# Year 13 Science: Relationships between species: competition, mutualism, exploitation

Name: _____ Date: _____

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

## Practice

1. A tūī drinks flax nectar and carries pollen on its forehead to the next flower. Name the relationship.

2. Possums eat the leaves of kāmahi trees. Name the relationship and the effect on each species.

3. Two species of Paramecium with the same diet are grown together and one dies out. Name the principle.

4. What is the difference between a fundamental and a realised niche?

5. Why is the long-tailed cuckoo's relationship with whiteheads called brood parasitism?

## Exam-style question: cuckoo and warbler

**The shining cuckoo spends winter in the Solomon Islands and arrives in New Zealand in September or October. The female lays one egg in each grey warbler nest she finds, and the newly hatched cuckoo chick pushes the warbler's eggs out. Grey warblers usually start their first brood in August and a second in late October.**

6. Describe the relationship between the shining cuckoo and the grey warbler.

7. Explain the selective advantage of brood parasitism to the cuckoo.

8. Discuss how the timing of the warbler's breeding reduces the cost of the relationship to the warbler.

## Fix the mistake

9. Correct this statement: "The bat pollinates the flower to help it."

10. Correct this statement: "Wasps and birds are in a predator–prey relationship over honeydew."

11. Correct this statement: "The realised niche is bigger than the fundamental niche."

12. Correct this statement: "Mistletoe is not a parasite because it photosynthesises."