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

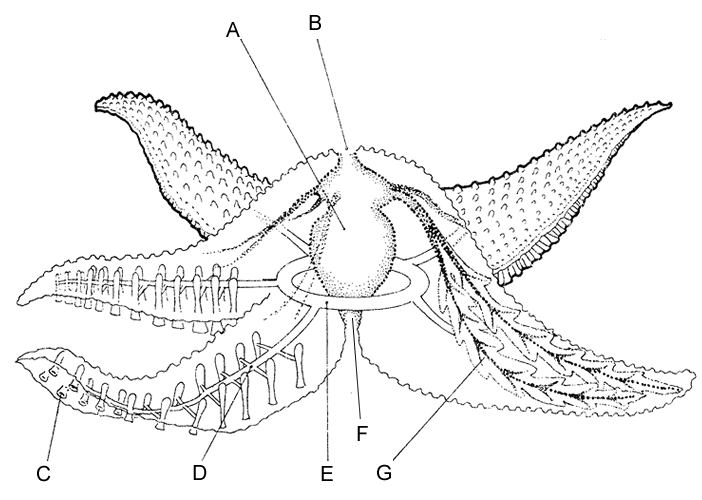
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Starfish Dissection

External Anatomy Proficiency

1. Pass off with Mrs. Smith the following body parts – BEFORE CUTTING YOUR STARFISH
   1. Aboral surface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Oral surface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Mouth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Central body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Arms (or rays) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Eyespots \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (can’t really see but where should they be?)
   7. Spine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   8. Anus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   9. Madreporite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   10. Tube foot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   11. Ambulacral groove \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   12. Eyespot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Label the parts on this starfish**



1. Check out the skin on the aboral side!!!
   1. First feel the skin with your hand – describe the texture.
   2. Use the dissecting scope to look at the spines.
   3. Some spines look different from others.
      1. Some bumps are used to absorb oxygen (dermal branchiae)
         1. What survival technique is this?
      2. Some bumps are pincher like (pedicellaria) – these are used to clean their skin and some studies show they are used to capture prey!
         1. What survival technique is this?
2. How many arms (rays) does your starfish have?  
   1. What type of symmetry do they have?
3. Locate the madreporite.
   1. What is the purpose of the madreporite?
   2. What body system is this part of?
4. Look at the tip of the arm (ray)- you need the dissecting scope.
   1. Locate the eyespot.
   2. What do eyespots detect?
   3. What survival technique do eyespots help accomplish?
5. Now put the starfish on the oral side.
   1. Locate the mouth, with the oral spines surrounding it.
   2. What do you think these spines could be used for?

1. Now go back to the aboral side – you are now ready to start the dissection.
   1. Cut off the tip of a body part (ray).
   2. Now cut a window in the top part of the ray.
2. Inside each ray, locate two long digestive glands called pyloric cecum. These make enzymes to digest food in the stomach.
   1. What survival technique do these organs help accomplish?
3. Cut a circular flap of skin from the central disk. (You will also have to cut around the madreporite in order to remove this flap)
4. Observe the stomach under the central disk.
   1. The stomach aides in which survival technique?
5. Remove the pyloric cecum from the dissected ray. Find the gonads (testes or ovaries) underneath. These may be small if the starfish is NOT in breeding season.
   1. Why do you think they would be smaller when it isn’t breeding season?
   2. What survival technique do gonads help accomplish?

1. Now look at the edge of the ray – and cut off the tip. Find the tube feet.
   1. Locate the bulb-like top of a tube foot.
   2. What is this structure called?
2. The canal that connects 2 ampullae together is called the lateral canal. It connects to the larger canal that goes the length of the ray.
   1. What is the name of this canal?
   2. This canal that extends the length of the ray connects to a circular canal in the central body.
      1. What is this circular canal called?
   3. This circular canal is connected to the outside by the stone canal.
      1. What is the opening to the outside in the water vascular system called?

1. Inside the walls of the ray you will find hard disks. These are part of the skeleton.
   1. What type of skeleton do starfish have?
   2. What compound is their skeleton made out of – also describe the structure.

1. On which surface are these parts of a starfish visible? (you are filling in oral or aboral)
   1. Mouth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Madreporite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Tube feet \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Oral spines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Eyespots \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Ambulacaral groove \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. Anus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Name the following for the starfish you dissected:
   1. Domain
   2. Kingdom
   3. Phylum
   4. Class