

Life in Water & Along Shores

Tidal Shell Shore with Shiftling

Learning target

Explain structural and behavioral features useful in aquatic settings.



Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Gills and lungs; movement; shells; tides; habitat fit

Open Tidal Shell Shore - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.



Life in Water & Along Shores - key ideas

1. The first clues

Aquatic animals obtain oxygen in different ways. Fish commonly use gills; whales have lungs and breathe air at the surface.

2. How the clues connect

Shore organisms also face changing water levels. Shells, attachment and behaviors can help some animals cope with exposure or waves.

3. Our evidence record

Our shoreline record shows a shelled animal closing its shell when exposed at low tide. This may help retain moisture; it does not turn it into a lung-breathing whale.

Keep the science accurate

Organisms do not choose new inherited traits because they need them. Avoid advanced genetics or equating seasonal behavior with instant evolution.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference: <https://www.nextgenscience.org/dci-arrangement/3-Is4-biological-evolution-unity-and-diversity>

Talk through the evidence

1. Which animal breathes air with lungs?

Expected answer: A whale

Reasoning: Aquatic animals obtain oxygen in different ways. Fish commonly use gills; whales have lungs and breathe air at the surface.

2. What do many fish use to obtain oxygen from water?

Expected answer: Gills

Reasoning: Aquatic animals obtain oxygen in different ways. Fish commonly use gills; whales have lungs and breathe air at the surface.

3. What may closing a shell help reduce?

Expected answer: Moisture loss during exposure

Reasoning: Our shoreline record shows a shelled animal closing its shell when exposed at low tide. This may help retain moisture; it does not turn it into a lung-breathing whale.

4. Why consider tides in habitat choices?

Expected answer: Water coverage changes

Reasoning: Shore organisms also face changing water levels. Shells, attachment and behaviors can help some animals cope with exposure or waves.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.