

The Samurai Crab

Background:

Fishermen in the Japan Inland Sea often net crabs that exhibit curious markings; the crabs have indentations on the top of their shells. Amazingly, these indentations cause the crabs to appear to have faces like Samurai warriors. Crabs resembling Samurai warriors occur only in the Japan Inland Sea.

Problem Statement:

Why are crabs with faces like Samurai warriors imprinted on their shells found only in the Japan Inland Sea?

Useful Facts:

- The Japan Inland Sea lies along the Eastern coast of Honshu.
- The Heike crab, a variation of a species of crab found in several other locations in the Pacific Ocean, exists only in the Japan Inland Sea.
- The face on the crab's shell appears three-dimensional.
- The baby crabs possess faces on their backs.
- The sea floor, littered with empty discarded shells, provides evidence of the Samurai face. The crabs shed and regrow their shells as they mature.
- Written records telling of crabs with faces are at least 700 years old.
- Fossil evidence prior to 1100 A.D. shows that crabs in the Inland Sea lacked facelike images imprinted on their shells.
- Earthquakes and volcanic eruptions have occurred in and around the Inland Sea for millions of years.
- Pollutants found in the Inland Sea occur in other bodies of water around Japan.
- A festival occurs every April 24 celebrating the battle of Dannoura.
- The Heike crabs taste the same as other crabs in the Inland Sea.
- Fossil evidence indicates the Heike crab's indentations gradually became more human-like over the past 600 or 700 years.
- A poem, "Tale of the Heike," describes the defeat and death of Antoku in the Inland Sea.

Your Task:

Work in teams of four to six as you complete the following:

- Use the useful facts provided to make an educated guess in response to the problem statement above.
- Formulate seven to ten quality test questions that will help to revise and refine your guess.
- Each team will have the opportunity to pose one question at a time. **Hint: Listen carefully to the other groups. Their questions can help you too.**