





**[Type the company name]**

2013

**Unit 1**

**Characteristics of Living Things**

**6th Grade Science**







Section 1: Characteristics of Living Things

An **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is any living thing.

**There are six things that all living organisms have in common.**

**1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_** organisms are made up of **\_\_\_\_\_\_\_\_\_\_\_.**

Definition of a **\_\_\_\_\_\_\_\_\_**: Basic **\_\_\_\_\_** of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** & **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in an organism.

If the organism is made of only **\_\_\_\_\_** (1) cell it is called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

If the organism is made of **\_\_\_\_\_\_\_\_** cells it is called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_** organisms are made of many of the same things.

Some common materials:

**\_\_\_\_\_\_\_ ( H2O )** Vital for chemical **\_\_\_\_\_\_\_\_\_\_\_\_** & **\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (sugars)** **\_\_\_\_\_\_\_\_\_\_** source for organisms

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Used as **\_\_\_\_\_\_\_\_\_\_\_\_** materials (muscles)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Used as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** materials (fats)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Codes **\_\_\_\_\_\_\_\_\_\_\_\_\_** Information **(DNA)**

**3. Energy Use**

**\_\_\_\_\_\_\_\_\_\_** organisms use **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for various reasons.

**\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_\_\_\_\_\_\_\_\_\_

**4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_** organism **\_\_\_\_\_\_\_\_\_\_** and \_\_\_\_\_\_\_during its **\_\_\_\_\_\_\_\_\_\_**. Organisms will \_\_\_\_\_\_\_, become more \_\_\_\_\_\_\_\_\_\_, and change in size. Some grow larger and more complex, but others shrink and become less complex.

**5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_** organisms will react to things that happen in its **\_\_\_\_\_\_\_\_\_\_\_\_\_**. These situations are split into two parts:

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** this is something in the **\_\_\_\_\_\_\_\_\_\_\_\_\_** that makes you **\_\_\_\_\_\_** such as changes in **\_\_\_\_\_\_\_**, \_\_\_\_\_\_, or

**\_\_\_\_\_\_\_\_\_\_\_\_**.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: this is any **\_\_\_\_\_\_\_\_\_\_** or change in **\_\_\_\_\_\_\_\_\_\_\_\_** due to a stimulus.

**6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_** organisms must have the ability to **\_\_\_\_\_\_\_\_\_\_\_\_** or the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** will become **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

This can be done either:

**\_\_\_\_\_\_\_\_\_\_\_\_**: when \_\_\_\_\_\_members of the same **\_\_\_\_\_\_\_** mix their **\_\_\_\_\_\_\_\_\_** together and produce an

offspring very **\_\_\_\_\_\_\_\_\_\_\_\_**to themselves.

**\_\_\_\_\_\_\_\_\_\_\_**: when an **\_\_\_\_\_\_\_\_\_\_\_\_** does **\_\_\_\_\_\_** mix genes with another and produces an offspring that is **\_\_\_\_\_\_\_\_\_\_**to itself. (**\_\_\_\_\_\_\_\_\_\_**, \_\_\_\_\_\_\_\_\_\_, etc)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**

Choose any two objects that you wish. One must be living, the other must be nonliving. Using the above six characteristics, explain whether the objects are either living or nonliving. Discuss all 6 characteristics for each object. Draw or attach pictures if you need to. Do not use any more than one piece of paper. Remember, it has to meet all 6 in order to be considered alive!

What Creates Life?

Well, **\_\_\_\_\_\_\_\_\_\_\_** Creates **\_\_\_\_\_\_\_\_\_\_\_**.

This may seem obvious now, but it was not always so…

Not so long ago, people thought that life could be created. They called this phenomenon…

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: the idea that living things can sprout from nonliving things.

Many people lived near shallow **\_\_\_\_\_\_\_\_\_\_\_** or pools. When the lakes would **\_\_\_\_\_\_\_\_\_\_\_** up many of the fish would die, but no one saw any **\_\_\_\_\_\_\_\_\_\_\_**. When the rainy season returned the lakes would fill back up and **\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_**, & **\_\_\_\_\_\_\_\_\_\_\_** would thrive once again. The people believed that life had a **\_\_\_\_\_\_\_\_\_\_\_**. Many people spent their lives trying to discover just the right combination of **\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_**, shells, etc to make these kinds of life.

**Two Famous Scientists**

**\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_**: An **\_\_\_\_\_\_\_\_\_\_\_** doctor in **\_\_\_\_\_\_\_**. He is among the first documented scientist to perform experiments to **\_\_\_\_\_\_\_\_\_\_\_** the spontaneous generation theory.



Redi disproved the idea that **\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_** spontaneously created **\_\_\_\_\_\_\_\_\_\_\_**. He did this through a perfect example of a controlled **\_\_\_\_\_\_\_\_\_\_\_**. **[You will need to know about this experiment]**

**Louis Pasteur**: A **\_\_\_\_\_\_\_\_\_\_\_** chemist who, in the **\_\_\_\_\_\_\_\_\_\_\_\_** finally put an end to the theory of spontaneous generation. People had begun to realize that large, **\_\_\_\_\_\_\_\_\_\_\_** organisms could not be created, but many held on to the theory that microscopic life could, since it was **\_\_\_\_\_\_\_\_\_\_\_**. They commonly saw it happen in things such as **\_\_\_\_\_\_\_\_\_\_\_** & **\_\_\_\_\_\_\_\_\_\_\_**.



Pasteur developed a flask that would allow **\_\_\_\_\_\_\_\_\_\_\_** to pass into the container, but no solid particles like **\_\_\_\_\_\_\_\_\_\_\_** could get by. Through his experiment, he showed that high **\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_** bacteria. He also showed that these liquids **\_\_\_\_\_\_\_\_\_\_\_** because already **\_\_\_\_\_\_\_\_\_\_\_** bacteria reproduce, or bacteria from the **\_\_\_\_\_\_\_\_\_\_\_** are allowed to get in. **[You will need to know about this experiment]**

**Four (4) Basic Needs of All Living Things**

**1. \_\_\_\_\_\_\_\_\_\_\_\_**

All organisms need to get their **\_\_\_\_\_\_\_\_\_\_\_\_** somewhere. Some people call this **\_\_\_\_\_\_\_\_\_\_\_\_**.

There are **\_\_\_\_\_\_\_\_\_\_\_\_** different types of organisms if you categorize them by **\_\_\_\_\_\_\_\_\_\_\_\_** they get their **\_\_\_\_\_\_\_\_\_\_\_\_**.

**A. \_\_\_\_\_\_\_\_\_\_\_\_**: in Greek “Auto” means “**\_\_\_\_\_\_\_\_**” & “Troph” means “**\_\_\_\_\_\_\_\_\_\_\_\_**”

An Autotroph then, is an organism that can **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

Examples: All **\_\_\_\_\_\_\_\_\_\_\_\_** are Autotrophs. Where do they get the **\_\_\_\_\_\_\_\_\_\_\_\_** to create their own food? **\_\_\_\_\_\_\_\_\_\_!**

**B. \_\_\_\_\_\_\_\_\_\_\_\_**: in Greek “Hetero” means “**\_\_\_\_\_\_\_\_\_\_\_\_**”

A Heterotroph then, is an organism that uses **\_\_\_\_\_\_\_\_\_\_\_\_** for **\_\_\_\_\_\_\_\_\_\_\_\_**.

Examples: Any **\_\_\_\_\_\_\_\_\_\_\_\_**, whether it eats **\_\_\_\_\_\_\_\_\_\_\_\_** or **\_\_\_\_\_\_\_\_\_\_\_\_**. Where does the energy they eat ultimately originate? **\_\_\_\_\_\_\_\_\_\_\_\_**

C. **\_\_\_\_\_\_\_\_\_\_\_\_**: In Greek “Chemo” means “Useful Thing” but in modern times we use it to mean **\_\_\_\_\_\_\_\_\_\_\_\_**from **\_\_\_\_\_\_\_\_\_\_\_\_** in its **\_\_\_\_\_\_\_\_\_\_\_\_**.

Examples: **\_\_\_\_\_\_\_\_\_\_\_\_** that live near **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** use Hydrogen Sulfide (H2S) to create **\_\_\_\_\_\_\_\_\_\_\_\_**. H2S would be **\_\_\_\_\_\_\_\_\_\_\_\_** in even **\_\_\_\_\_\_\_\_\_\_\_\_** doses to any of you. Plus, these bacteria live in water that can be warmer than **\_\_\_\_\_\_** °C (**\_\_\_\_\_\_**+ °F) These creatures (and those that **\_\_\_\_\_ \_\_\_\_\_\_\_\_**them) are the **\_\_\_\_\_\_\_\_\_\_** creatures on **\_\_\_\_\_\_** that **\_\_\_\_ \_\_\_\_\_\_\_**depend on the **SUN** for survival.

**2. \_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_** is known as the **\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_**. This is because it can **\_\_\_\_\_\_\_\_\_\_\_\_** nearly **\_\_\_\_\_\_\_\_\_\_\_\_** chemical.

Every organism needs water in order to **\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_**and **\_\_\_\_\_\_\_\_\_\_\_\_** around inside the body. In humans, nutrients are constantly being brought to organs and waste is taken away from organs. All of this happens in the **\_\_\_\_\_\_\_\_\_\_\_\_**, which is **\_\_\_\_\_\_** water.

Water is also important because many of the chemical **\_\_\_\_\_\_\_\_\_\_\_\_** that your body needs to survive cannot happen **\_\_\_\_\_\_\_\_\_\_\_\_** water. Medicines are designed to be taken with water. If you eat a pill **\_\_\_\_\_\_\_\_\_\_\_\_** a glass of water, that medicine will not work nearly as well.

Many organisms can live for **\_\_\_\_\_\_\_\_** without any **\_\_\_\_\_\_\_\_\_**, but very few can survive for more than a couple of **\_\_\_\_\_\_\_\_** without **\_\_\_\_\_\_\_\_**.

**3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

“A man’s home is his castle!” Well, people aren’t the only ones that need **\_\_\_\_\_\_\_\_\_\_\_\_**. **\_\_\_\_\_\_\_\_\_\_\_\_** organism needs a place to live. When that space is **\_\_\_\_\_\_\_\_\_\_\_\_**, some organisms can be very effective at keeping others out. This is called **\_\_\_\_\_\_\_\_\_\_\_\_**.

Competition occurs whenever there is any **\_\_\_\_\_\_\_\_\_\_\_\_** that must be **\_\_\_\_\_\_\_\_\_\_\_\_** between two organisms. Anything that **\_\_\_\_\_\_\_\_\_\_\_\_** the **\_\_\_\_\_\_\_\_\_\_\_\_** of organisms that can **\_\_\_\_\_\_\_\_\_\_\_\_** in a certain place is called a **\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_**. Competition is the driving force behind **\_\_\_\_\_\_\_\_\_\_**.

When organisms are competing over living space their **\_\_\_\_\_\_\_\_\_\_\_\_** are to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, or **\_\_\_\_\_\_\_\_\_\_\_\_**. Not **\_\_\_\_\_\_\_** organisms have the option of moving (**\_\_\_\_\_\_\_\_\_\_\_\_**).

**4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Every organism needs to be able to maintain its **\_\_\_\_\_\_\_\_\_\_\_\_** functions even under the most **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

When talking about **\_\_\_\_\_\_\_\_\_\_\_\_**, some animals are “warm blooded” while others are “cold blooded.” We are warm blooded because we can use **\_\_\_\_\_\_\_\_\_\_\_\_** to keep our internal temperature **\_\_\_\_\_\_\_\_\_\_\_\_**.

This allows us to always be **\_\_\_\_\_\_\_\_\_\_\_\_**. **\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_**cannot do this; they must **\_\_\_\_\_\_\_\_\_\_\_\_** in the **\_\_\_\_\_\_\_\_\_\_\_\_** to stay warm. When the climate gets **cold**, their body temperature drops and they **\_\_\_\_\_\_\_\_\_\_\_\_** function properly.

Another example is **\_\_\_\_\_\_\_\_\_\_\_\_** that live on **\_\_\_\_\_\_\_\_\_\_\_\_** beaches. These organisms need to survive under **\_\_\_\_\_\_\_\_\_\_\_\_** during **\_\_\_\_\_\_\_\_\_\_\_\_** tide and also exposed to **\_\_\_\_\_\_\_\_\_\_\_\_**during **\_\_\_\_\_\_\_\_\_\_\_\_** tide. This is no easy feat; most organisms would die within half-a-day in this environment. Clams can **\_\_\_\_\_\_\_\_\_\_\_\_** themselves so tight, though, that they trap enough ocean **\_\_\_\_\_\_\_\_\_\_\_\_** inside them during high tide that they don’t **\_\_\_\_\_\_\_\_\_\_\_\_** out during low tide.

Being able to do this is called **\_\_\_\_\_\_\_\_\_\_\_\_**.

In Greek “\_\_\_\_\_” is “**\_\_\_\_\_\_\_\_\_\_\_\_**” & “Stasis” is “**\_\_\_\_\_\_\_\_\_\_\_\_**”.