Year 11 Science: Tides: the Moon, the Sun and real New Zealand tide data

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Auckland had a high tide at 08:55 on 10 November 2026. Using the average of 12 h 25 min, predict the time of the next high tide.

2. At which two Moon phases do spring tides happen?

3. On 18 November 2026 Auckland's highest high tide was 2.8 m and its lowest low tide 1.1 m. Calculate the tidal range.

4. Explain why there is also a high tide on the far side of Earth, opposite the Moon.

5. On 27 November 2026 Nelson's tidal range was 3.8 m and Wellington's was 1.4 m. Explain why the ranges differ when both feel the same Moon and Sun.

Exam-style question: November tides in Auckland

Use the LINZ data in this lesson for Auckland in November 2026: high tides about 12 h 25 min apart, a range of 1.7 m on 18 November (first quarter) and 3.2 m on 26 to 28 November (full moon on 25 November, perigee on 26 November).

6. Describe what causes high and low tides.

7. Explain why Auckland has two high tides most days, and why they come about 50 minutes later each day.

8. Discuss why the tidal range changes over the month, and why the spring tides of 26 to 28 November were bigger than those of 9 to 11 November (range 2.6 m, new moon on 9 November, apogee on 14 November).

Fix the mistake

9. Correct this statement: "There is one high tide a day, when the Moon is overhead."

10. Correct this statement: "Spring tides happen in spring."

11. Correct this statement: "Neap tides happen when the Moon is furthest away."

12. Correct this statement: "The Sun is much bigger, so it causes bigger tides than the Moon."