Year 13 Science: Orientation in space: tropisms, taxes, kineses and migration

Name: _____ Date: _____

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

Practice

1. A flatworm moves away from a bright light by steering its head from side to side. Name the response.

2. A woodlouse covers 42 cm in 60 s on dry paper. What is its speed in cm s^{-1}?

3. Why does a root bend down while a shoot bends up, if both have more auxin on the lower side?

4. Clover leaflets fold at night and open in the morning, whichever side the light comes from. Name the response.

5. What does a bird need, as well as seeing the Sun, to use a sun compass?

Exam-style question: kuaka migration

Kuaka (bar-tailed godwits) feed on worms and shellfish on New Zealand mudflats from September to March, then fly north to breed in Alaska, where the short summer brings a huge burst of insects. Young birds make their first southward flight without adults.

6. Describe the difference between migration and homing, using kuaka as an example.

7. Explain two cues kuaka could use to navigate across open ocean.

8. Discuss why migration gives kuaka a selective advantage, despite the cost of the journey.

Fix the mistake

9. Correct this statement: "Light destroys auxin on the lit side, so the shaded side grows more."

10. Correct this statement: "Woodlice move towards the damp, so it is a taxis."

11. Correct this statement: "Mimosa folding its leaves is a tropism because it responds to touch."

12. Correct this statement: "Godwits migrate so they can survive, which helps the species."