38.1 Dissection in Lab

Biology

Summarize main points from each video.

Video Title / topic _____

Video Title / topic _____

Video Title / topic _____

Topic Introduction

Summarize your understanding of each paragraph.

Dissection is the dismembering of the body of a deceased animal or plant. High school biology classes often have students dissect frogs. The frogs or other small animals are preserved in formaldehyde.

Lab work in high school emphasizes one or more aspects of work performed in a commercial laboratory. High school frog dissections emphasize lab procedures, lab safety, appropriate use of equipment and data gathering.

Students must follow lab procedures and lab safety steps. Failure to follow the procedures will result in an unsatisfactory result. Failure to follow lab safety steps may result in injury to self – or others.

Equipment used includes dissection pins, small scissors and a #22 broad blade scalpel. Dissection pins are small needles used to pin frog hands and feet to the dissection tray. Scissors and scalpel are used in combination to open the animal and make incisions.

Read/Summarize Text

1. **Read the passage.**
2. **Underline key expressions in each sentence.**
3. **Re-write each word (or expression) you underlined.**
4. **Summarize the passage.**

General Instructions for Dissecting a Frog

1

1. Place the frog in the dissecting pan ventral side up.
2. Use scissors to lift the abdominal muscles away from the body cavity. Cut along the midline of the body to the forelimbs.
3. Make transverse (horizontal) cuts near the arms and legs.
4. Lift the flaps of the body wall and pin back.
5. Locate each of the following organs prior to removing them: Fat Bodies; Peritoneum; Liver; Heart; Lungs; Gall Bladder; Stomach; Small Intestine; Large Intestine; Spleen; Esophagus.
6. Remove organs for closer examination.

2

Adapted from https://www.biologycorner.com

Re-write words you underlined

3

_____ _____ _____

_____ _____ _____

Using a complete sentence, summarize or rephrase the passage

4

Read Text for Comprehension

Read this page for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

<u>TEENAGE LANGUAGE in physiology</u>. Presented here, find an attempt at teenager language to categorize major systems in the body

Teen: selfies

Actual: skeletal, muscular, integumentary

Teen: eating, breathing, #1 & 2

Actual: digestive; respiratory; urinary

Teen: sleeping, just thinking, thinking about sex

Actual: endocrine, nervous, reproductive

Teen: blood and goo

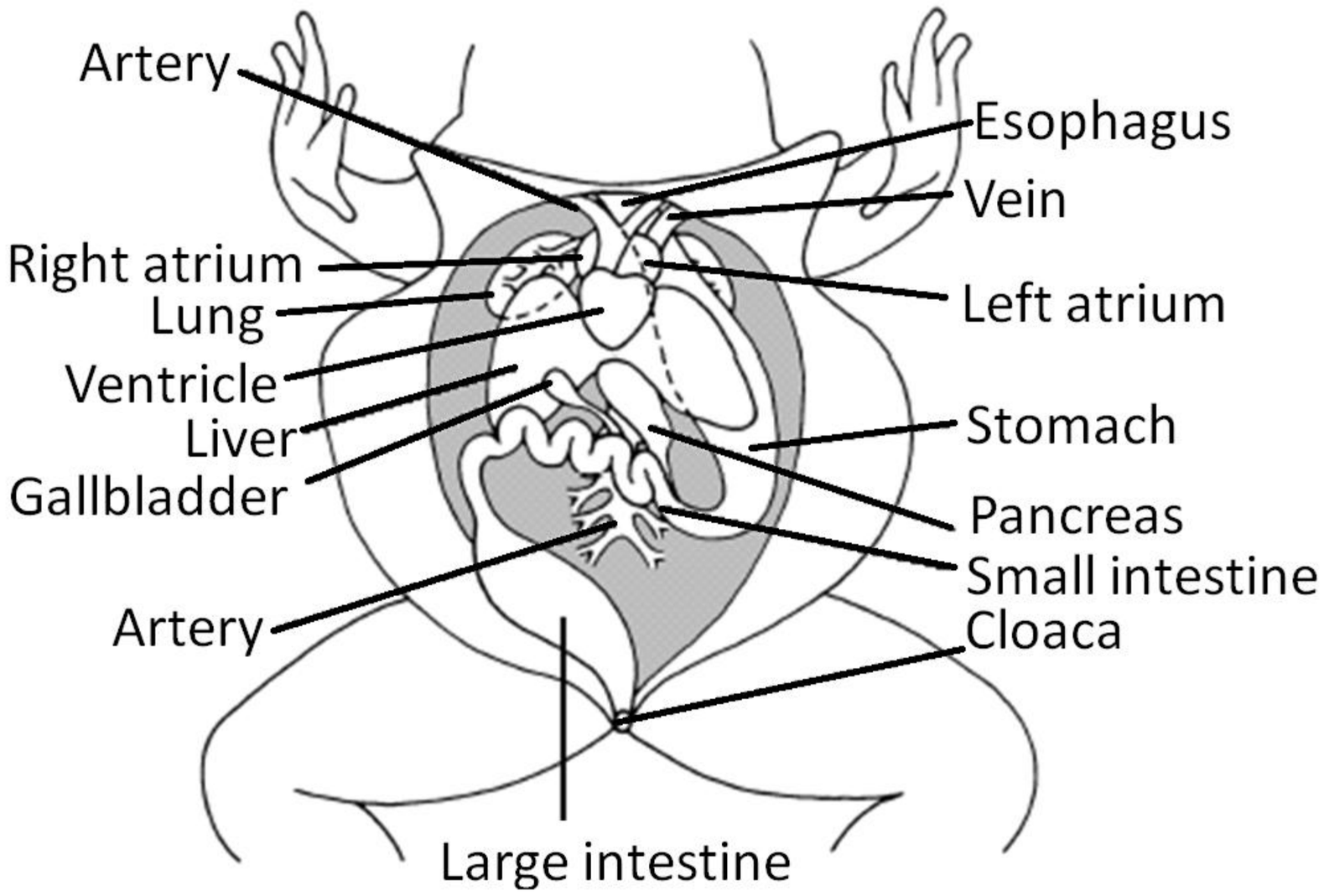
Actual: circulatory, lymphatic

Match these descriptions to the teen descriptions

Skeletal	hard whitish tissue making up the skeleton
Muscular	helps movement of the body or materials through the body
Integumentary	comprises the skin and similar protectors of the body
Digestive	food is eaten and acted upon by physical and chemical means
Respiratory	an exchange of oxygen and carbon dioxide takes place
Urinary	regulates water content & salt with the excretion of urine
Endocrine	glands secrete hormones and similar chemicals into the blood
Nervous	network of brain, cells & fibers that transmits nerve impulses
Reproductive	organs and parts which function in reproduction
Circulatory	heart, blood vessels, blood, lymph - circulates body fluid
Lymphatic	scavenges fluids and proteins which escaped cells and tissue

Draw Illustration

Copy and Label the Illustration in the Space Provided



Draw (Copy) the Illustration Here

https://www.biologyjunction.com/frog_dissection.htm.

Identifying the Organs

Adapted from https://www.biologycorner.com

Fat Bodies Spaghetti shaped structures that have a bright orange or yellow color, if you have a particularly fat frog, these fat bodies may need to be removed to see the other structures. Usually they are located just on the inside of the abdominal wall.

Peritoneum A spider-web like membrane that covers many of the organs; you may carefully pick it off to get a clear view.

Liver This is the largest structure of the body cavity. This brown colored organ is composed of three lobes. The liver is not primarily an organ of digestion, it does secrete a digestive juice called bile. Bile is needed for the proper digestion of fats.

Heart At the top of the liver, the heart is a triangular structure. The left and right atrium can be found at the top of the heart. A single ventricle located at the bottom of the heart. The large vessel extending out from the heart is the conus arteriosis.

Lungs Locate the lungs by looking underneath and behind the heart and liver. They are two spongy organs.

Gall Bladder Lift the lobes of the liver, there will be a small green sac under the liver. This is the gall bladder, which stores bile. (hint: it kind of looks like a booger).

Stomach The stomach curves from underneath the liver. The stomach is the first major site of chemical digestion. Follow the stomach to where it turns into the small intestine. The pyloric sphincter valve regulates the exit of digested food from the stomach to the small intestine.

Small Intestine Leading from the stomach. The first straight portion of the small intestine is called the duodenum, the curled portion is the ileum. The ileum is held together by a membrane called the mesentery. Absorption of digested nutrients occurs in the small intestine.

Large Intestine As you follow the small intestine down, it will widen into the large intestine. The large intestine leads to the cloaca, which is the last stop before solid wastes, sperm, eggs, and urine exit the frog's body.

Spleen Return to the folds of the mesentery, this dark red spherical object serves as a holding area for blood.

Esophagus Return to the stomach and follow it upward, where it gets smaller is the beginning of the esophagus. The esophagus is the tube that leads from the frogs mouth to the stomach. Open the frogs mouth and find the esophagus, poke your probe into it and see where it leads.

Show-Off Your Smarts!

Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

Q1. How can this information be applied to a young-person's life?

Q2. How does this information apply to (or impact) communities?

Q3. When do scientists need to apply this information? How?

Q4. How would a person from 100 years ago view this information?

Q5. How does this topic connect to other science topics or math?

Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.