Use and make a dichotomous key

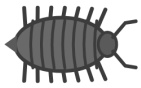
Names: Class: Date:

A dichotomous key is a set of questions, each with two answers. Each answer leads to another question or to a name. Work with a partner.

PART 1 Use a key

1. Look closely at each animal from the schoolyard. Count its legs on both sides.
2. Start at question 1 of the key and answer each question until you reach a name.
3. Check the description of that name against the animal, then write the name on the line under the animal.

A



B



C



D



E



F



The key

1	Does it have legs?	Yes: go to 2	No: go to 4
2	Does it have six legs?	Yes: Insect	No: go to 3
3	Does it have eight legs?	Yes: Spider	No: Slater
4	Does it have a shell?	Yes: Snail	No: Earthworm

Check the name against these descriptions

- Insect: six legs, and a body in three parts, the head, thorax and abdomen (OpenStax).
- Spider: eight walking legs and two main body parts (Australian Museum).
- Slater: a pair of short legs on each of its first seven body segments (Museums Victoria).
- Snail: a soft body and a shell (OpenStax).
- Earthworm: a segmented worm, with no legs (OpenStax).

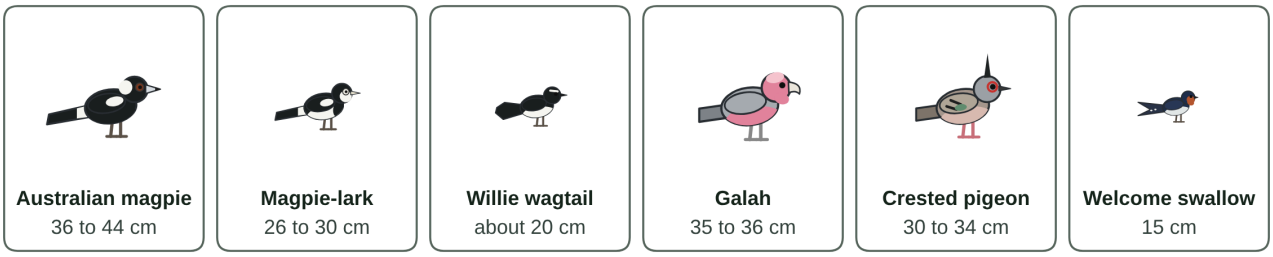
1. Which two animals ended at the same name? Write a question you could add to the key to separate them.

2. Why does the key ask about legs and a shell, not about colour?

3. The key ended at Spider for an animal with fourteen legs. What went wrong, and what should you do?

PART 2 Make a key

1. Choose a question about a feature you can see or measure that splits the six birds into two groups.
2. Split each group again, until every group holds one bird.
3. Write your key as numbered questions. Each answer leads to another question or to a bird.



Australian magpie
36 to 44 cm

Magpie-lark
26 to 30 cm

Willie wagtail
about 20 cm

Galah
35 to 36 cm

Crested pigeon
30 to 34 cm

Welcome swallow
15 cm

The six birds

- Australian magpie: black and white, 36 to 44 cm (Australian Museum).
- Magpie-lark: black and white, smaller than the magpie, with a thin whitish bill, 26 to 30 cm (Birds in Backyards).
- Willie wagtail: a small black and white fantail with a long rounded tail, about 20 cm (Australian Museum).
- Galah: rose-pink head, neck and underparts, with a grey back and wings, 35 to 36 cm (Australian Museum).
- Crested pigeon: grey-brown, with a thin black crest, 30 to 34 cm (BirdLife Australia; Victorian Government).
- Welcome swallow: blue-black above, rust on the forehead and throat, a long forked tail, 15 cm (Australian Museum).

1.	Yes:	No:
2.	Yes:	No:
3.	Yes:	No:
4.	Yes:	No:
5.	Yes:	No:

PART 3 Groups within groups

The dog and the cat share five levels (OpenStax). Write the cat's group at each level, using the words in the box, then circle the first level where the two part ways.

Level	Dog	Cat
Domain	**Eukarya**	
Kingdom	**Animalia**	
Phylum	**Chordata**	
Class	**Mammalia**	
Order	**Carnivora**	
Family	**Canidae**	
Genus	***Canis***	
Species	***Canis familiaris***	

Words for the cat

Felidae *Felis catus* *Felis*
Carnivora *Mammalia*
Chordata *Animalia*
Eukarya

Dog and cat levels: the Australian Faunal Directory; the domain: OpenStax. Sources: OpenStax (Concepts of Biology 15.3; Biology 2e 20.1 and 28.4); Australian Museum; Museums Victoria; Birds in Backyards; BirdLife Australia; Victorian Government (Ecolinc); Australian Faunal Directory. Drawings are the lesson's own, not to scale.

Answers (turn the page round). Part 1: A slater, B ant, C snail, D spider, E earthworm, F ladybird; the ant and the ladybird both end at Insect; legs and a shell can be seen and counted, so everyone gets the same answer. **Part 2:** one key that works is Is it black and white? (yes: magpie, magpie-lark, willie wagtail), then Is it longer than 35 cm? (magpie), then Is it shorter than 25 cm? (willie wagtail); for the others, Is its head rose-pink? (galah), then Does it have a long forked tail? (welcome swallow); Is it longer than 35 cm? has no clear answer for the galah (35 to 36 cm); any key for six birds has five questions. **Part 3:** the cat is Eukarya, Animalia, Chordata, Mammalia, Carnivora, Felidae, Felis, Felis catus; they part ways at family.