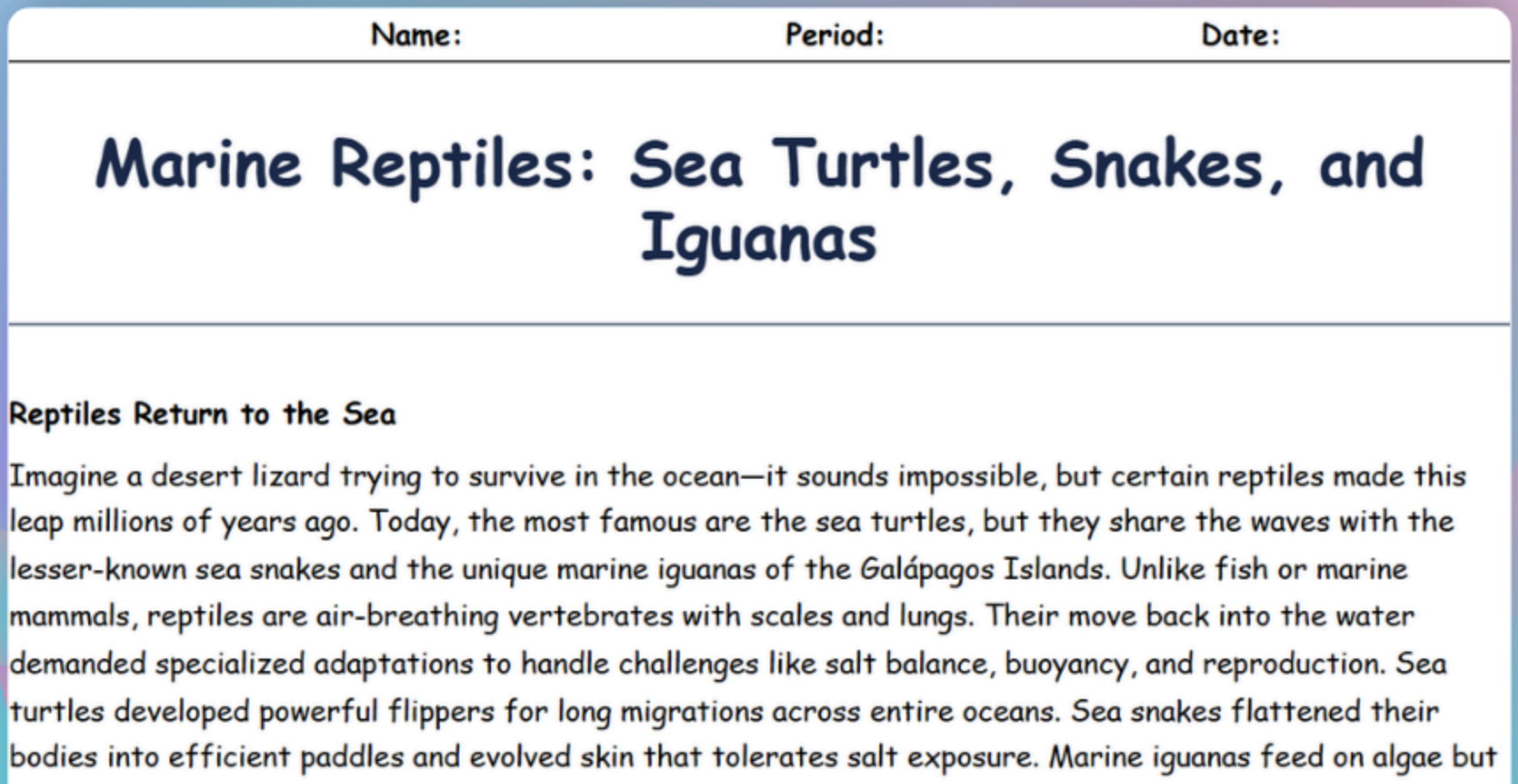
NO PREP

Marine Reptiles

Sea Turtles, Snakes, and Iguanas

Includes: Student reading, case study, differentiated questions, teacher key



Name: Period: Date:

Marine Reptiles: Sea Turtles, Snakes, and Iguanas

Reptiles Return to the Sea

Imagine a desert lizard trying to survive in the ocean—it sounds impossible, but certain reptiles made this leap millions of years ago. Today, the most famous are the sea turtles, but they share the waves with the lesser-known sea snakes and the unique marine iguanas of the Galápagos Islands. Unlike fish or marine mammals, reptiles are air-breathing vertebrates with scales and lungs. Their move back into the water demanded specialized adaptations to handle challenges like salt balance, buoyancy, and reproduction. Sea turtles developed powerful flippers for long migrations across entire oceans. Sea snakes flattened their bodies into efficient paddles and evolved skin that tolerates salt exposure. Marine iguanas feed on algae but

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Sea Turtles: Ancient Mariners

Sea turtles are among the most recognizable marine reptiles, tracing their lineage back more than 100 million years. Unlike land turtles, their shells are streamlined for efficient swimming, and their front flippers are elongated like wings, propelling them gracefully across the sea. They surface to breathe, but their ability to slow heart rates allows dives lasting over an hour. One of their most striking features is their migratory behavior. Green turtles, for example, may cross thousands of miles between feeding grounds and nesting beaches, guided by an internal compass sensitive to Earth's magnetic field. Their diet shifts with species: hawksbills

consume sponges, greens graze on seagrass, and leatherbacks specialize in jellyfish. Yet turtles remain tied to land for reproduction. Females return to sandy beaches to dig nests, laying dozens of eggs at a time. Hatchlings must scramble from nest to sea, running a gauntlet of predators. Survival rates are low, but those that succeed may live for decades, growing into vital parts of marine ecosystems as grazers and predators.

Sea Snakes: The Silent Slitherers

Sea snakes represent one of the most complete returns to aquatic life among reptiles. Found mostly in the Indo-Pacific, they include over 60 species, many highly venomous. Their bodies are laterally flattened, with paddle-like tails that make them agile swimmers. Unlike fish, they breathe air, but a single elongated lung runs almost the length of their body, functioning both for respiration and buoyancy control. Some can even absorb oxygen through their skin, an unusual trait for reptiles. Their diet centers on fish and eels, which they subdue with fast-acting venom. Most sea snakes are not aggressive toward humans, though bites can be dangerous. To survive in salty environments, they possess sublingual salt glands that excrete excess salt. Despite their aquatic mastery, sea snakes face threats from habitat loss, bycatch in fishing gear, and declining coral reefs. Their specialized physiology makes them vulnerable to rapid environmental change, underlining how delicate balance is for animals at the edge of two worlds.

Marine Iguanas: The Ocean's Lizard Divers

Unique to the Galápagos Islands, marine iguanas are the only lizards in the world that forage in the sea. With their flattened tails, they swim in a serpentine motion, diving to graze on algae clinging to rocks. Their sharp claws grip slippery surfaces, and they can hold their breath for up to 30 minutes. To cope with salt, they use specialized nasal glands to excrete excess salt, often seen as white "sneezes." As cold-blooded reptiles, they face thermal challenges. After a chilly dive, they sprawl on dark volcanic rocks to absorb heat, their black coloration boosting warming. Colonies of iguanas often bask together, a behavior that conserves warmth and deters predators. Marine iguanas illustrate adaptation in miniature. They are not large, migratory, or venomous like other marine reptiles, but their ability to exploit algae in a harsh environment makes them an essential part of the Galápagos

ecosystem. They highlight the role of reptiles as ecological specialists, not just generalists.

Key Information

Marine Reptile	Key Adaptations	Diet	Special Challenges
Sea turtle	Flippers, streamlined shell, long migrations	Seagrass, sponges, jellyfish	Nesting tied to land, hatchling survival
Sea snake	Flattened body, salt glands, lung for buoyancy	Fish, eels	Dependence on coastal habitats
Marine iguana	Flattened tail, salt-excreting glands	Algae, seaweed	Needs land to warm up

Case Study: The Struggle of Sea Turtle Conservation

On a remote beach in Costa Rica, conservation volunteers patrol under the stars, waiting for nesting sea turtles to emerge. Every night, female leatherbacks—some weighing half a ton—haul themselves ashore. Their flippers, perfect for the open ocean, are awkward on sand. Exhausted, they dig nests and deposit more than 70 eggs. Without intervention, many of those eggs would be dug up by predators, poached by humans, or crushed by beach development. Hatchlings face even steeper odds: only about 1 in 1,000 will survive to adulthood. Volunteers carefully relocate some nests to hatcheries, shielding them from disturbance. Others work to protect dark, quiet beaches since artificial lighting can disorient hatchlings, pulling them inland instead of toward moonlit waves. The battle doesn't stop at the shoreline. At sea, turtles contend with fishing nets, marine debris, and shrinking feeding grounds. Climate change alters the sand's temperature, which determines the sex of hatchlings—skewing ratios and threatening long-term population stability. These challenges make sea turtles powerful conservation symbols. They remind us how human activity—whether beachfront lighting or plastic use—reaches far into the ocean's web of life. The fight to save them is not only about one reptile but about preserving the health of entire marine ecosystems.

1. Why does artificial light pose such a danger to hatchling turtles, and how do conservationists address this issue?

2. How does climate change influence the population balance of sea turtles during nesting?

Multiple Choice

1. What adaptation allows marine iguanas to survive in a salty ocean environment?

    a) Magnetic navigation

    b) Specialized nasal salt glands

    c) Streamlined flippers in water

    d) Long paddle-like lung

2. What is the primary diet of sea snakes?

    a) Jellyfish prey

    b) Seagrass

    c) Algae

    d) Fish and eels

3. Which feature is most critical for sea turtles to complete long migrations?

    a) Magnetic orientation

    b) Swim bladder

    c) Electric field sensing

    d) Tapetum lucidum

Matching

Write the letter of the correct definition on the line next to each term.

Term	Definition
1. ___ Sea turtle flippers	A) Subdues prey such as fish and eels
2. ___ Sea snake lung	B) Absorb heat on volcanic rock
3. ___ Marine iguana basking	C) Powerful wings for long-distance swimming
4. ___ Sea snake venom	D) Grip rocks while grazing on algae
5. ___ Marine iguana claws	E) Buoyancy and extended respiration

Fill-in-the-Blank

1. Sea snakes excrete excess salt using _____ glands.

2. Marine iguanas dive for _____ as their primary food source.

3. Sea turtles rely on Earth's _____ field to navigate migrations.

Short Answer

Answer each question in 2-4 complete sentences.

1. Compare how sea snakes and marine iguanas differ in the way they cope with temperature and oxygen demands.

_____

_____

_____

2. What role do marine reptiles play in ecosystems, and why does their survival matter for ocean health?

_____

_____

_____

3. Identify one major human threat to sea snakes and one to sea turtles, and explain why each is serious.

_____

_____

_____