

# 1 Classifying living things – Part 2

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

| English        | 中文   | Write it 3 times (English) |       |       |
|----------------|------|----------------------------|-------|-------|
| kingdoms       | 界    | _____                      | _____ | _____ |
| Animal         | 动物   | _____                      | _____ | _____ |
| Plant          | 植物   | _____                      | _____ | _____ |
| photosynthesis | 光合作用 | _____                      | _____ | _____ |
| Fungus         | 真菌   | _____                      | _____ | _____ |
| mushrooms      | 蘑菇   | _____                      | _____ | _____ |
| yeast          | 酵母   | _____                      | _____ | _____ |
| Prokaryote     | 原核生物 | _____                      | _____ | _____ |
| bacteria       | 细菌   | _____                      | _____ | _____ |
| nucleus        | 细胞核  | _____                      | _____ | _____ |
| Protoctist     | 原生生物 | _____                      | _____ | _____ |
| algae          | 藻类   | _____                      | _____ | _____ |
| Vertebrates    | 脊椎动物 | _____                      | _____ | _____ |
| backbone       | 脊柱   | _____                      | _____ | _____ |
| fish           | 鱼类   | _____                      | _____ | _____ |

| English          | 中文    | Write it 3 times (English) |  |  |
|------------------|-------|----------------------------|--|--|
| amphibians       | 两栖动物  |                            |  |  |
| reptiles         | 爬行动物  |                            |  |  |
| birds            | 鸟类    |                            |  |  |
| mammals          | 哺乳动物  |                            |  |  |
| Arthropods       | 节肢动物  |                            |  |  |
| exoskeleton      | 外骨骼   |                            |  |  |
| insects          | 昆虫    |                            |  |  |
| arachnids        | 蛛形纲   |                            |  |  |
| dichotomous key  | 二歧检索表 |                            |  |  |
| Viruses          | 病毒    |                            |  |  |
| protein coat     | 蛋白质外壳 |                            |  |  |
| genetic material | 遗传物质  |                            |  |  |
| host             | 宿主    |                            |  |  |

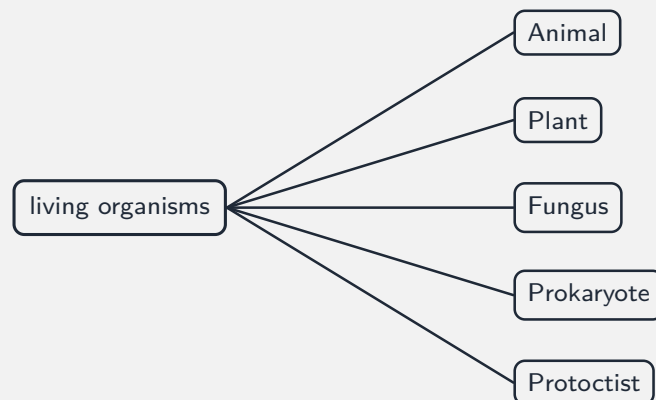
## Recall

There are millions of kinds of living thing, so scientists sort them into groups. The biggest groups are the **kingdoms** 界. You decide where an organism belongs by looking at its features.

## New ideas

Read these first, then do the Practice.

### ■ 1 The five kingdoms



| Kingdom                | A key feature                                                               |
|------------------------|-----------------------------------------------------------------------------|
| <b>Animal</b> 动物       | many cells, no cell wall; feed on other organisms                           |
| <b>Plant</b> 植物        | many cells with a cell wall; make food by <b>photosynthesis</b> 光合作用        |
| <b>Fungus</b> 真菌       | e.g. <b>mushrooms</b> 蘑菇 and <b>yeast</b> 酵母; feed on dead or living matter |
| <b>Prokaryote</b> 原核生物 | e.g. <b>bacteria</b> 细菌; one cell, no <b>nucleus</b> 细胞核                    |
| <b>Protocist</b> 原生生物  | e.g. <b>algae</b> 藻类; usually one cell, with a nucleus                      |

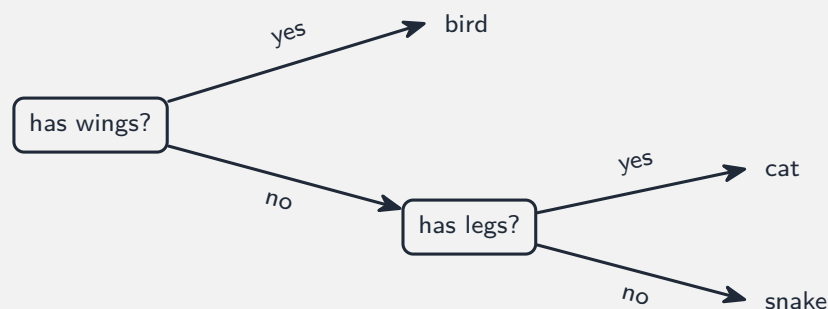
## ■ 2 Grouping the animals

Animals split into those with and without a backbone:

- **Vertebrates** 脊椎动物 have a **backbone** 脊柱—the five groups are **fish** 鱼类, **amphibians** 两栖动物, **reptiles** 爬行动物, **birds** 鸟类 and **mammals** 哺乳动物.
- **Arthropods** 节肢动物 have no backbone but a hard **exoskeleton** 外骨骼—e.g. **insects** 昆虫 and **arachnids** 蛛形纲.

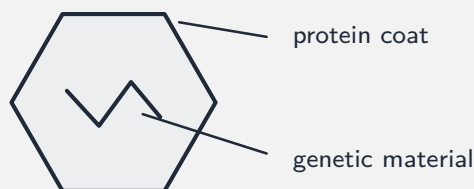
## ■ 3 Dichotomous keys

A **dichotomous key** 二歧检索表 helps you name an unknown organism. At each step you choose between **two** options, and that choice sends you to the next step, until you reach a name.



#### ■ 4 Viruses

**Viruses** 病毒 are not in any kingdom and are not made of cells. A virus is just a **protein coat** 蛋白质外壳 around its **genetic material** 遗传物质, and can only reproduce inside a living **host** 宿主.



**Watch out:** a **virus** is not in any kingdom —it is not made of cells and can only reproduce inside a host. In a dichotomous key, each step offers exactly **two** choices.

### Practice

Try these in order.

1.6 Name the five kingdoms that living things are sorted into. [3]

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1.7 What is the difference between a vertebrate and an arthropod? [2]

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1.8 Give one feature of mammals and one feature of birds. [2]

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1.9 What does "dichotomous" mean, and how many choices are there at each step? [2]

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1.10 Why do some scientists say a virus is not a living organism? [1]

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1.11 **Challenge.** An unknown animal has a backbone, feathers and lays hard-shelled

eggs. State its vertebrate group, and give the feature that rules out "mammal". [2]