

WHAT'S INSIDE A CLAM?

The clam has an upper and lower shell, hinged together and held shut by incredibly strong muscles called **adductor muscles**. Inside the shell there is a thin membrane called the **mantle**. The mantle uses calcium from the water to make the shell.

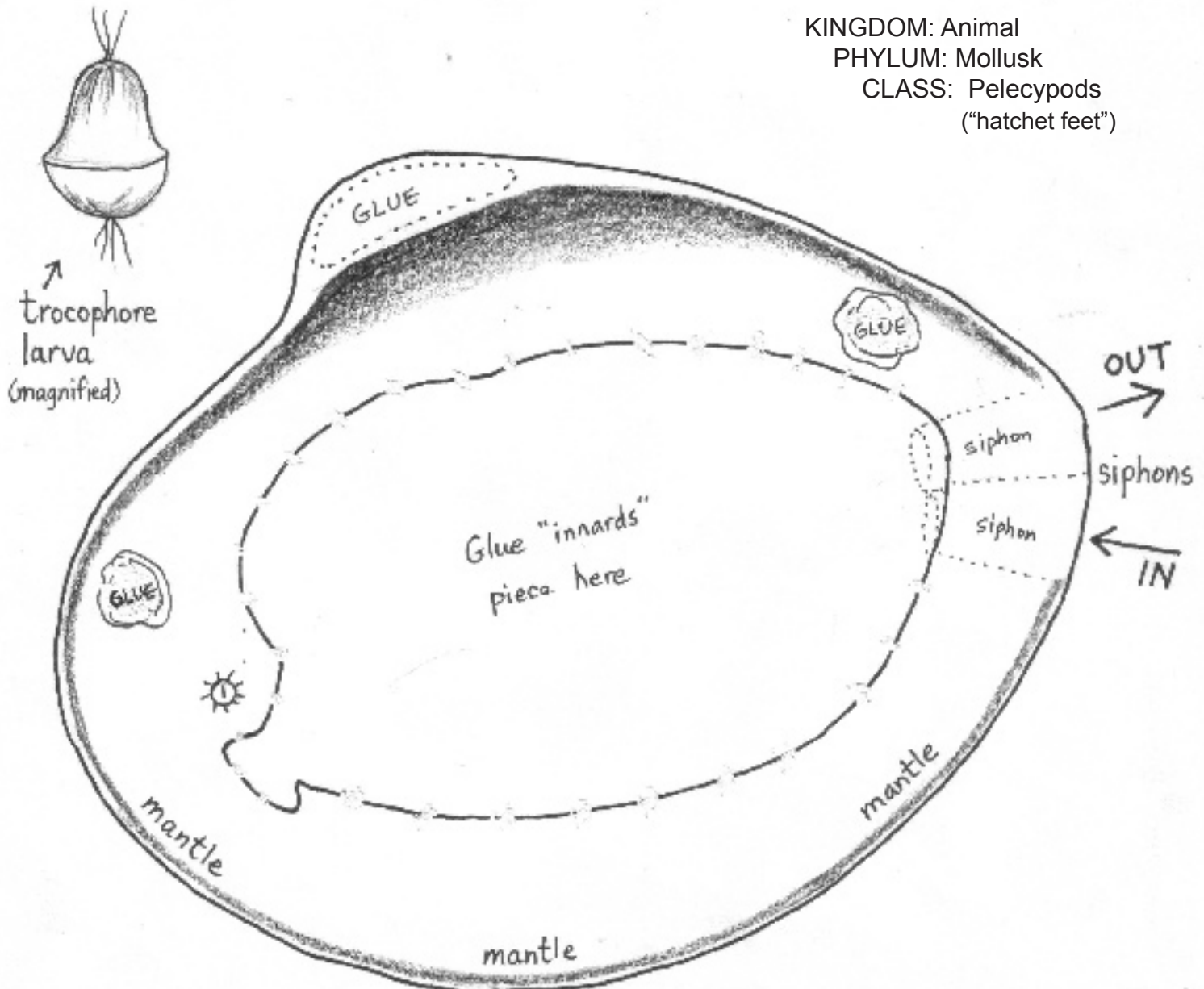
The clam has two tubes called **siphons**; one for sucking water in and the other for spitting it back out. The water drawn in by the siphon flows over the **gills**, giving the clam oxygen, then it passes on to the mouth. Little flaps called **palps** pull microscopic plankton and debris out of the water and into the mouth. The food is digested by the **digestive gland**, then moves on into the **intestines**. Finally, it dumps out right near the exit siphon, where it is flushed out.

The clam has one **foot**, shaped somewhat like a hatchet. It can stick the foot outside the shell and use it to move around or to dig itself down into the sand.

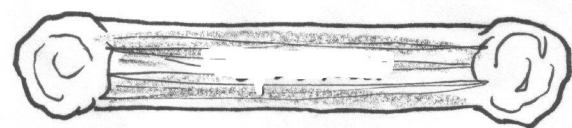
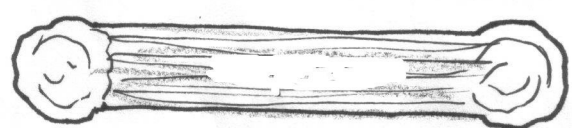
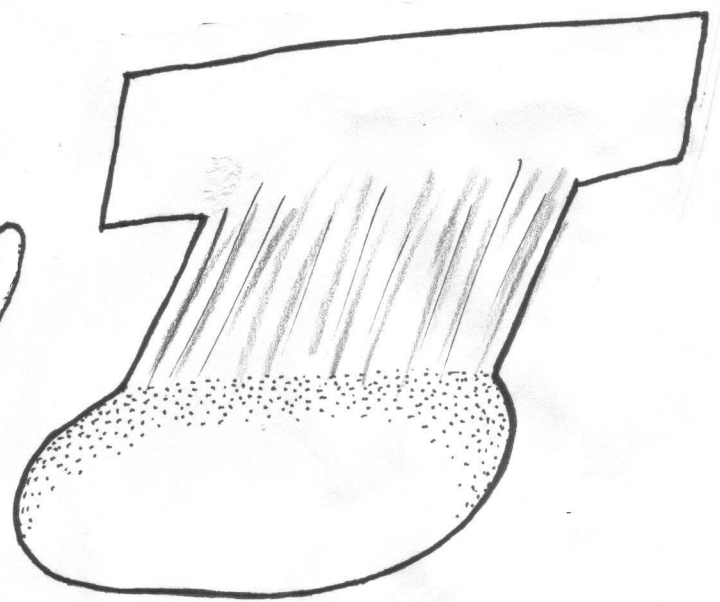
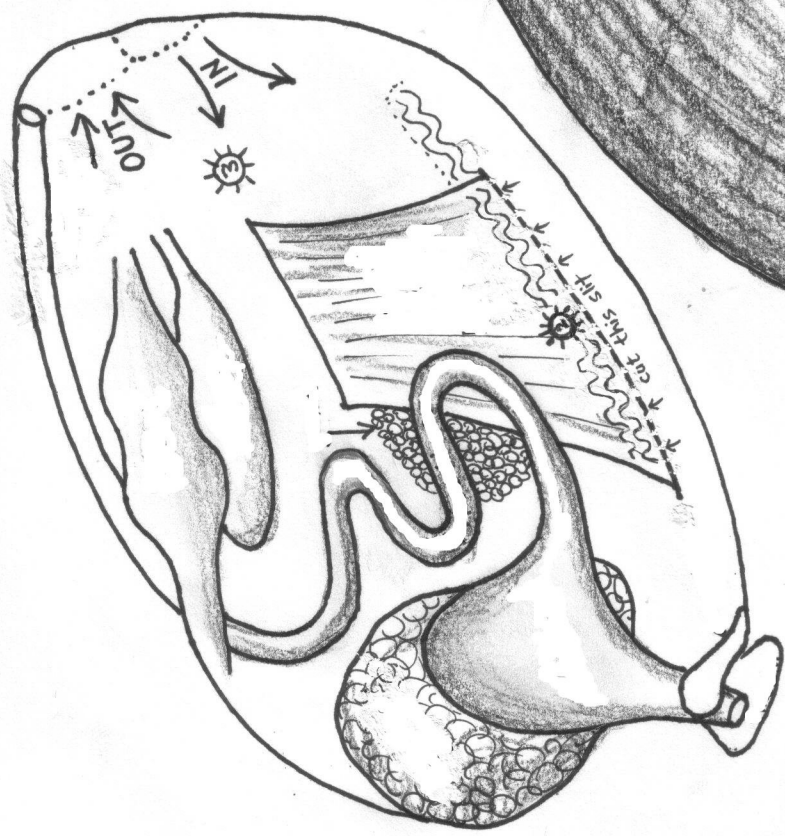
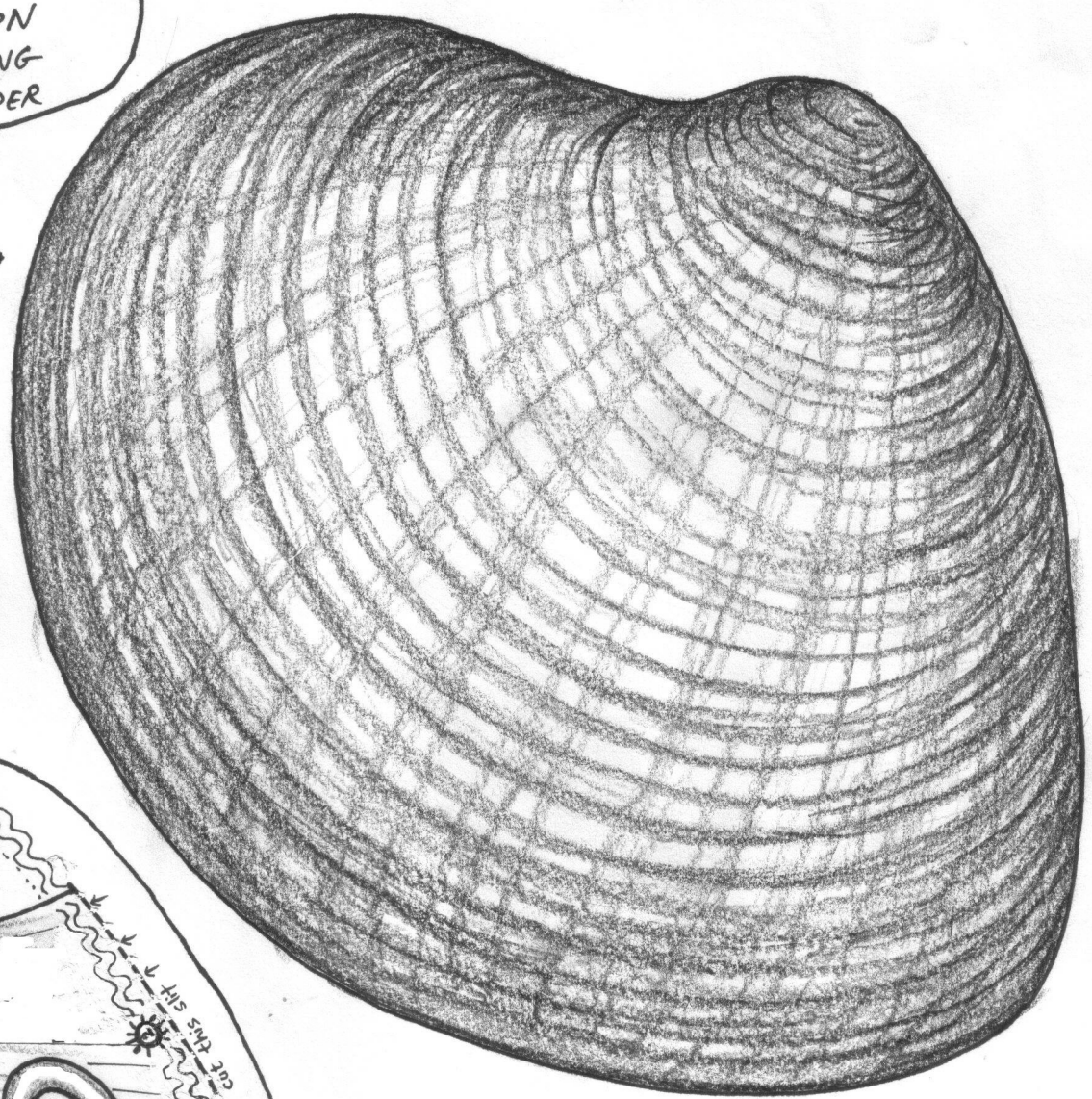
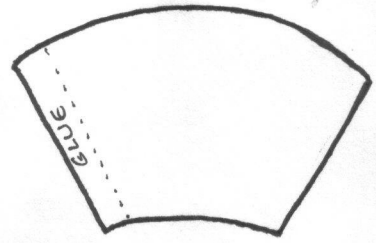
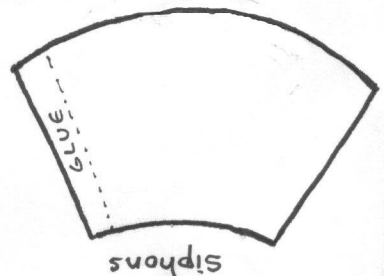
The clam has a simple **heart**, but its blood is clear, not red.

Some species of clams have separate males and females, while other species have both male and female parts on the same clam. The reproductive glands are called **gonads**. All clams produce little free-swimming larva called **trocophores**.

KINGDOM: Animal
PHYLUM: Mollusk
CLASS: Pelecypods
("hatchet feet")

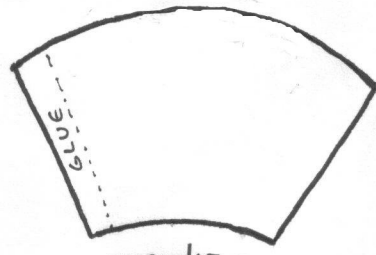


GILL PATTERN
CUT 2 FROM TRACING
PAPER OR TISSUE PAPER

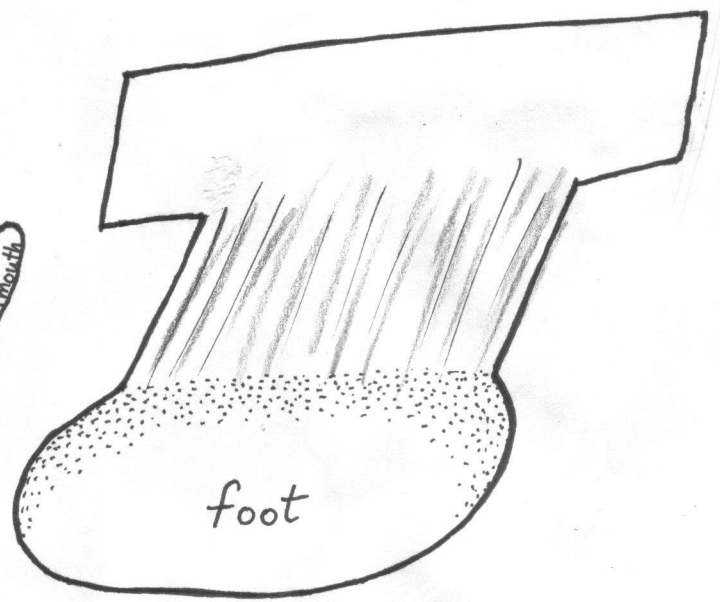
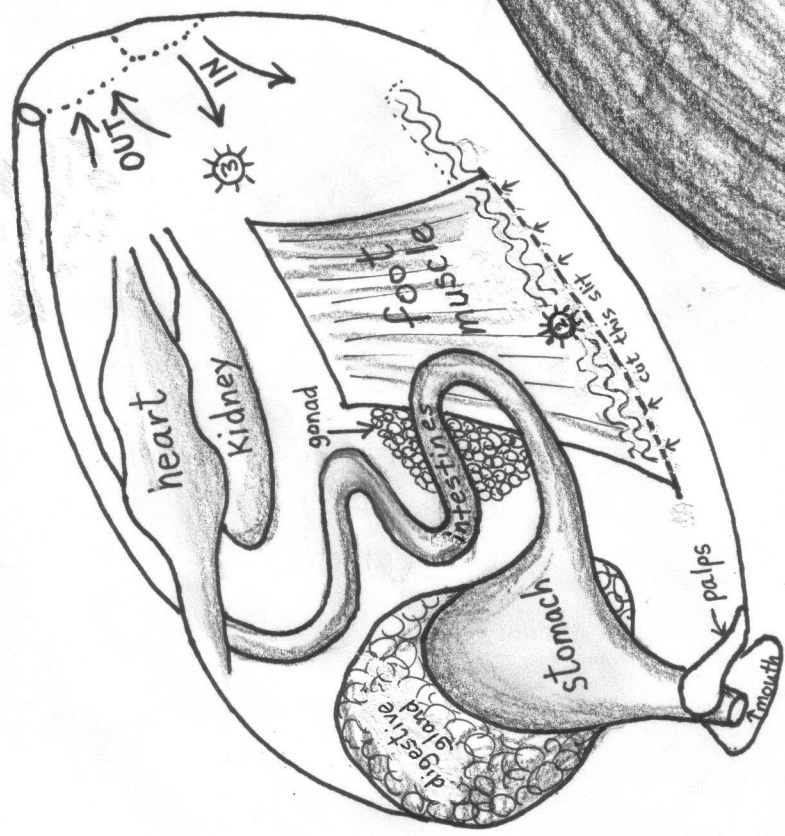
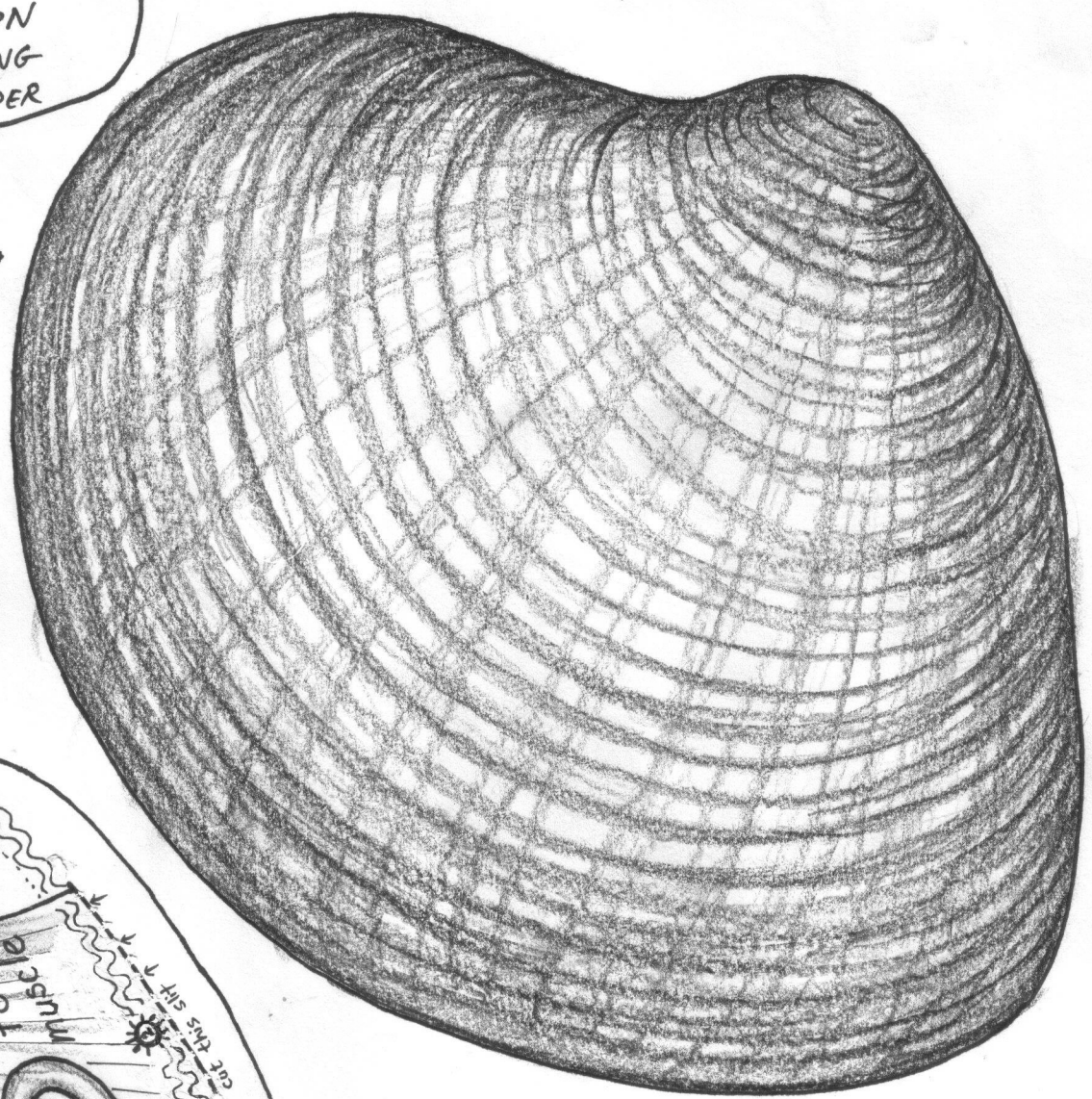
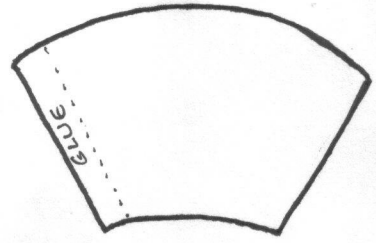


UNLABELED PARTS PAGE
FOR CUT-AND-ASSEMBLE CLAM

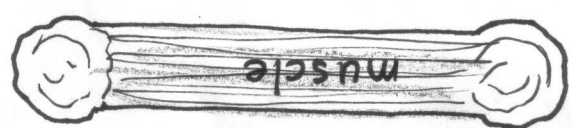
GILL PATTERN
CUT 2 FROM TRACING
PAPER OR TISSUE PAPER



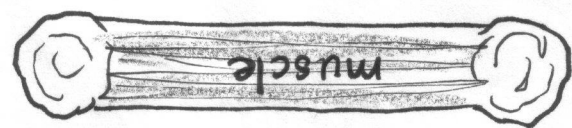
siphon



foot



muscle



muscle

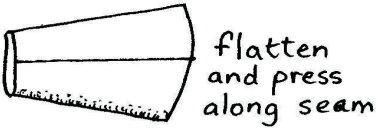
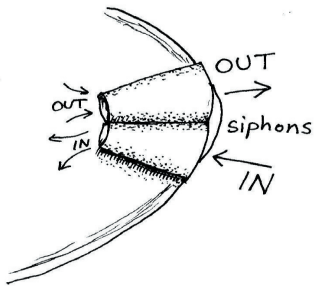
PARTS PAGE FOR
CUT-AND-ASSEMBLE CLAM

CUT-AND-ASSEMBLE CLAM

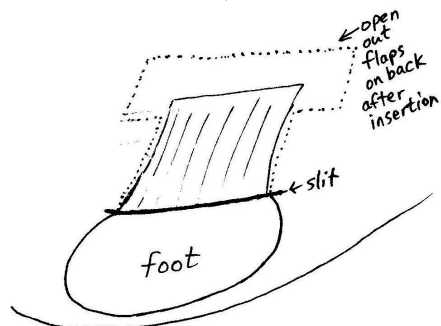
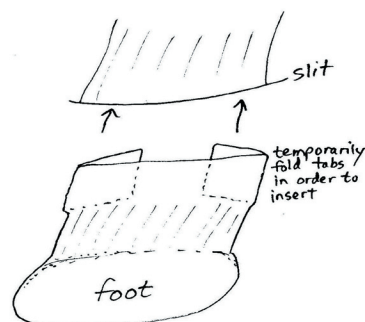
You will need:

- Copies of the pattern pages printed onto card stock (you can try regular paper if that's all you have available)
NOTE: I have provided both a labeled parts page and an unlabeled parts page. If you are working with younger kids, choose the labeled page. If you are working with older kids, you might want them to label the parts. It's up to you.
- Scissors
- X-acto knife
- White glue
- Small piece of tracing paper or tissue paper (for gills)
- Optional: colored pencils, thread or thin string (for nerves)

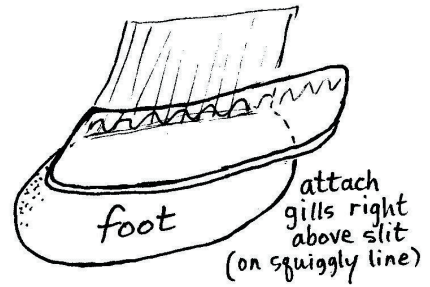
Directions:

- 1) Do any coloring you want to do. Colored pencils are recommended.
- 2) Cut out the eight pieces on the parts page.
- 3) Use the gill pattern piece to cut 2 gills from tracing paper (If tracing paper is not available try tissue paper, waxed paper, or other thin paper. If no thin paper is available at all, don't let that stop you from completing your clam- just use one piece regular paper instead of 2 pieces of thin paper.) Write the word "gill" on the gill pieces using a pencil or marker.
- 4) Glue "innards" piece onto sheet where indicated. (OPTION: If you want the foot to slide in and out between innards piece and the main sheet, you can wait and glue on the innards piece after step 8.
- 5) Form the siphons by rolling the pieces into a cone-shaped cylinder and securing with a small amount of white glue. To get the seam to stick tightly, flatten the siphon and hold the seam shut for about 10 seconds. Siphon should then pop open again, although in a flattened state, which is fine because it will have to be flattened anyway.
A hand-drawn diagram of a flattened siphon, which is a cone-shaped cylinder. The text "flatten and press along seam" is written next to it.
- 6) Now glue the siphons in place on the clam, where indicated. Siphons will be flattened but not totally flat.
A hand-drawn diagram of a clam with two siphons. Arrows labeled "OUT" point away from the siphons, and arrows labeled "IN" point towards them. The word "siphons" is written between the two.

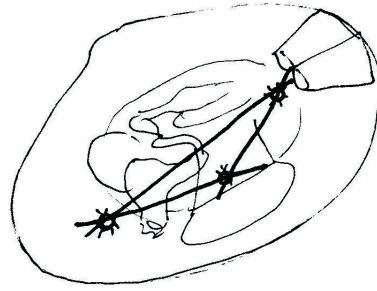
- 7) Cut the slit at the bottom of the foot muscle using an X-acto knife.
- 8) Insert foot piece as shown in diagram, bending the flaps temporarily for insertion. The foot is now a moveable piece that can go in and out of the shell, like a real clam's foot!



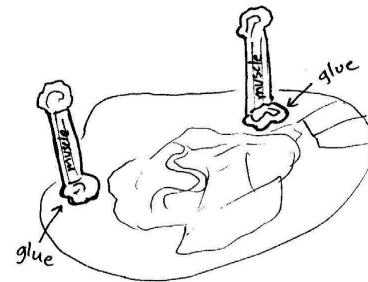
- 9) Put a very small amount of glue on the squiggly line right above the slit. Place a gill piece on, as shown, so that it overlaps down over the foot. Repeat and adhere the second gill piece right on top of the first one. Now you should have two tracing paper flaps covering half of the foot. **IMPORTANT:** Make sure the glue does not ooze out and prevent the foot from sliding in and out!



- 10) Notice the three little dots numbered 1, 2, 3. (Hopefully, the number 2 dot will still be somewhat visible under the gill pieces. The dot is located right above the slit.) These represent nerve bundles called ganglions. The clam does not have a brain. It simply has three spots where nerves connect. Cut three lengths of thread to represent the nerves that run between these three dots. Apply a very small amount of glue to each number and stick the end of the thread to it. If you do not want to mess with thread, another option is to simply take a pencil or marker and draw in the connection between the dots.

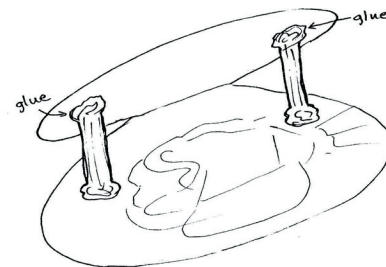


- 11) Glue one end of each adductor (shell closing) muscle in place where indicated on clam. Other end should remain sticking up into the air.



- 12) Glue top shell pieces on where indicated, just at the very top. Press and let dry a minute or two.

- 13) Glue the other end of the adductor muscles to the underside of the top shell as shown in illustration. Top shell will be propped open. Let glue dry a bit before trying to close shell.



- 14) Gently bend the muscles forward while closing top shell. When you open the shell again, the muscles should pop back into place and prop the shell open again.

