WALT: describe basic classification (using Mrs Gren) and understand that living things are divided into 5 Kingdoms.

Take a look at your new Knowledge Organiser!

Don't try to learn it all at once. Bit by bit is best.

Y6 Science Knowledge Organiser—Living Things and Their Habitats

Key Knowledge

Learn these key facts—key points in red

Living Things—What Do We Need To Know?

- Classification means to group living things based on similar characteristics.
- How to classify something as living or non-living —MRS GREN (Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion and Nutrition)
- Understand that scientists have organised living things into 5 broad groups called kingdoms: plants, animals, fungi, protest and prokaryote. Children only need to know the characteristics of living things within the groups animals, plants and fungi. This will help them to classify animals into their similar and different characteristics
- To be able to group things (living and non-living) using a classification key.
- Learn about the work of Carl Linnaeus. Understand how his work impacts how we classify living things today.
- Understand what micro-organisms are and learn about the 3 distinct categories within this group (bacteria, virus and fungi). Know that some bacteria can be helpful/beneficial for our health and some can be harmful to our health. Learn how to stop harmful bacteria from spreading.

The 7 Levels of Classification

Today we use 7 different levels of classification. These are as follows:

KINGDOM (KEEPING)
PHYLUM (PRECIOUS)
CLASS (CREATURES)
ORDER (ORGANISED)
FAMILY (FOR)
GENUS (GRUMPY)
SPECIES (SCIENTISTS)

Here is an example of how humans are classified. You will see that our species is homo sapiens.

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Primates
Family: Hominidae
Genus: Homo
Species: Homo sapiens

What is a classification key?

A classification key is a tool that uses yes/no questions to group living

Focus Scientists — Carl Linnaeus

Carl Linnaeus (1707-1778) was a botanist, zoologist and physician. He's most famous for simplifying the naming system scientists use to describe the millions of species on Earth.

Key Vocabulary

Understand these key words

Word	Definition
classification	a way of grouping things based on similar characteristics.
classification key	a series of questions about the organism's physical characteristics.
living	alive now or once was alive. Has all of the 7 characteristics from MRS GREN.
non-Living	not alive now and never was alive. Does not possess all of the 7 MRS GREN characteristics e.g. fire.
vertebrate	living things with a backbone e.g. dogs, fish and humans.
invertebrate	living things without a backbone e.g. fly, spider, jellyfish.
amphibian	cold-blooded vertebrate animals (e.g. frogs and toads) that have gills and live in water as young but breathe air as adults.
bird	warm-blooded, egg-laying animals that have vertebrae, or a backbone. They are different from mammals because they lay hard -shelled eggs and have feathers. A **bird** has four limbs—two that are wings—along with a beak and no teeth.
fish	an animal that lives in water and has fins for swimming and gills for breathing. **Fish** are cold-blooded animals with skeletons inside their bodies. Most **fish** have scales on their skin.
mammal	an animal that breathes air, has a backbone, and grows hair at some point during its life. In addition, all female **mammals** have glands that can produce milk. **Mammals** include a wide variety of animals, from cats to humans to whales.
reptile	a cold-blooded animal (as a snake, lizard, turtle, or alligator) that breathes air and usually has the skin covered with scales or bony plates.
environment	all of the conditions that affect a living thing.
organism	a living thing made up of one or more cells and able to carry on the activities of life (e.g. using energy, growing, or reproducing).
characteristic	any feature that helps identify something.

You can also play the knowledge and vocabulary games on the Year 6 daily home learning page!

Classification

We are going to be learning about how scientists classify living things.

Before we begin can you give a defintion of what a living thing is?

(Answer on next page)

Classification

The term 'living thing' refers to things that are now or once were alive. They must do each of the following: grow and develop, use energy, reproduce, respond to their environment, excrete, respire and move.

From your knowledge organiser

How to classify something as living or non-living —MRS GREN (Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion and Nutrition)

Mrs Gren

Movement

All living things move.

Animals move around to get from place to place.

Plants grow and turn towards the light.

Mrs Gren

Respiration

All living things respire.

All living things release energy from their food by respiration. Most organisms need oxygen to do this.

Mrs Gren

Sensitivity

All living things are sensitive.

Every living thing can detect changes in their surroundings.

Mrs Gren

Growth

All living things grow.

Animals grow from babies to adults.

Seeds grow into plants.

Mrs Gren

Reproduction

All living things reproduce.

Animals have young.

Plants produce seeds from which more plants grow.

Mrs Gren

Excretion

All living things excrete.

Waste products are removed from the body.

Both plants and animals have to get rid of excess gas and water.

Mrs Gren

Nutrition

All living things need nutrition.

Animals eat food in order to get nutrients whereas plants produce their own food by turning sunlight into energy. This is called photosynthesis.

Activity 1: Using your sheet (or just write the acronym MRS GREN in your home-learning book/paper, one letter per line), develop what each element refers to.

Movement
Respiration
Sensitivity

Growth
Reproduction
Excretion
Nutrition

M_____

R_____

S_____

G_____

R_____

E_____

N_____

For example:

All living things need nutrition. Animals eat food in order to get nutrients whereas plants produce their own food by turning sunlight into energy. This is called photosynthesis.

Classification

Activity 2: Draw this table in your home-learning book/on some paper.

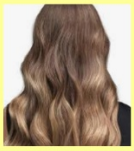
Living	Non living	Unsure

Using this acronym to help you, decide which of these things we want to classify as living or non-living.

Movement
Respire
Sensitive

Growth
Reproduction
Excretion
Nutrition

You can sort the pictures by cutting and sticking, drawing them or simply writing the name of the object/thing in the picture.



What is in your unsure column?
Why?
Does it meet the MRS GREN criteria?
Does it only meet some of the MRS GREN criteria?

(Answers on next page)

Classification

Let's see if you got the right answers

Table - non-living
Baby - living
Pencil - non-living
Fire - non-living
Egg - living
Tree - living
Seeds - living
Buildings - non-living
Hair - non-living

Self-mark your answers.

Correct any you got wrong and explain why it belongs in that category.

Now we understand what living things are, let's look at the different ways they are classified (grouped).

What is Classification?

How many different species of living things are there on Earth?

Scientists believe that there could be as many as 10 million different species on Earth! It would be very hard to study the lives and behaviours of all these living things without grouping them together somehow.

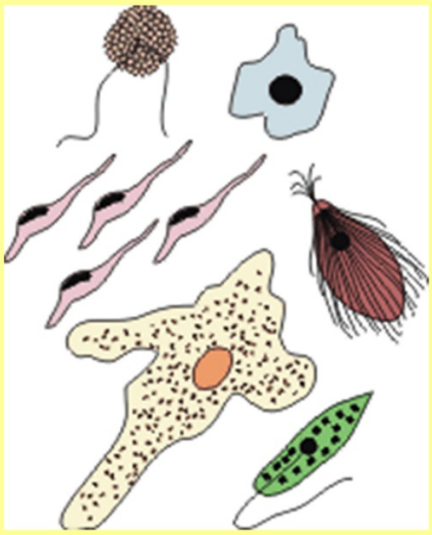
Scientists sort and group living things according to their similarities and differences. This is called classification. Scientists who classify living things are called taxonomists.

Scientists broadly agree that there are 5 distinct groups that living things fall under. Each group is called a Kingdom.

Can you guess what some of this vocabulary means?

Can you think of some organisms that might belong to each group?

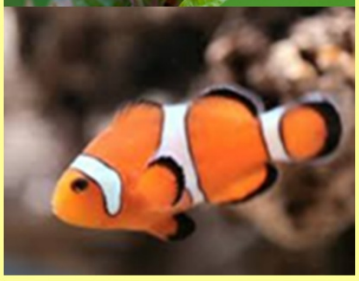
- **<u>Protoctista Kingdom</u>** – single cell organisms with a nucleus, pond algae is a protoctista



- **<u>Monera Kingdom</u>** – bacteria, no nucleus, can live almost anywhere they divide to reproduce

- **<u>Fungi Kingdom</u>** – don't make food instead they live off decaying plants, there are about 70,000 known fungi!

- **<u>Animalia Kingdom</u>** – There are so many different types of animals that is why we classify them into detailed groups.



- **<u>Plantae</u>** – There are so many different types of plants that is why we classify them into more detailed groups. Plants use photosynthesis to make their own food.

Classification

E.g. bacteria

An amoeba

5 Kingdoms

Mushrooms are a type of fungi

Plants

Animals

So, what is the purpose of classifying organisms?

What is the purpose of classifying anything at all?

Think of the following:

Library

Supermarket

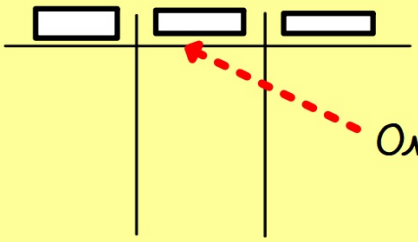
School

Activity 3: Can we classify (group) ourselves as a class?

How many different characteristics can you divide our class into?

Present this in whichever way you would like, you could:

- Draw a table like before and write names in it using your own titles to categorise.
- Draw a mind map with your own 'kingdoms'.
- Another creative idea!



Share your work with your teacher if you can.