Name _____

Moon's Gravity and Ocean Levels Answer Key

Cause-and-Effect Chains

Chain A: Moon's gravity pulls on Earth's oceans → Water bulges toward the Moon → High tide forms

Chain B: Earth rotates on its axis → Coastlines move through tidal bulges → Locations move into and out of tidal bulges

Chain C: Moon's pull creates two bulges → One bulge faces the Moon → Earth's inertia causes the other bulge to form on the opposite side

Chain D: Stronger Moon pull during full and new moons → Sun and Moon's gravity line up → Higher "spring tides" occur

Critical Thinking (Sample Answers)

1. Some areas experience two high and two low tides daily because Earth rotates through both tidal bulges created by the Moon's gravity. Each rotation exposes coastlines to both the bulge facing the Moon and the one opposite it.
2. Without the Moon, tides would be much weaker and less regular, which could disrupt coastal ecosystems. Many marine species rely on tidal rhythms for feeding, reproduction, and movement, so the loss of tides would greatly affect their survival.

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