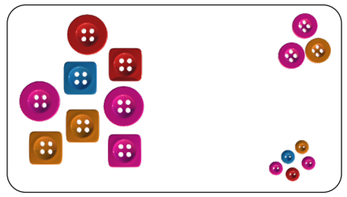
Grouping and Classifying

Classification

Classification is the arrangement of living and non-living things into groups or categories. It involves breaking down a large group into smaller groups based on their observable features. There are three types of classification: single-stage classification, multi-stage classification and serial ordering.

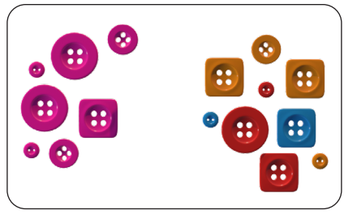
Single-stage classification

Single-stage classification involves separating a large group of objects into smaller groups based on a single property, such as size.



Sorted into three groups: large, medium and small.

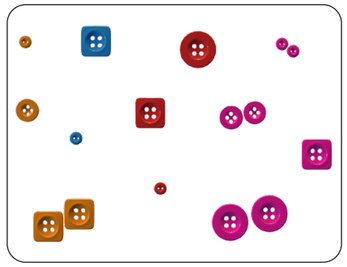
Another type of single-stage classification involves sorting objects according to whether they have a specific property or not. For example, we could ask the question 'Is it pink?'



Sorted in two groups: pink and not pink

Multi-stage classification

Multi-stage classification involves asking repeated questions about specific properties, to sort groups into subgroups again and again until all the objects in one group are the same.



Serial ordering

This type of classification involves sorting objects into an order based on a property. For example, these socks can be sorted according to size, with the smallest at one end, leading to the largest at the other end.

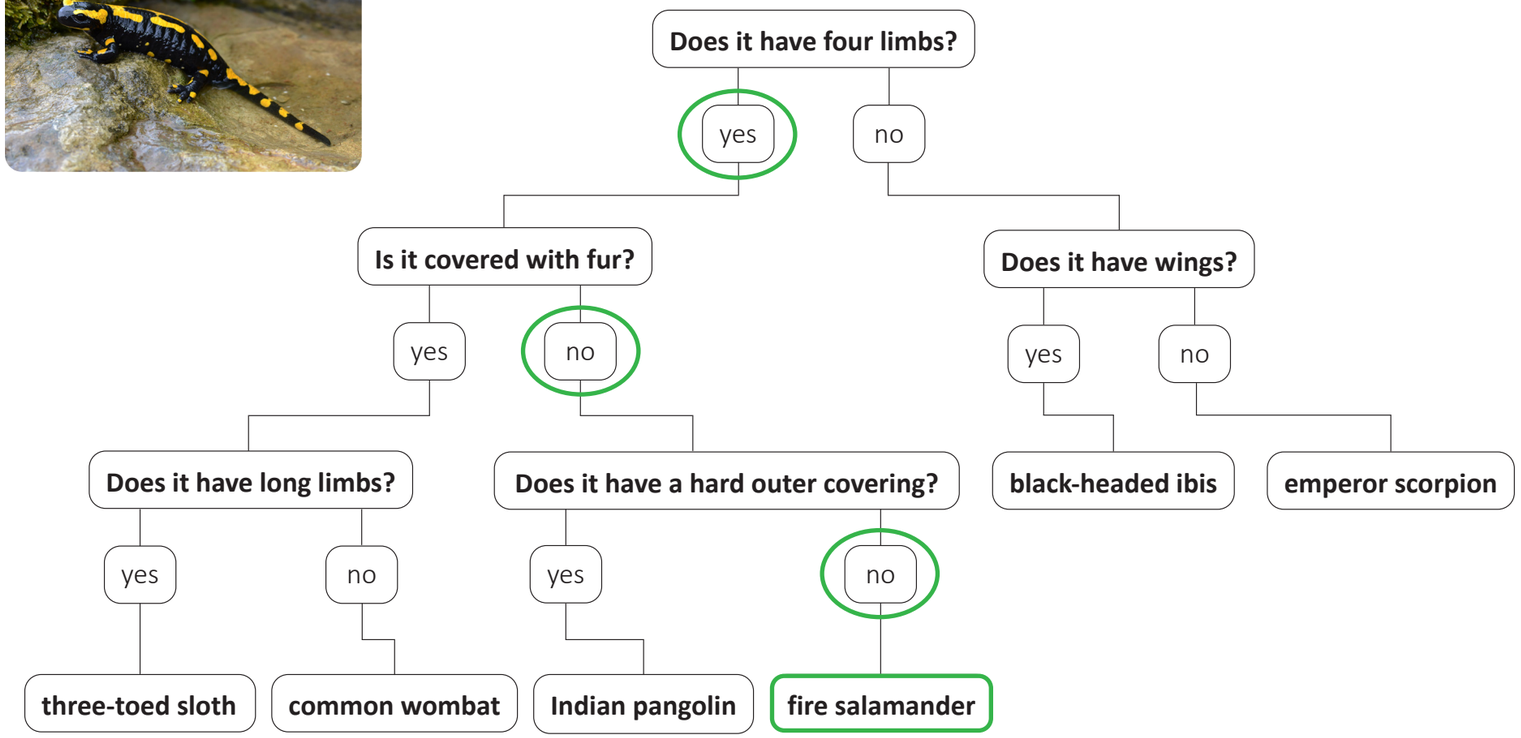
How classification is used

Scientists use classification to put living things into groups. The science of classifying and naming living things is called taxonomy.

Classification helps scientists identify and study living things and understand the origins and evolution of a species. New living things are still being discovered today.

Classification keys

Classification keys use multi-stage classification to identify living things. They work by observing a living thing then answering the yes or no questions until it is identified. For example, we can identify the animal below by answering the questions in the classification key.



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Classification of living things

Scientists divide all living things into five kingdoms. These include the animal kingdom and the plant kingdom.

Animal kingdom

All animals in the animal kingdom are classified as either invertebrates or vertebrates.

Invertebrates

Invertebrates do not have backbones. Instead, they have soft bodies or a hard outer shell or exoskeleton. They are further classified into three groups: annelid, mollusc and arthropod. Arachnid, crustacean, insect and myriapod are four types of arthropod.

annelid

mollusc

arthropod

arachnid

crustacean

insect

myriapod

Vertebrates

Vertebrates have backbones. They are covered with skin, feathers, scales, fur or hair. Vertebrates are further classified into five groups.

amphibian

bird

fish

mammal

reptile

Plant kingdom

Plants are important for life on Earth. All plants in the plant kingdom are classified as either vascular or non-vascular. Vascular plants are further classified into three groups.

plants with seeds – flowering

plants with seeds – cone-bearing

plants with spores

Glossary

backbone	A column of bones in the middle of the back of vertebrate animals.
classify	Arrange in groups or categories according to shared qualities or characteristics.
evolution	A process where living things change some of their physical or behavioural characteristics slowly over a very long time.
origin	Where something begins.
vascular	A plant with tubes that carry water and nutrients.

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