Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Crayfish Dissection

External Anatomy Proficiency

1. Pass off with Mrs. Smith the following body parts – BEFORE CUTTING YOUR CRAYFISH
   1. Abdomen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Cephalothorax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Swimmerets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Walking legs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Cheliped \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Rostrum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. Eyes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   8. Telson \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   9. Uropod \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Sexing your Crayfish
   1. Observe the appendages on the abdomen.
   2. The first 5 have swimmerets.
   3. Males – first two pairs of swimmerets are hard and modified for transferring sperm – also find the sperm ducts where the fourth or fifth pair of walking legs attaches.
   4. Females – all swimmerets are soft. Find the genital pore near where the 3rd pair of walking legs attaches.

What sex is your crayfish?

What is the purpose of testes?

What is the purpose of the ovary?

1. Place your crayfish in a dissecting pan – ventral side down - and carefully remove the carapace as follows:
   1. Carefully insert your scissors under the lower caudal (posterior) edge of the carapace, and cut all the way up to the rostrum (lift the carapace up with the forceps as you go)
   2. Cut across the carapace just behind the eyes this will open up the carapace – BE CAREFUL WHEN YOU LIFT IT UP SO YOU DON’T RIP STUFF.
2. The thin tissue covering the internal organs is the epidermis – this is what makes the exoskeleton.
3. Note the gills – what are they used for?
   1. What happens to the gills when you move the walking legs?
4. Remove the gills from one side and carefully separate the muscles in the cephalothorax to show the heart (it is light colored) - Crayfish have an open circulatory system – what does this mean?
5. Remove the heart and cut out the sides of the cephalothorax to expose the organs underneath. The two light colored masses extending on each side of the body into the head are digestive glands.
6. Between these digestive glands you should see a small pair of white reproductive organs in the male – if you have a female it will probably have a large mass of dark colored eggs. Take out the eggs before proceeding.
7. To locate the intestine – insert the point of the scissors under the dorsal side of the exoskeleton and cut back to the telson.
8. Spread the exoskeleton and the intestine is the tube on the topside of the muscles of the abdomen.
9. Trace the intestine forward to the large, thin-walled stomach. Carefully cut into the stomach and examine the interior walls.
   1. What do you notice?
   2. These tooth-like structures aide in digestion – how?
   3. Does your crayfish have any food left in its stomach?
10. Now remove all of the organs by cutting the short esophagus below the stomach and the bands of muscle holding the stomach just behind the eyes. You should be able to lift out most of the internal organs in one piece.
11. Clean out the remaining tissues in the head so that the green glands are visible (they are green in fresh specimens – yellowish in preserved ones)
    1. Their function is to remove nitrogenous waste from the “blood”. Which survival technique is this used in?

Nervous system

1. Brain – a small lobed white organ just behind where the eyestalks join the body.
2. Ventral nerve cord
   1. Which side of the body is the ventral side?
   2. Along the length of the nerve cord are ganglia – which are where the nerves come from that go to the limbs and organs
   3. Each body segment or **somite** has its own ganglia (although some are fused)
3. What domain are crayfish in?
4. What kingdom?
5. What phylum?
6. What subphylum?
7. What order?