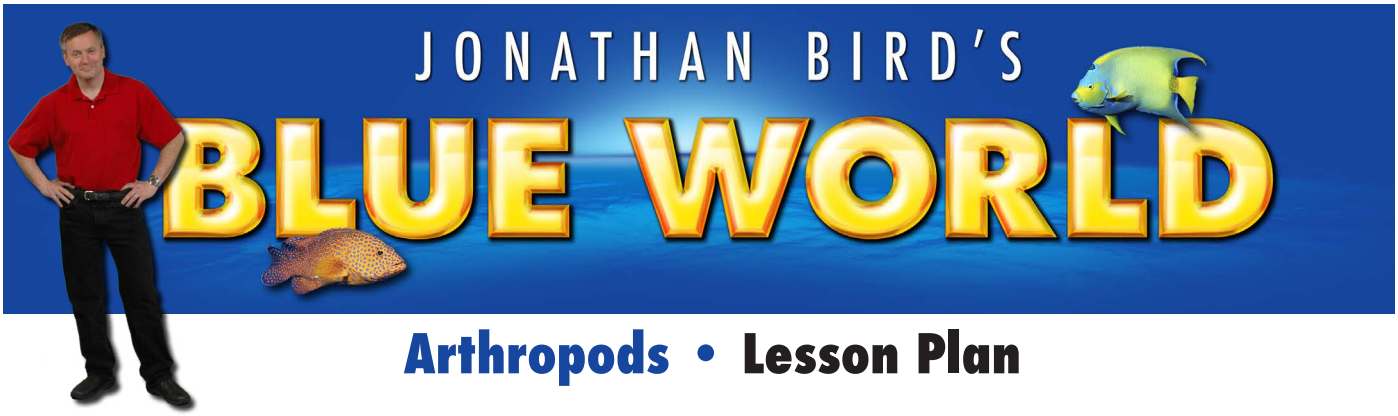


# Arthropods • Lesson Plan

**Grade Level**: Middle School (6th-8th grade)

**Video**: www.BlueWorldTV.com/webisodes/watch/what-are-arthropods

**Objective**:

- To introduce students to the fascinating world of Arthropods, the largest phylum of animals on Earth, with a focus on *marine* Arthropods.
- To teach students about the common characteristics, diversity, and unique features of Arthropods.
- To foster an appreciation for the importance of Arthropods in various ecosystems.

**Duration**: 2 class periods (45 minutes each)

**Next Generation Science Standards** (NGSS):

*Disciplinary Core Ideas*:

- LS2.A: Interdependent Relationships in Ecosystems
- LS2.B: Cycles of Matter and Energy Transfer in Ecosystems
- LS4.A: Evidence of Common Ancestry and Diversity
- LS4.B: Natural Selection
- LS4.D: Biodiversity and Humans

*Crosscutting Concepts*:

- Patterns
- Cause and Effect
- Systems and System Models
- Stability and Change

***Science and Engineering Practices***:

- Developing and Using Models
- Asking Questions and Defining Problems
- Constructing Explanations and Designing Solutions
- Engaging in Argument from Evidence

**Materials**:

- Projector and screen for displaying images and videos
- Whiteboard and markers
- Printed handouts of Arthropod diagrams


**Lesson 1: Introduction to Arthropods**

**Lesson Overview**: This lesson will provide students with a general understanding of Arthropods, their characteristics, and their diversity.

1. **Engagement** (10 minutes):
- Begin the lesson by showing the video script introduction (the first paragraph) to pique students' interest.
- Ask students if they can guess what "Arthropods" are based on the video script.

2. **Introduction to Arthropods** (15 minutes):
- Explain that Arthropods are the largest phylum of animals on Earth and provide a brief overview of what defines an Arthropod.
- Discuss the significance of insects among Arthropods, as mentioned in the video.
- Show images of various Arthropods (insects, crabs, lobsters, etc.) and highlight their differences.

3. **Arthropod Characteristics** (15 minutes):
- Discuss key characteristics of Arthropods, such as the exoskeleton, molting, jointed limbs, and compound eyes.
- Use a whiteboard to draw and label a simple Arthropod diagram to illustrate these characteristics.
- Explain the concept of molting with a visual representation.

4. **Activity** (5 minutes):
- Distribute printed handouts of Arthropod diagrams and have students label the key characteristics discussed.

**Lesson 2: Marine Arthropods and Their Diversity**

Lesson Overview: This lesson will focus on marine Arthropods, their diversity, and unique features.

1. **Recap** (5 minutes):
- Briefly recap the key characteristics of Arthropods from the previous lesson.

2. **Marine Arthropods** (15 minutes):
- Introduce the concept of marine Arthropods and discuss some examples, such as crabs, lobsters, shrimp, barnacles, copepods, and sea spiders.
- Explain how barnacles are different from the typical image of crustaceans.
- Show images of these marine Arthropods to help students visualize their appearance and habitats.


3. **Unusual Arthropods** (10 minutes):
- Discuss the remipede, an unusual marine Arthropod living in caves, and horseshoe crabs, which are ancient Arthropods.
- Explain the historical naming of horseshoe crabs.

4. **Arthropod Reproduction** (10 minutes):
- Explain how Arthropods reproduce, focusing on crabs, shrimp, and lobsters.
- Describe how their young start as planktonic larvae in the ocean.

5. **Conclusion** (5 minutes):
- Emphasize the incredible diversity of Arthropods and their presence in various environments.
- Discuss their role in ecosystems and the longevity of the phylum throughout Earth's history.

Homework/Extension: Students can research a specific marine Arthropod and create a presentation or poster to share with the class.

**Assessment**:
- Assess students' understanding of Arthropod characteristics through the labeled diagrams.
- Monitor class participation and engagement during discussions and activities.
- Evaluate homework or extension assignments for research and presentation skills.