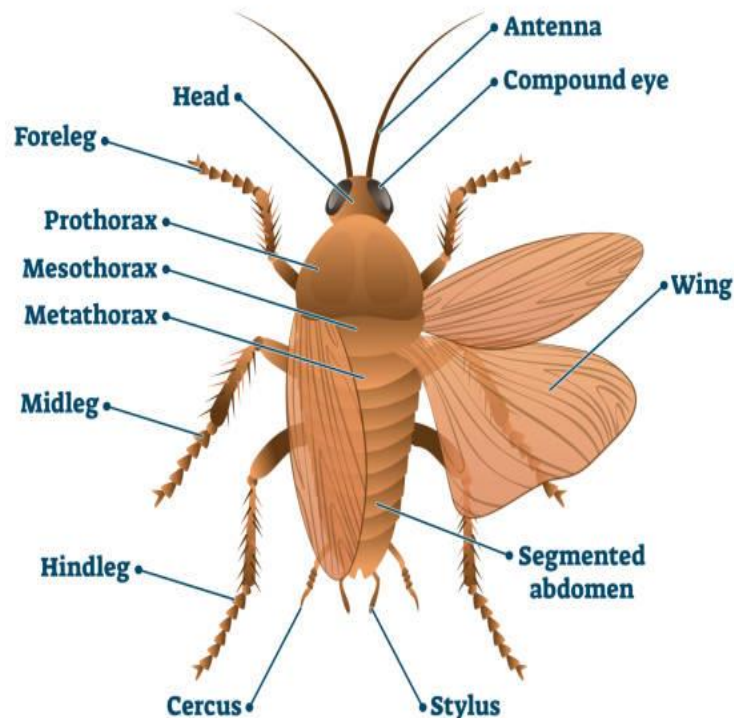


10th Grade

# Cockroach and Earthworm

# Facts about cockroaches

## COCKROACH



### 1.) A Cockroach Can Live for Week Without Its Head

Due to their open circulatory system, and the fact that they breathe through little holes in each of their body segments, they are not dependent on the mouth or head to breathe. The roach only dies because without a mouth, it can't drink water and dies of thirst.

### 2.) A Cockroach Can Hold Its Breath for 40 Minutes

These pests can even survive being submerged under water for half an

hour. They hold their breath often to help regulate their loss of water.



# Facts about cockroaches

## **3.) Newborn German Cockroaches Become Adults in as Little as 36 Days**

In fact, the German cockroach is the most common of the cockroaches and has been implicated in outbreaks of illness and allergic reactions in many people.

## **4.) A One-Day-Old Baby Cockroach Can Run Almost as Fast as Its Parents**

For reference, these babies are about the size of a speck of dust! So, not only are they fast, but they are also elusive, which is a dangerous combination for a pest known to transmit various diseases.

## **5.) The American Cockroach Has Shown an Attraction to Alcohol**

Similar to other pests, this cockroach species is drawn to some alcoholic beverages, especially beer. They are most likely attracted by the hops and sugar present in the drink.

# Facts about cockroaches

## **6.) The World's Largest Roach is Six Inches Long**

Only found in South America, this species also has a one-foot wingspan. For context, average cockroaches can vary in size from 1/2"- 2" long.

## **7.) Cockroaches are Really Old**

It is believed that cockroaches originated more than 280 million years ago in the Carboniferous era.

## **8.) There are More Than 4,000 Different Cockroach Species Worldwide**

The most common species is the German cockroach. Other cockroaches found in America include the brown-banded cockroach, American cockroach and oriental cockroach



# Facts about cockroaches

## **9.) They Can Run Up to Three Miles in an Hour**

While this may seem like an impressive athletic ability, what it really means is that they can spread germs and bacteria throughout a home very quickly.

## **10.) Cockroaches Can Live Without Food for One Month**

Cockroaches are able to go for so long without sustenance because they are cold-blooded insects. However, they can only survive for one week without water, which is why they are commonly found in humid or high-moisture areas around the home, such as basements and bathrooms.

## **Observation:**

### **a. Cockroach**

Kingdom – Animalia

Sub-kingdom – Non-chordata

Phylum – Arthropoda

Class - Insecta

Example – Cockroach

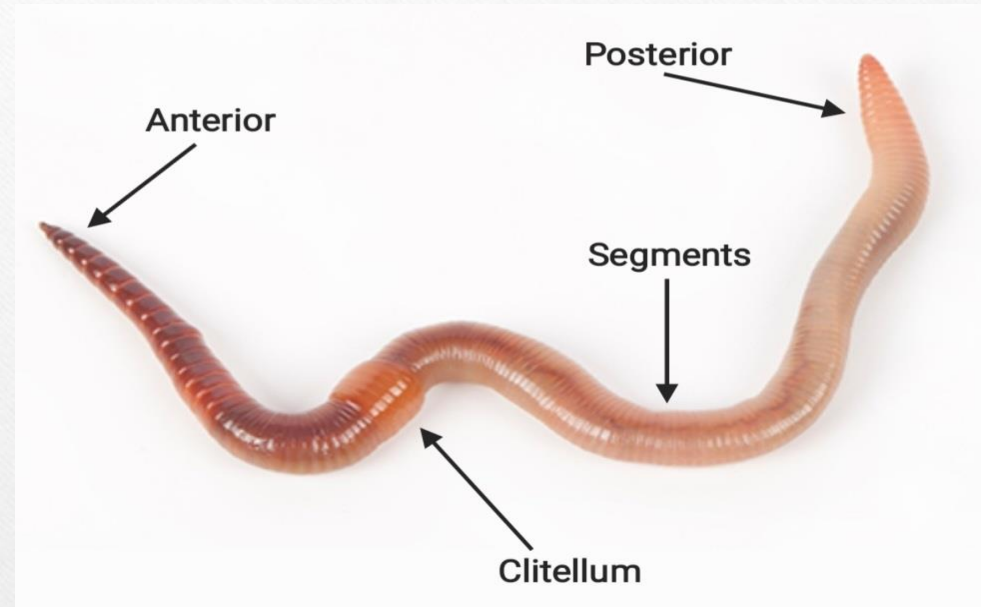
## **Characteristics:**

1. Cockroach is a terrestrial and nocturnal insect.
2. Head, thorax and abdomen are the three main body parts. Cockroach has three pairs of jointed legs and two pairs of wings.

# Facts about Earthworm

## 1.) Earthworm are hermaphrodites

Earthworms possess both male and female body organs, making them simultaneous hermaphrodites. Their mating typically occurs when it has rained, and the ground is suitably wet. They are incapable of reproducing on their own and will require another worm's assistance.



## 2.) Earthworm have more than one heart

Earthworms don't have a heart. They have ten pairs of pharyngeal arch arteries (five single-chambered aortic arches) that run across their bodies. They are counted as five hearts, mainly pumping blood and carrying food, waste, and respiratory gases throughout the earthworm's body. Their hearts are not as complicated as ours—maybe because their blood doesn't have to be pumped to many body parts.



# Facts about Earthworm

In taxonomy, earthworms belong to the phylum Annelida, or segmented invertebrates. Members of this classification include aquatic worms, leeches, and other terrestrial worms. Worms of the phylum Nematoda, such as hookworms, roundworms, and threadworms, are usually cylindrical.

## **3.) Earthworm do not have eyes or legs**

Earthworms don't have eyes. Instead, they depend on their receptor cells located on their skin. These receptor cells are highly sensitive to light and touch. They have a hydrostatic skeleton and a sleek body that is well streamlined. This adaptation enables them to squeeze into very tight spaces. Earthworms don't have limbs either. They have well-developed, powerful longitudinal and circular muscles wrapped around every body segment that help them push their way into the soil by wriggling and writhing. The setae also help worms grip the ground as they move.

## **4.) Charles Darwin spent most of his years studying earthworms**

Charles Darwin, the father of evolution, spent over thirty years studying earthworms and published his results afterward. In the book titled "The Formation, Vegetable Mold, and Action of Worms," Darwin shared the results of his findings on earthworms' diet, intelligence, and lack of ability to hear and respond to sound.



# Facts about Earthworm

Earthworms do not have ears, but Darwin tested their sense of hearing. He noted that earthworms behaved the same regardless of their continent and couldn't hear sound but were responsive to vibration. Earthworms have a basic brain connected to their muscles and epidermis by nerves. The nerves detect any vibrations or flavors within the earthworm's habitat.

## **5.) Earthworm have no lungs or nose**

That's right; worms don't have lungs or noses. So, how do they breathe? Earthworms, like all animals, need oxygen but can't breathe through their mouths. Instead, earthworms breathe through their thin, permeable skin. They rely on diffusion to inhale and exhale, so the earthworm's skin must always be moist for dissolved oxygen to pass into their bloodstream. They usually keep their skin moist by secreting slimy mucus. Worms can hardly survive in an environment that's completely dry.

## **6.) Earthworms die or get paralyzed if exposed to sunlight for a long time**

Their skin contains several bio-molecules called sterol and tetraene, like humans. The effect of sunlight on earthworms degenerates circular and longitudinal muscles, thus drying the skin. Earthworms would be unable to breathe if the skin became too dry, and they would die.

# Facts about Earthworm

## **7.) Earthworms have an average lifespan of 4-8 years**

Earthworms live for approximately 4-8 years, though most garden worms do not exceed four years. They are constantly preyed on by many species of birds (starlings, crows, thrushes, robins, and gulls), toads, snakes, and numerous invertebrates (e.g., ground beetles, spiders, slugs, ants, and flatworms).

## **8.) The *Microchaetus rappi* is the longest earthworm**

*Microchaetus rappi* takes the record for the longest earthworm specimen ever found. It was discovered in 1976 on the road between King Williams Town and Alice in South Africa and was 21 feet long (6.4 m) when extended.

## **9) Earthworms are prone to protein poisoning**

Protein poisoning is inevitable in earthworms. It's caused by impaired protein digestion, which encourages fermentation, producing greater quantities of acidic compounds. Their calciferous glands can not excrete adequate calcium to neutralize acidity. Therefore, the gas build-up in the earthworms may lead to the rupture of their intestines, leaving them deformed.



# Facts about Earthworm

## 10.) Earthworm belong to the Animalia Kingdom

When mentioning earthworms, it is hard to automatically imagine them as animals. They belong to the Animalia Kingdom, though we often confuse them with insects. The fact that worms and insects come under the Animalia Kingdom does not mean worms are insects.

## **Observation:**

### **a. Earthworm**

Kingdom – Animalia

Sub-kingdom – Non-chordata

Phylum – Annelida

Example – Earthworm

## **Characteristics:**

1. Long cylindrical and metamerically segmented body covered with cuticle.
2. Its called 'Friend of farmer' as it dwells the land and make it loose.