

PART B: READING COMPREHENSION

INSTRUCTIONS: Read the following passage and answer the questions on pages 4 to 7 of the examination booklet.

The Finicky Shark

by William J. Broad

- 1 Few animals have the power to frighten people into the cold terror of being eaten alive. But the great white shark does so effortlessly. Its reputation for blood lust is rooted in images of jaws gleaming with rows of razor-sharp teeth, their edges nicely serrated to ease the job of tearing through bone and flesh.
- 2 Nature's great killing machine grows to lengths of six metres or more and is often viewed as crude and mindlessly malevolent, feeding just as heartily on humans as on fish, seals, whales and sea lions.
- 3 But new research is challenging that notion and shedding light on the hidden life of the great white, revealing a finicky eater that may find people unpalatable.
- 4 Though it is pitiless with prey, lunging and slashing in red-stained water, the species can be quite civil among its own. Scientists have found what appears to be a ritualized competition over kills in which two great whites will forego attacking one another for a genteel bout of slapping tails on the sea's surface. The biggest splash decides the winner.
- 5 Such finesse stands in stark contrast to the raw violence among many predators, which can engage one another in bloody fights to the death.
- 6 Over all, scientists say, great whites have been badly misunderstood, wrongly making them the demons of movies and nightmares. Some research has even found evidence that the killers, when thwarted in feeding, get visibly frustrated and agitated, perhaps even sad and dejected.
- 7 "We're dispelling the myths and learning a lot about how they really live," said Dr. A. Peter Klimley, a biologist at the University of California Bodega Marine Laboratory in Bodega Bay, California, who is a prominent expert on the infamous shark.
- 8 "They're not stupid feeding machines," he said. "They're exquisitely adapted."
- 9 Dr. Douglas J. Long, a fish scientist at the California Academy of Sciences who studies great whites, said the new insights, while substantial, still leave a greater number of riddles.
- 10 "For instance," Long said, "we know virtually nothing about how and where they mate."
- 11 Even as scientists seek to unravel the great white's biology, behaviour and ecology, a political push is accelerating to protect the beast. The top predator of the sea, it appears to be declining in numbers because of assaults by sport fishermen as well as commercial interests serving a growing international market for white-shark jaws and teeth.

- 12 California, South Africa and Australia have taken steps to try to save the great white and other states and countries are considering such conservation efforts.
- 13 “Its numbers will inevitably dwindle unless prudent controls are enacted,” Dr. Richard Murphy, a marine ecologist at the Cousteau Society in Chesapeake, Virginia, wrote in *Great White Sharks*, a collection of scientific reports published late last year by Academic Press.
- 14 “In addition to being increasingly rare,” Murphy said, “they are majestic pre-eminent participants in a complicated food web which we, as yet, only partially understand.”
- 15 “The willingness and ability of humans to protect the killer,” Murphy said, “are indicators of the economic, political and sociological health of our own species.”
- 16 The mythology of terror surrounding the great white is even wider and more ominous than the shark’s jaws are in real life. In *Twenty Thousand Leagues Under the Sea*, Jules Verne tells how Professor Aronnax was taken by Captain Nemo for a global submarine tour, the two men finding themselves face to face with some of the razor-toothed giants during an underwater walk.
- 17 “The blood froze in my veins,” the professor said, “as silver bellies and huge mouths bristling with teeth rushed out of the darkness.”
- 18 After a narrow escape, the professor later told his companions of reports that fishermen had cut open the stomachs of great white sharks and found a buffalo head, a whole calf and “a sailor still in uniform.”
- 19 More recently, the beast achieved fame as the villain of *Jaws*, the best-selling book by Peter Benchley and the blockbuster movie by Steven Spielberg. Both featured a marauding great white that terrorized swimmers near crowded beaches.
- 20 The great white is “firmly ensconced in the pantheon of sea monsters,” Richard Ellis wrote in *Monsters of the Sea* (Knopf, 1994). “It is the largest predatory fish in the world,” he said, “with some specimens weighing as much as a full-grown rhinoceros.”
- 21 Sharks are ancient animals, long predating the dinosaurs and myriad types of modern creatures. *Carcharodon carcharias*, or “ragged tooth” in scholarly Latin, is found in temperate waters throughout the world’s seas. To find prey, it has acute sensors known as lateral-line organs that apparently can detect disturbances in seawater at ranges of 1,500 metres or more.
- 22 Closer to a victim (exactly how close is uncertain), its keen ears can hear thrashing, its sensitive nose can sniff blood, and its eerie black eyes can spy flesh. Powerful muscles send it lunging.
- 23 The triangular teeth grow to lengths of five or more centimetres and are extraordinarily strong. Three layers of enamel crisscross in different directions so the teeth can better withstand impact as well as twisting and bending. If a tooth is lost, a replacement directly behind it will rotate forward in a day or so. New teeth are constantly being formed in this replacement process.
- 24 Judging from stomach contents, the beast can indeed devour prey whole, including other sharks and sea lions. Though one of its nicknames is “man-eater” (another is “white death”), no one knows for certain whether people are in fact a preferred food.

- 25 Preliminary research suggests they are not. Klimley said white sharks might spit out humans, birds and sea otters because their bodies lack the energy-rich layers of fat possessed by animals like seals and whales.
- 26 “If they ingest something that’s not energetically profitable, then they’re stuck with that for a few days of slow digestion,” he said. “Fat has twice the energy value of muscle.”
- 27 Klimley noted three recent attacks along the northern California coast near Bodega Bay in which people had been quickly let go.
- 28 “Can you imagine?” he said. “These sharks are seizing people and holding them very gingerly to make this decision. They strike and hold and release—and that’s for big sharks, three or four metres long.”
- 29 Worldwide, great white sharks attack people four or five times a year, perhaps killing one of them.