

STUDENT WORKSHEET

Peelers, Busters, and Soft Shells: The Molting Crab

Blue crabs are considered invertebrates, animals without a backbone. The blue crab has an exoskeleton, a hard shell on the outside of its body. However, in order for the crab to grow, it must molt, or shed, its old shell. Female crabs will molt 18 to 20 times. Male crabs will molt 21 to 23 times. The time between molts depends on the crab's age. When a crab is only one inch long, the time between molts is 10 to 15 days. A legal-sized crab, about five inches, has about 30 to 50 days between molts. When a crab has grown, it requires a larger shell. Three stages occur.

Pre-Molt or "Peeler" Stage

A new inner "soft" shell slowly forms beneath the existing shell. When this shell has fully formed, the crab is ready to molt.

Molting or "Busting" Stage

The crab stops eating and seeks shelter. During this stage, the crab is vulnerable to predators because of the new soft shell about to be exposed.

The crab absorbs water, which causes its tissues to swell. The tissues swell and begin to split the old shell.

The crab begins to back out of its old shell, which is then left behind. If you were to look in the discarded shell, you would notice that the gills are still there. Not to worry, the crab has a new set!

The crab pumps water into its tissues to inflate the new shell to its new size. The new shell will be about one-third larger than the old shell. Within six hours after molting, the crab has reached its new size.

Post-Molt or "Soft Crab" Stage

At this stage, the new shell is smooth and soft. Within two hours, the new shell will begin to harden. In 2 to 4 days, the shell will be completely hard again. During this time, the crab is especially vulnerable to predators and may seek safety in underwater grasses.

At one time, soft shell crabs were more popular to eat than hard crabs. Even though we eat many hard crabs today, there is still a large market for soft crabs. They are sold all over the United States, and even shipped to other countries.

In order to catch this form of seafood, watermen need to understand the life cycle of the crab, including when the crab will molt. There are some signs that a waterman looks for on the crabs he catches that tell him if a crab is close to shedding its shell.

Chesapeake Bay watermen have their own “lingo” for describing the signs – the names refer to the stage of the molt.

- **Pink Sign** – 1 week prior to molt, the edge of one flipper joint is tinged pink
- **Red Sign** – 2 days prior to molt, the pink flipper joint turns red
- **Rank Peeler** – hours prior to molt, the crab swells with water
- **Buster** – in the process of “busting out of” its old shell
- **Soft Shell** – smooth, soft shell, within 2 hours after shedding old shell
- **Paper Shell** – 12 hours after molt, new shell becomes slightly stiff
- **Buckram** – 24 hours after molt, new shell becomes leathery
- **Hard Shell** – 4 days after molt, the shell is hard again

If you are a waterman and you want to catch the “perfect soft crab” to sell to a buyer, at which stage would you want to catch the crab? Explain why.
