



## The Characteristics of Life

The oldest fossils on Earth are from 3.4 billion years ago. They come from an organism, like simple bacteria, called **Archaea**. All life has evolved from these simple cells.



**Metabolism** - is the sum of all chemical reactions in the body.



If you have a fast metabolism, you generally move more **quickly**.  
If you have a slow metabolism, you move **slowly**.





## 5 Characteristics of Living Things

### 1. Organisation

All living things are made of cells.



### 2. Nutrition

**Is the way organisms get and use their food.**

Food is needed for energy, growth and repair.



**Autotrophs** – Can make their own food. E.g. plants

**Heterotrophs** - Animals get food from plants or other animals.





### 3. Excretion

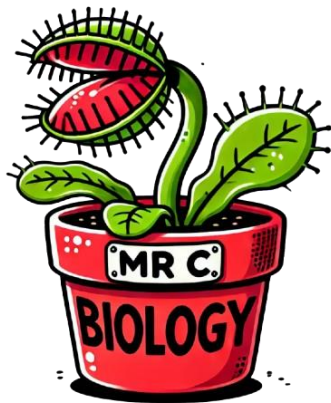
**Is the removal of waste products made in the body.**

e.g. breathing, sweating and urinating.

All living things excrete wastes. Plants have less wastes than animals as they recycle their Oxygen and Carbon Dioxide.



### 4. Response



**Response is the way living things react to changes in their environment.**

These changes are called stimuli.

Plants tend to have slower responses, but not always!





## 5. Reproduction

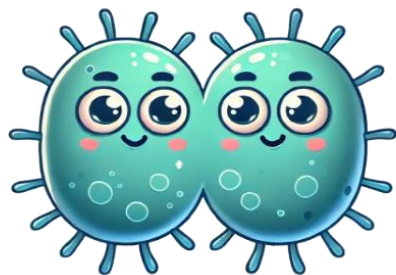
All living things need to reproduce.

Reproduction is how life began and continues.

**Continuity of Life** - means that **living things arise from other living things** of the same type.



**Asexual Reproduction** – involves **no** sex cells and produces clones



**Clones** are identical copies of an individual or cell. e.g. like bacteria.





**Sexual Reproduction** - involves **gametes**, (sex cells) e.g. pollen



The offspring from **two parents** carries DNA from **both parents**. This means the offspring is slightly different from both parents.

### Questions on Characteristics of Life

Q.1 What do we call the sum of all the chemical reactions in the body?

Q.2 How would you define Excretion?

Q.3 Complete the following. Cells -> T\_\_\_\_\_ -> O\_\_\_\_\_ -> Systems.





## SUMMARY

### 1. Organisation



2. **Nutrition** - Food is needed for **energy**, growth and repair.

3. **Excretion** - Is the removal of **waste products** made in the body.

4. **Response** - Response is the way living things **react to changes** in their environment.

5. **Reproduction** - All living things need to **make**  **copies** of their genes.

