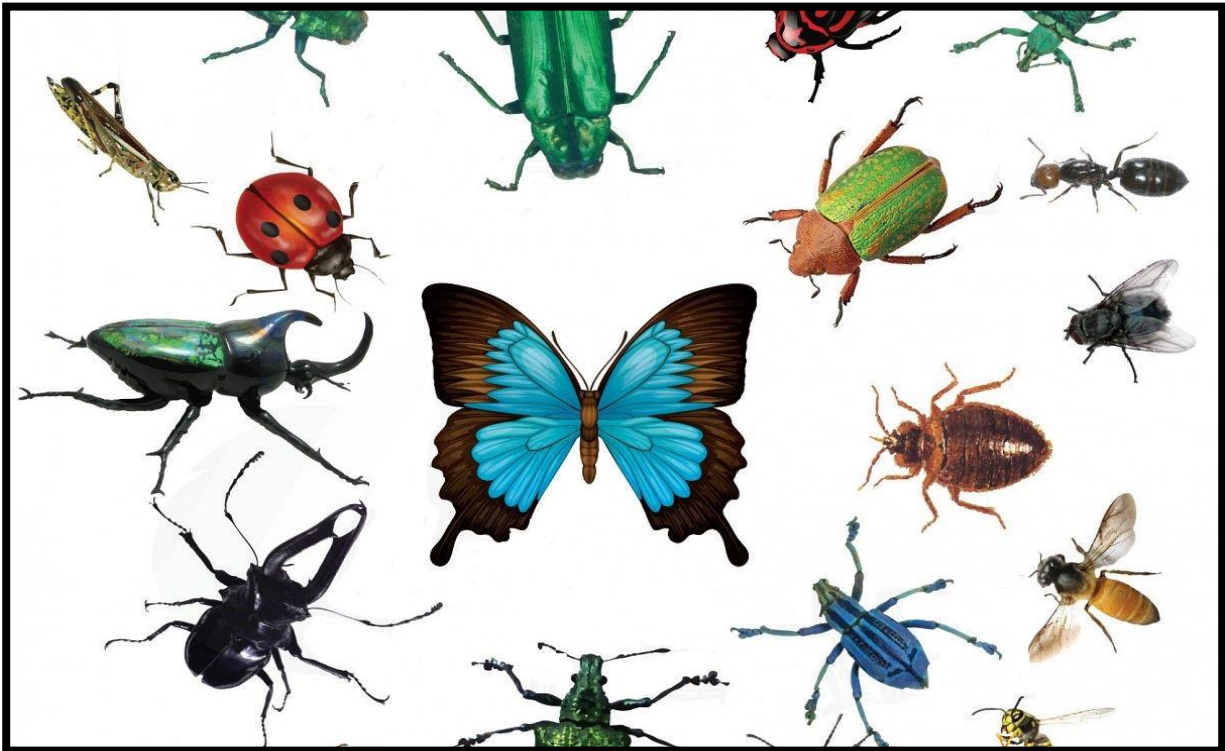


# A Bug's Life:

2020 - Driftwood Education Center



## **Class Description:**

*Ever wonder who is crawling around your backyard? This class will give you an insight to the fascinating world of insects and arachnids that roam the planet. Use microscopes to investigate the specialized adaptations that help our multi-legged friends survive. Then become an entomologist and find the best hiding spots of these fascinating critters. Lastly, gain an appreciation of insects because of the surprising amount of resources they provide for our planet.*

Driftwood Education Center  
Po Box 20712 St. Simons Island, GA 31522  
Phone: 912.638.3849 Fax: 912.634.0642

## Table of contents and outline:

### I. Pre-class set-up (10 min)

1. Set up and check pitfall traps
2. Gather supplies and set up classroom

### II. Introduction, Overview, and Assessment (10 min)

1. What is an arthropod? What is an insect?
2. Sort insects/arachnids into categories
3. Discuss classification of bugs

### III. Anatomy and Adaptations of Insects (20 min)

1. Discuss the three main parts of an insect
2. Use field microscopes to view insect features
3. Let groups compare and contrast body parts
4. Place critters in their correct habitat – activity

### IV. Search for Critters (30 min)

1. Explain how a pitfall trap works
2. Check traps
3. ID critters using iPads
4. If time, view Crickets and Praying Mantis

### V. The Secret Life of Insects (25 min)

1. Learn about Bees
2. Play Bee game
3. Play Tic Tac Impact

### VI. Conclusions and Wrap-up (5 min)

1. What is the difference between an insect, an arachnid, and a myriapod?
2. How do insects/arachnids impact the planet?
3. What is wrong is the word “bug”

### VII. Clean up

### V. Additional Information and Help

1. Instructions for Portable Microscope
2. Commonly found insects of coastal GA

### Georgia Performance Standards met:

**4<sup>th</sup> Grade:** S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

**5<sup>th</sup> Grade:** S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures  
S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.

**7<sup>th</sup> grade:** S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.

S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.

**HS:** SEN1. Obtain, evaluate, and communicate information about the roles of insects in ecosystems.

SEN2. Obtain, evaluate, and communicate information about how insect morphology and adaptation is related to insect success.

SEN3. Obtain, evaluate, and communicate information about the impact of insects on the production of food and other products and in popular culture and commerce.

SEN4. Obtain, evaluate, and communicate information about the impact of insects on human and other animal health, medicine, and biotechnology.

SEN5. Obtain, evaluate, and communicate information about the relationship between human activity and insect populations. due to catastrophic events, climate changes, human activity.

### Florida Standards met:

**4<sup>th</sup> grade:** SC.4.E.6.3 Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable  
SC.4L.17.4 Recognize ways plants and animals, including humans, can impact the environment.

SC.4N.1.1 Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information  
SC.4E.6.5 Investigate how technology and tools help to extend the ability of humans to observe very small things

**5<sup>th</sup> grade:** SC.5L.14.2 Compare and contrast the function of organs and other adaptations

SC.5L.15.1 Describe how, when the environment changes, differences between individuals allow some animals to survive and reproduce while others die or move to new locations

SC.5L.17.1 Compare and contrast adaptations displayed by animals that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics

**7<sup>th</sup> grade:** SC.7L.17.1 Explain and illustrate the relationships among producers, consumers, and decomposers in the process of energy transfer  
SC.7L.17.3 Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

**HS:** SC.912L.17.8 Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity.

### Next Generation Science Standards met:

**3<sup>rd</sup> grade:** 3-LS2-1 Construct an argument that some animals form groups that help members survive.

3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change

**4<sup>th</sup> grade:** 4-LS1-1. Construct an argument that animals have external structures that function to support survival, growth, and behavior

**5<sup>th</sup> grade:** 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment

**MS:** MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem

MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations

MS-ESS2-1 Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process

HS-LS2-8 Evaluate evidence for the role of group behavior on individual and species’ chances to survive and reproduce

### S. Carolina Standards met

**4<sup>th</sup> Grade:** 4.L.5 The student will demonstrate an understanding of how the structural characteristics and traits of plants and animals allow them to survive, grow, and reproduce.

**5<sup>th</sup> Grade:** 5.L.4 The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.

**6<sup>th</sup> Grade:** 6.L.4 The student will demonstrate an understanding of how scientists classify organisms and how the structures, processes, behaviors, and adaptations of animals allow them to survive.

**7<sup>th</sup> Grade:** 7.EC.5 The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.

**8<sup>th</sup> Grade:** 8.E.6 The student will demonstrate an understanding of Earth’s geologic history and its diversity of life over time.

**HS:** H.B.6 The student will demonstrate an understanding that ecosystems are complex, interactive systems that include both biological communities and physical components of the environment.