungs. The principal organ of the respiratory system; functions in gas exchange between the body and the atmosphere.

Mammane. Structures located on the ventral surface of the abdomen of mink. In females, these are external openings for mammary glands; in males, they have no known function.

Mesentery. A fold of connective tissue that supports internal organs.

Nares (sing., naris). Nostrils. Incurrent openings for the respiratory system.

Nictitating membrane. A third eyelid in certain vertebrates that can be extended from the medial edge of the eye toward the center.

Os penis (bacculum). Ossified structure of the mink penis that assists in maintaining an erection during copulation; allows the male to insert the penis fully into the long vaginal canal of the female.

Ovaries. Female gonads. Release eggs into the fallopian tubes.

Oviducts. Passageway for egg cells from the ovaries to the uterine horns.

Pancreas. Accessory gland with both an endocrine portion, producing insulin and glucagon, and an exocrine portion, producing digestive enzymes.

Penis. Copulatory organ of the male; transports semen and urine.

Pericardial membrane. Sac of specialized peritoneum that encloses the heart; surrounded by pericardial fluid that cushions and protects heart.

Pinna (pl., pinnae). External ear; channels sound waves into the external acoustic meatus.

Rectum. The short, terminal portion of the colon; connects the large intestine to the anus.

Renal arteries. Arteries that branch from the dorsal aorta and supply blood to the kidneys.

Renal veins. Veins that drain blood from the kidneys.

Rugae. Several longitudinal folds in the wall of the stomach that allow for expansion.

Spermatic cord. Contains the spermatic vessels, nerves, lymphatic vessels, and vas deferens; extends between the testes and the inguinal canal.

Scrotal sacs. Sacs that hold testes and epididymides; extends externally from the body.

Semilunar valve. Valve between each ventricle and its efferent artery; prevents backflow of blood.

Small intestine. Location of most absorption of food particles. Absorption is performed by villi, small fingerlike projections from the walls of the small intestine.

Spleen. Large organ found adjacent to the stomach; accessory organ to the circulatory system. Functions in adults as a blood reservoir; also produces some blood cells during developmental stages.

Stomach. Organ responsible for the breakdown of food into absorbable particles. Located in the digestive tract between the esophagus and the small intestine.

Tapetum lucidum. Special tissue on the choroid layer of the retina of some mammals; it increases the
light gathering ability of the eye for enhanced night vision.

**Testes.** Organs responsible for the production of sperm.

**Thoracic cavity.** Body cavity that contains the heart and lungs.

**Tricuspid valve.** Heart valve between the right atrium and the right ventricle.

**Ureter.** Duct that transports urine from the kidney to the urinary bladder.

**Urethra.** Duct that transports urine from the urinary bladder to the exterior; in males, also carries semen.

**Urinary bladder.** Expandable sac that stores urine before its release through the urethra.

**Urogenital sinus.** Cavity that surrounds both the urethral and vaginal openings.

**Uterine horns.** Branches of the uterus that allow for multiple-birth litters.

**Uterus.** Female reproductive organ that holds developing fetuses. In mink, the uterus has two branch-like projections that are referred to as uterine horns, which can accommodate several fetuses simultaneously.

**Vagina.** Muscular tube at the terminus of the female reproductive tract.

**Vas deferens.** Connects the epididymis to the urethra and functions in the transport of sperm.

**Veins.** Blood vessels that carry blood toward the heart. Veins have thinner walls than arteries, and contain valves to prevent the backward flow of blood.

**Ventricles.** The two chambers of the heart (right and left ventricle) that pump blood to the body through the pulmonary artery and the aorta. Because it pumps blood throughout the body, the left ventricle is typically larger than the right ventricle, which pumps blood solely to the lungs.

**Vestibule.** External opening of the vagina.

**Vibrissae (whiskers).** Long, thick hairs used in tactile sensation.

**Villi.** Small, fingerlike projections that line the small intestine and contain microvilli. Responsible for absorbing nutrients from food traveling through the intestine. Villi increase the surface area of the intestine to allow greater nutrient absorption.