
















Living Things and Their Habitats: Linnaean System

Aim: To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals by finding out about the Linnaean System of classification. I can describe how living things are classified into groups.	Success Criteria: I can describe who Carl Linnaeus was. I can explain how living things are classified using the Linnaean system. I can classify living things using the Linnaean system.	Resources: Lesson Pack Books about classification, or access to the Internet Adult support as required
	Key/New Words: Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species.	Preparation: Classification Quiz Activity Sheet - 1 per group Questions and Answers Sheet Classifying Species Activity Sheet - 1 per child

Prior Learning: The children will have learnt about classification as grouping and sorting in Lesson 1, and in the Year 4 Living Things and Their Habitats unit.

Learning Sequence

	A Standard System: Children discuss why it is important to have a standard system of classification. Ask children to discuss possible problems caused by not following a standard system.	
	Who Was Carl Linnaeus? Describe Carl Linnaeus and his work on the classification system, using the information on the Lesson Presentation .	
	The Linnaean System: Explain the Linnaean system of classification using the information and diagrams on the Lesson Presentation . Give examples for each level of the classification system referring to the Lesson Presentation .	
	Classification Quiz: Children work in groups to compete in a quiz about the Linnaean system of classification. Groups fill in their team name on the Classification Quiz Activity Sheet . Read out the questions on the Questions and Answers Sheet , allowing groups time to answer. Go through the answers while groups mark their answers. <i>You may wish groups to swap to mark answers.</i> Groups score a point for each correct answer. Congratulate the winning group! <i>Look for children who can recall information to describe Linnaeus and explain how living things are classified.</i>	
	Classifying Species: Use the diagram on the Lesson Presentation to show the children how a species can be classified at each level of the standard system. Explain how the genus and the species gives a living thing its scientific name.	
	Classifying Species Activity: Children choose one of the living things from the list on the Lesson Presentation . Children use books or the Internet to research the living thing and complete the Classifying Species Activity Sheet showing how the species is classified at each level of the standard system. Children give the scientific name of their chosen living thing using the genus and the species. <i>Look for children who can classify living things using the Linnaean system.</i>	
	Children may need support in finding the information needed to classify their chosen living thing.	
	Invent a Mnemonic: Children work with their partner to invent a mnemonic to help them remember the order of the levels of the classification system.	

Taskit

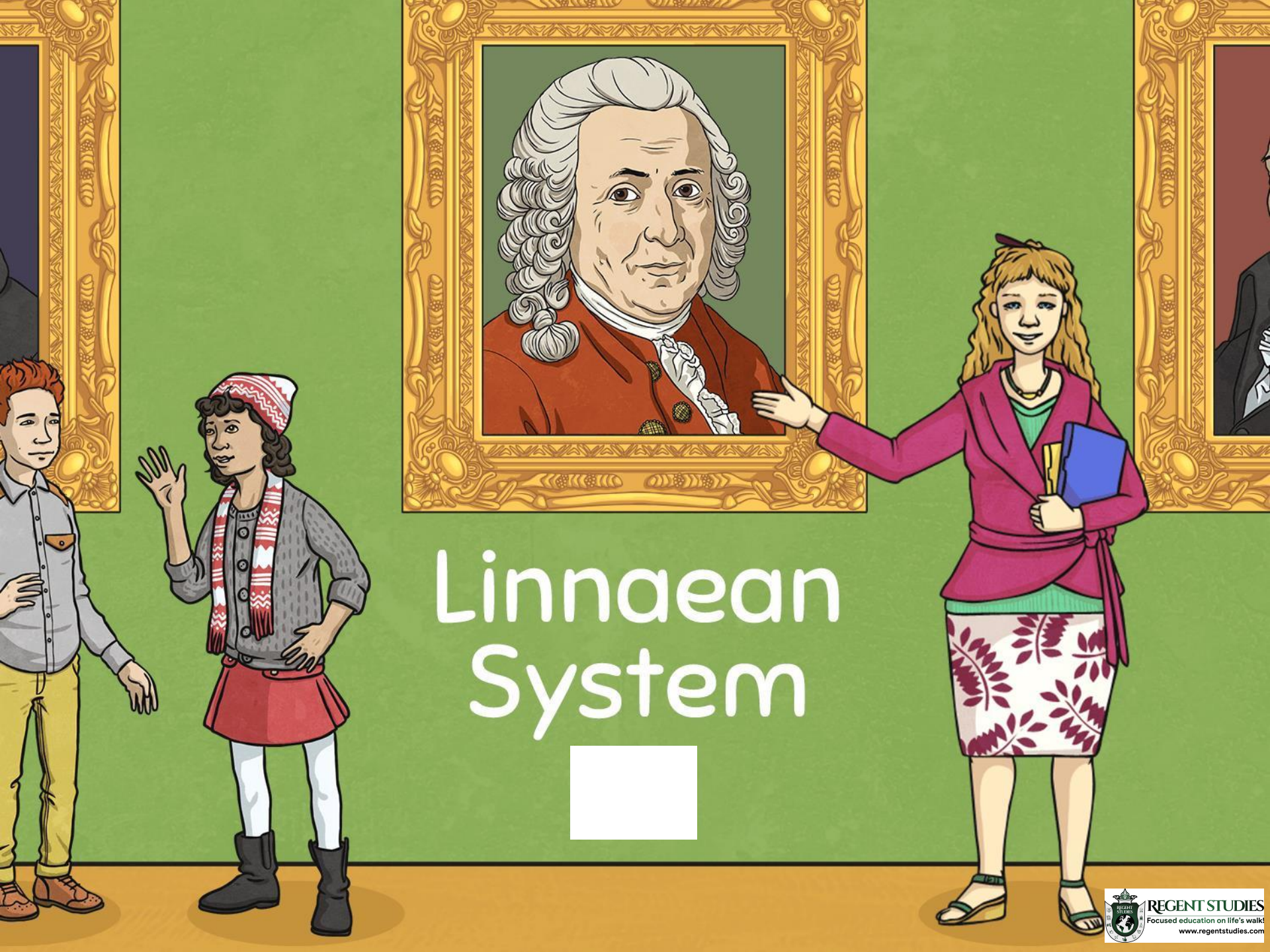
Writeit: Children could group and sort a selection of sweets by splitting the sweets into two larger groups, then smaller and smaller groups.

Classifyit: Children could design the layout for their zoo, making sure that similar animals are housed near to each other.

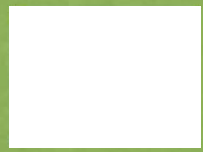


Science

Living Things and Their Habitats



Linnaean System



Aim

- I can describe how living things are classified into groups.

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A Standard System



In the previous lesson you classified animals by sorting and grouping them based on their similarities and differences. Did everyone in the class sort and group the animals in the same way? Without a standard system, living things could be classified however each differently by using different scientists method for classifying living things. Talk to your partner about how this could cause problems why this would be important.

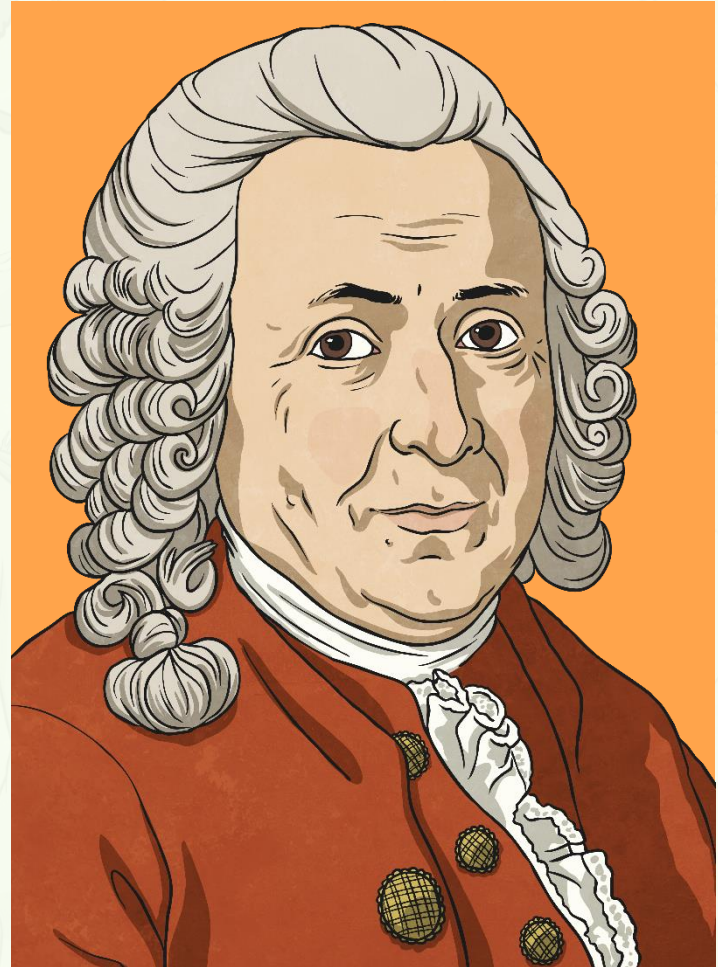


Who Was Carl Linnaeus?

Carl Linnaeus was a Swedish scientist who believed it was very important to have a standard system of classification. At the time he was alive, in the 1700s, there was no agreed standard method.

Linnaeus collected and examined over 40,000 specimens of plants, animals and shells. In 1735, he published his first edition of 'Systema Naturae', which described his system for classifying living things.

Over the next several years, Linnaeus continued to publish new editions of 'Systema Naturae' that included more species of living things. His tenth edition was published in 1758 and is considered to be the most important edition.

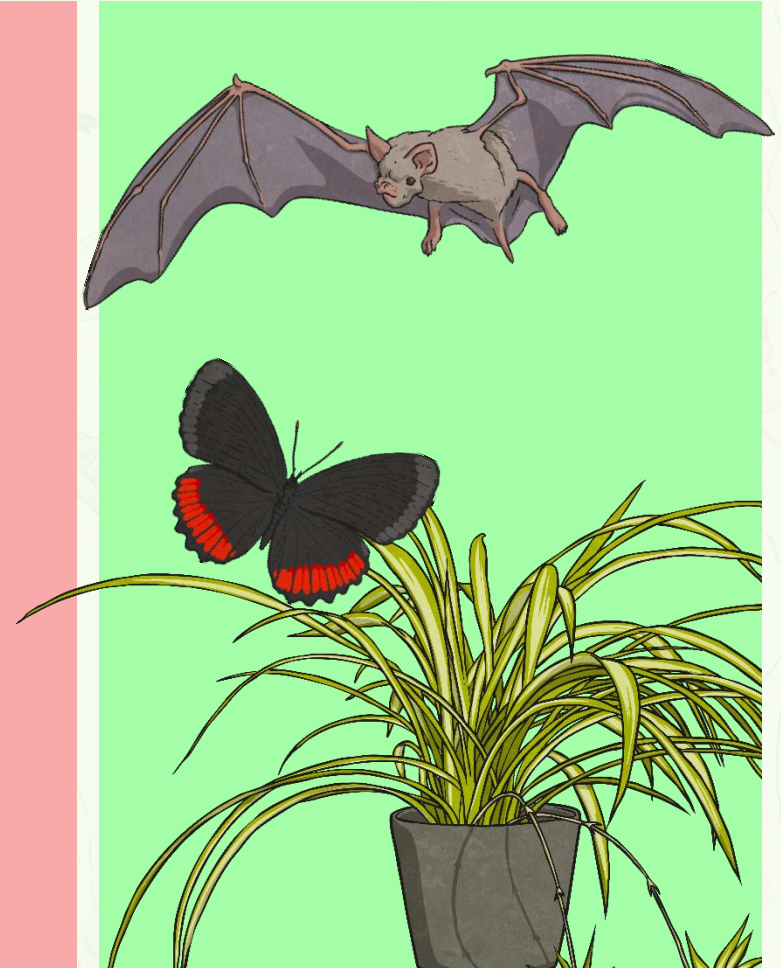


The Linnaean System

Linnaeus' original system of classification classified everything in nature into a hierarchy.

He proposed that there were three large groups, called kingdoms, into which the whole of nature could fit. These kingdoms were plants, animals and minerals. He then split each kingdom into smaller and smaller groups, or levels.

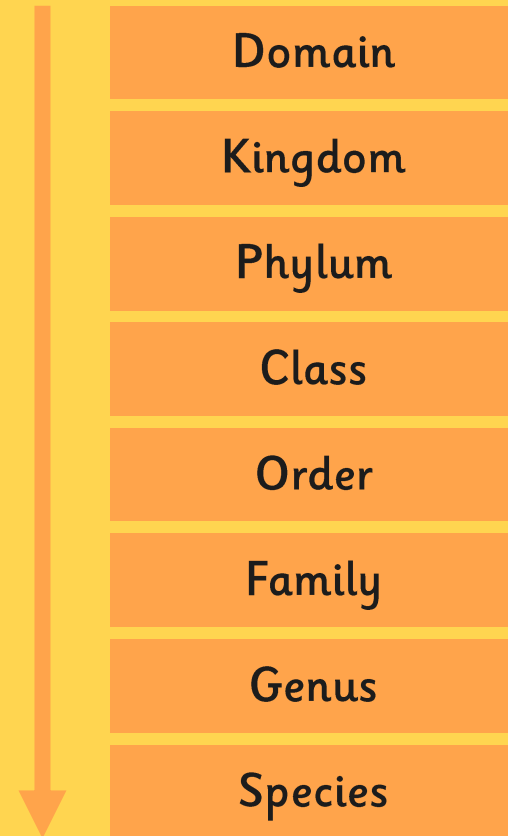
Today, the Linnaean system is only used to classify living things, so it does not include minerals. Furthermore, as new living things have been discovered, scientists have had to add additional levels in the hierarchy. A new level above kingdom, called domain, has also been introduced.



The Linnaean System

This diagram shows the levels of classification in the Linnaean system.

Living things can be classified by following the levels in this system. The number of living things in each group gets smaller and smaller, until there will just be one type of animal in the species group.



The Linnaean System

There are 3 domains: Archaea, Bacteria and Eukarya.
Plants and animals are all eukaryotes.

There are 6 kingdoms, including animals, plants, fungi and bacteria.

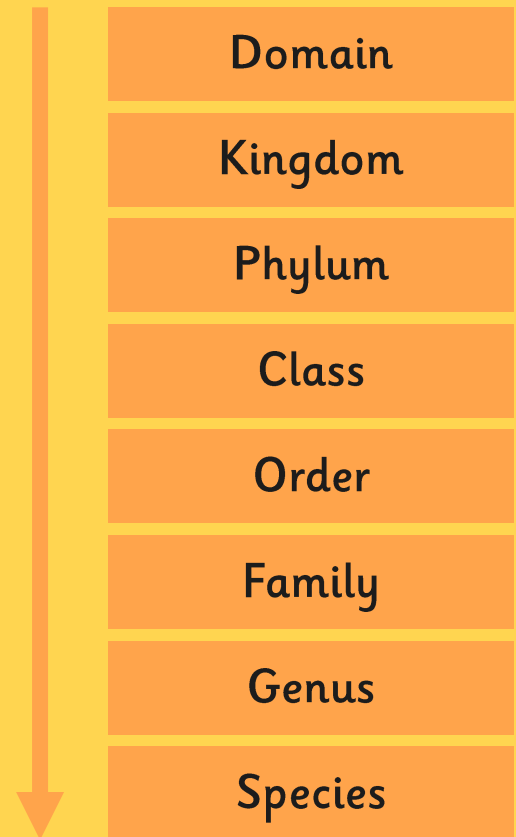
The 6 kingdoms are then split into phyla. There are more than 30 phyla in the animal kingdom. Phylum chordata includes all vertebrates.

Each phyla is divided into classes. The chordata phylum includes amphibians, birds, mammals, reptiles and fish.

The order and the family divide into further groups.

The genus includes species that are very closely related and share unique body structures.

A species is defined as a group of animals that can reproduce to produce fertile offspring.



Classification Quiz



Work as a team to compete in this quiz about the Linnaean system of classification!

Record your answers on the Classification Quiz Activity Sheet. Your teacher will go through the answers with you at the end of the quiz.

Score a point for every correct answer your team gives.

Which group will score the most points?!

Classification Quiz

Choose a team name for your group: _____

Complete your answers below.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

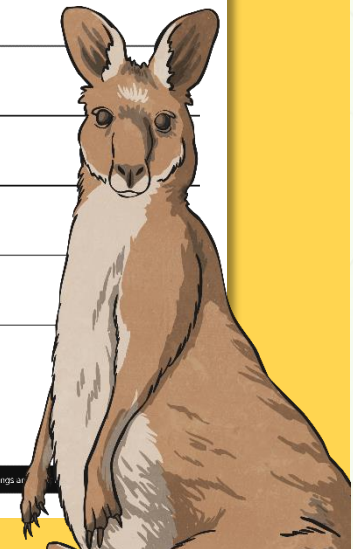
7. _____

8. _____

Total points: _____



Science | Year 6 | Living Things and



Classifying Species

Here you can see how a species can be classified at each level of the standard system.

Domain: Eukarya	jackal, clownfish, cat, dog, ladybird, daisy, rabbit, fox, human
Kingdom: Animals	jackal, clownfish, cat, dog, ladybird, rabbit, fox, human
Phylum: Chordata	jackal, clownfish, cat, dog, rabbit, fox, human
Class: Mammals	jackal, cat, dog, rabbit, fox, human
Order: Carnivora	jackal, cat, dog, fox
Family: Canidae	jackal, dog, fox
Genus: <i>Canis</i>	jackal, dog
Species: <i>Lupus</i>	dog

Classifying Species

Genus: *Canis*

jackal, dog

Species: *Lupus*

dog

The genus and species are always written in italics. The names of the genus and species are used to give the scientific name (recognised Latin name) of each living thing.

So the scientific name for a dog is *Canis lupus*.



Classifying Species Activity



Choose another living thing from the list below and follow the levels of the classification system to classify it. Complete your Classifying Species Activity Sheet to show how it fits into each level of the standard system.

Use the genus and the species to give the scientific name of the species.

You will need to use books or the Internet to research the animal and find the information you need.



jackal



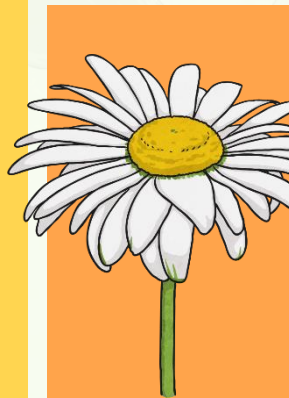
clownfish



cat



ladybird



daisy



rabbit



fox



human

Invent a Mnemonic



The levels of the classification system can be tricky to remember. Work with your partner to invent a mnemonic to help you!

The letters you need to use are:

D

K

P

C

O

F

G

S

Domain

Kingdom

Phylum

Class

Order

Family

Genus

Species

An example mnemonic could be:

Does Keep Precious Creatures Organised For Grumpy Scientists

Aim



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Classification Quiz

Choose a team name for your group: _____

Complete your answers below.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____






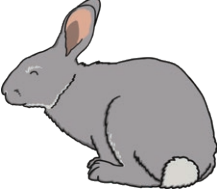
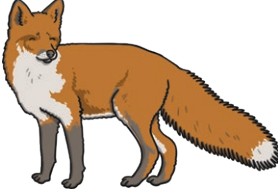

7. _____

8. _____

Total points: _____

Classifying Species

Choose one of the living things below and find out how it is classified in the Linnaean system.

 jackal	 clownfish	 cat	 ladybird
 daisy	 rabbit	 fox	 human

Complete the levels of classification to show what you have found out.

Living thing: _____

Domain: _____

Kingdom: _____

Phylum: _____

Class: _____

Order: _____

Family: _____

Genus: _____

Species: _____

What is the scientific name of your chosen living thing?

Classifying Species Answers

Here are the answers to the 8 different options children can choose when completing the Classifying Species Activity Sheet.

Living Thing	Jackal
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Canidae
Genus	Canis
Species	Aureus
Scientific Name	Canis Aureus

Living Thing	Clownfish
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Actinopterygii
Order	Perciformes
Family	Pomacentridae
Genus	Amphiprion
Species	Percula
Scientific Name	Amphiprion Percula

Living Thing	Cat
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Felidae
Genus	Felis
Species	Sivestris
Scientific Name	Felis Silvestris catus

Living Thing	Daisy
Domain	Eukarya
Kingdom	Plantae
Phylum	Magnoliophyta
Class	Equisetopsida
Order	Asterales
Family	Asteraceae
Genus	Bellis
Species	Perennis
Scientific Name	Bellis Perennis

Living Thing	Rabbit
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Lagomorpha
Family	Laporidae
Genus	Oryctolagus
Species	Cuniculus
Scientific Name	Oryctolagus Cuniculus

Living Thing	Ladybird
Domain	Eukarya
Kingdom	Animalia
Phylum	Arthropoda
Class	Insecta
Order	Coleoptera
Family	Coccinellidae
Genus	Coccinella
Species	Septempunctata
Scientific Name	Coccinella Septempunctata

Classifying Species Answers

Here are the answers to the 8 different options children can choose when completing the Classifying Species Activity Sheet.

Living Thing	Fox
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Canidae
Genus	Vulpes
Species	Vulpes
Scientific Name	Vulpes Vulpes

Living Thing	Human
Domain	Eukarya
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Primates
Family	Hominidae
Genus	Homo
Species	Sapien
Scientific Name	Home Sapiens

Questions and Answers

1. How many kingdoms did Linnaeus originally include? **Three**
2. Which of his kingdoms is no longer used in the standard system of classification? **Minerals**
3. What is the new level of classification that has been introduced above the kingdoms? **Domain**
4. Approximately how many specimens of plants, animals and shells did Linnaeus collect and examine when working on his classification system? **40,000**
5. Which edition of his 'Systema Naturae' is thought to be the most important? **The tenth edition**
6. Are amphibians, birds, mammals, reptiles and fish classes or orders? **Classes**
7. Does the phylum chordata include vertebrates or invertebrates? **Vertebrates**
8. The definition of a species is a group of animals that can reproduce to produce fertile _____.
Offspring

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