

Nature's Transformers

Grade	Standard / Element
2	S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.
5	S5L1a - Develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.

Main ideas:

- Insects are one of the two main groups of animals that go through metamorphosis, changing their body's form over their life cycle.

Misconceptions:

- Spiders are classified as insects.
- The larval and pupa stages of a particular species are entirely different animals than the adult stage.
- All insects go through complete metamorphosis with four stages in their life cycle.

What You Need to Know:

- Insects are a vertebrate group that have six legs, a head containing its mouthparts and two antennae for sensing their surroundings, a thorax containing the majority of respiratory and circulation organs, and an abdomen. Spiders are arthropods with the obvious difference being their eight legs.
- Some insects transform their body through complete metamorphosis, such as a butterfly, or the darkling beetle example in the video. Complete metamorphosis consists of four stages of life: egg, larva, pupa, and adult.
- Some insects go through incomplete metamorphosis, such as a dragonfly or grasshopper. Incomplete metamorphosis lacks the pupa stage and the nymph transforms directly into the adult stage. There are a few insect species that are exceptions and do not go through a metamorphosis process at all, such as a silverfish.
- Over 50% of all living organisms are insects. This makes insects the most diverse animal group on the planet.
- Moths usually land with their wings spread while butterflies will land with their wings folded together. Moths caterpillars are usually "fuzzy" while no butterfly caterpillars are described this way. Moths are generally more nocturnal while butterflies are diurnal, or active during the daytime.