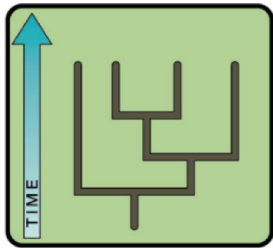




Name(s): \_\_\_\_\_ Date: \_\_\_\_\_

# Preconceptions about Evolutionary Trees

## Student Edition Worksheet



### Introduction:

Have you ever seen a branching diagram, like the one shown here? You probably have, in a textbook or at a museum. These diagrams are called evolutionary trees because, well, they are shaped kind of like trees and they tell us something about evolution! You have likely seen many examples of evolutionary trees in museums, school, or books. But what do you know, or think you know about how to read evolutionary trees? Today, you will be working through a lesson on how to build and “read” evolutionary trees.

### Instructions

Read each of the statements below and decide whether it is a true statement or a false statement. Circle the appropriate letter (T or F) and jot down your reasoning. It is completely fine if you are only guessing—you are not expected to know these answers yet.

As you work through the lesson, note any of your answers that change. Do not erase or cross out your original answers. Instead, take notes in the appropriate space after each question. Be prepared to discuss your answers with the class.

#### I. Evolutionary trees are models. T/F

Reasoning:

Did your answer change? Y/N

Questions 2–5 are about Ray Troll’s Tree of Life, shown to the right. (To answer the questions, you will find it easier to look at the full-size version your teacher has provided.)

2. According to Ray Troll’s Tree of Life, sea cucumbers are more evolved than sea stars. (Both groups can be found near the top of the tree.) T/F

*Reasoning:*



Ray Troll's Tree of Life

*Did your answer change?* Y/N

3. In Ray Troll’s Tree of Life, Eukaryotes are more evolved than prokaryotes. T/F

*Reasoning:*

*Did your answer change?* Y/N

4. In Ray Troll’s Tree of Life, time runs from the roots to the leaves. T/F

*Reasoning:*

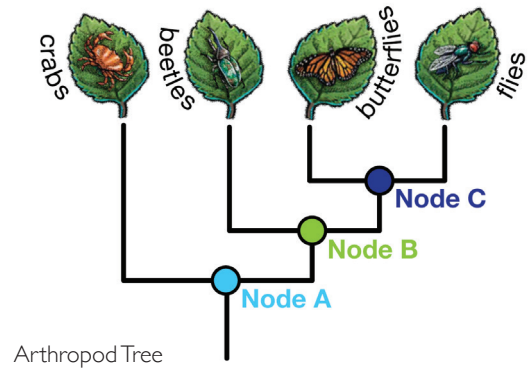
*Did your answer change?* Y/N

5. In Ray Troll’s Tree of Life, each leaf represents an unchanging, un-evolving group of organisms. T/F

*Reasoning:*

*Did your answer change?* Y/N

Questions 6–10 are about the Arthropod Tree shown to the right.



6. According to the Arthropod Tree, beetles are more closely related to crabs than they are to flies. T/F

Reasoning:

Did your answer change? Y/N

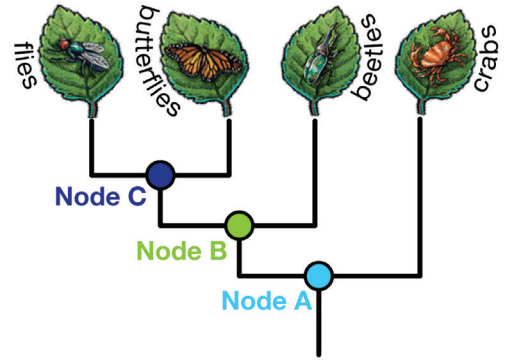
7. The node (branching point) labeled “C” on the Arthropod Tree represents the common ancestors of flies and butterflies. T/F

Reasoning:

Did your answer change? Y/N

8. The tree to the right gives the same information as the Arthropod Tree above even though it looks different. T/F

Reasoning:



Did your answer change? Y/N

9. According to the Arthropod Tree, flies are more evolved than crabs. T/F

Reasoning:

Did your answer change? Y/N

10. According to the Arthropod Tree, crabs haven't changed at all since they showed up on Earth. T/F

Reasoning:

Did your answer change? Y/N