MAKE A FROG SANDWICH

Student Instructions

To make your FROG SANDWICH, you will need to label and color the organs, bones and major systems of a frog. You will then need to cut parts out and glue them together. All the information you need is in this packet and in the other resource materials provided.

Although you must do – and be responsible for – your own work, feel free to consult, challenge and question other students. Good scientists collaborate and so should you!

Let's get started.

FROG BODY/DORSAL VIEW:

The frog body consists of a **head, trunk, forelimbs and hind limbs.** The dorsal view (**figure 1**) shows what a frog looks like laying on its stomach. Label and color these parts of a frog's body:

1. Eye
2. Nicitating membrane
3. Nostril
4. Tympanic membrane
5. Head
6. Trunk
7. Forelimb
8. Hind limb

DIGESTIVE SYSTEM

The digestive system includes the ***alimentary canal*** which runs from the mouth – also called the ***buccal cavity*** – all the way to the ***cloaca***. This system processes food and waste, and includes a variety of parts.

The ***tongue*** is used to catch prey. ***Vomerine teeth*** are used for holding prey until pressure – supplied in part by eyes turned inside out – can push food down a frog's throat. The ***esophagus*** conducts food through the body cavity on its way to the ***stomach***, a saclike receptacle used for storing food, although some digestion does take place there.

The stomach narrows to become the ***small intestine***, which digests food further, before merging with the ***large intestine***, which absorbs water and packages fecal material. The large intestine opens into the ***cloaca***, which empties wastes from the body. The ***liver*** receives nutrients from the intestines, then stores and releases them as needed. The liver also produces bile, a substance which allows

fats to be digested. ***Bile*** is stored in the ***gall bladder***. Other enzymes in the ***pancreas*** also assist in the chemical digestion – or breakdown – of fats, proteins and sugars. The ***spleen*** breaks down old red blood cells and produces new ones.

Cut out the digestive system (**Figure 2**) and oral cavity (**Figure 3**) and glue these parts onto the next ventral view of your frog (**Figure 4**). Now label and color these parts:

1. Tongue
2. Maxillary teeth
3. Vomerine teeth
4. Internal nostril and auditory orifice
5. Stomach
6. Small intestine
7. Large intestine
8. Liver
9. Gall bladder
10. Pancreas
11. Spleen

URINARY SYSTEM / MALE REPRODUCTIVE SYSTEM:

The urinary system filters out chemical wastes the body can't use. Made up of thousands of tinytubes, or tubules, the ***kidneys*** filter fluid waste, or ***urine***, from the blood. Tubules deliver urine to the ***bladder***, which stores it until it is released to the ***cloaca***, which empties it from the body.

In the male reproductive system, the ***testes*** produce sperm, which are also discharged from the ***cloaca***.

Cut out the urinary system male reproductive system (**Figure 5**) and glue it onto the next ventral view of your frog (**Figure 6**). Label and color these parts:

1. Kidney
2. Bladder
3. Cloaca
4. Testes

<u>URINARY SYSTEM / FEMALE REPRODUCTIVE SYSTEM</u>:

In the female reproductive system, the ***ovaries*** hold eggs, which migrate through the ***oviducts*** to the ***uterus*** where they are stored. Eggs are released from the uterus to the ***cloaca*** where they are discharged from a female's body to be fertilized by a male's sperm.

Cut out the urinary system and female reproductive system (**Figure 7**) and glue it onto the next ventral view of your frog (**Figure 8**). Now label and color the following parts:

1. Kidney
2. Bladder
3. Ovary / eggs
4. Oviduct
5. Uterus
6. Cloaca

You now have a completed, colored and labeled FROG SANDWICH!

Exchange your sandwich with a partner, compare and check your work.