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Foundation

STANDARDS

- **CCSS:** RST.9-10.1, 2, 3, 4, 5, 7, 8, 9, 10; RST.11-12.1, 2, 3, 4, 7, 8, 9, 10; W.9-10.2, 4, 7, 8, 9; W.11-12.2, 4, 7, 8, 9; SL.9-10.4, 6; SL.11-12.4, 6
- **NGSS:** HS-LS4-1
- **OLP:** 4.B.1, 4.B.2, 5.C.22

ONLINE CONTENTS

- [Classification Quiz](#)
- [What Clade R U?](#) Interactive (at bottom of *How To Build A Cladogram* section) Use the interactive program to learn and explore more about the anatomy of a stony coral polyp.
- [What Are Corals? Video](#) Classification helps scientists tell species apart. This educational video explains modern biological classification categories from the most general (domain) to the most specific (species).

CLASSIFICATION

This lesson is part of the *Classification* unit, which explains how to organize the millions of organisms on Earth. Below is a summary of what is included in the entire unit.

UNIT CONTENTS

A. [Background Information](#)

- How Do We Classify Organisms?
- Linnaean Naming System
- Coral Classification
- Modern Classification
- Understanding Cladograms
- How to Build a Cladogram

B. Lessons

[Watch It! Naming Nature](#)

- A worksheet to accompany the [Naming Nature](#) video

[Classify This!](#)

- A worksheet to classify an organism and identify its characteristics

[Rules, Rules, Rules](#)

- A worksheet about scientific names

["Taxing" Corals](#)

- An activity to classify corals based on their characteristics

[In Light of New Evidence](#)

- A writing assignment on an organism that has been reclassified

[The Key to ID](#)

- An activity using a dichotomous key for sea stars

[And Then There Was One](#)

- An activity to create a dichotomous key for corals

[Cladograms 1](#)

- A lesson on creating and interpreting a cladogram

[Cladograms 2](#)

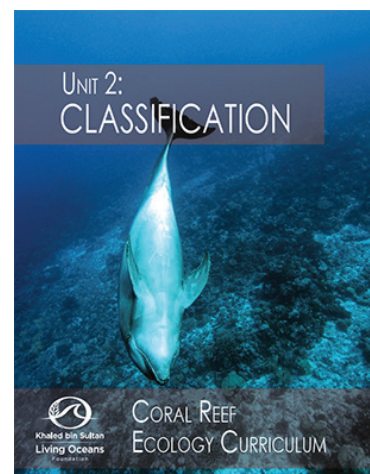
- A lesson on creating and interpreting a cladogram (with traits already included)

[Read It! Troubling Taxonomy](#)

- A worksheet to accompany the [Troubling Taxonomy](#) field blog

[Read It! Blue, You Say?](#)

- A worksheet to accompany the [Blue, You Say?](#) field blog



LESSON 3

IN LIGHT OF NEW EVIDENCE

ADDITIONAL BACKGROUND INFORMATION:

When you think of the Baltimore oriole, you usually think of the baseball team; however, in this case, we are talking about the bird. The Baltimore oriole, *Icterus galbula*, received its name due to the black and orange plumage of its feathers that resembled the colors of the crest of Lord Baltimore (1605-1675), the English noble credited with founding the state of Maryland. This bird was not always classified as a Baltimore oriole. In 1973, about 200 years later, ornithologists renamed the bird after discovering that it was crossbreeding with another species from the Great Plains called Bullock's oriole, *Icterus bullockii*. The American Ornithologist's Union (AOU) reclassified the Bullock's and Baltimore oriole into one species called the northern oriole. It wasn't until 1996 that the AOU again decided to separate the two species. Genetic research showed that even though the Baltimore orioles were migrating further west, they were rarely interbreeding with the Bullock's orioles. The Baltimore oriole's name remains today.

But how is it that scientists can change the taxonomic names of these birds? Like science, taxonomy evolves too. There are many reasons why organisms are reclassified, including relationships between organisms changing, animals evolving, better technology, misclassifications, and advancements in science. For instance, advancements in genetics has allowed for the reclassification of many organisms including the Baltimore oriole.

Now, it's your turn to investigate.

INSTRUCTIONS:

1. Research a species that has been reclassified.
2. Investigate scientific journals for scientific evidence. There are many free journals on Google Scholar®.
3. Before writing your essay brainstorm ideas.
4. Review essay format:
 - a. No more than 250 words
 - b. Written in MLA style or preferred style
 - c. Title
 - d. Citations list
5. Write your essay. Include these items:
 - a. Discuss original classification. Make sure to include the organism's original scientific name.
 - b. Explain why the organism was reclassified. Scientists do not rename organisms without evidence, so make sure to back up your claim with scientific evidence and include citations. Make sure to include the organism's new scientific name.
 - c. See grading rubric for more details.

GRADING RUBRIC:

CATEGORY	4	3	2	1	SCORE
Introduction	Exceptional introduction that grabs interest of reader and states topic.	Proficient introduction that is interesting and states topic.	Basic introduction that states topic but lacks interest.	Weak or no introduction of topic. Paper's purpose is unclear.	
Quality of Information/ Evidence	Paper is exceptionally researched, extremely detailed, and historically accurate.	Information relates to the main topic. Paper is well-researched in detail and from a variety of sources.	Information relates to the main topic, few details and/or examples are given. Shows a limited variety of sources.	Information has little or nothing to do with the topic.	
Organization	Exceptionally clear, logical, mature, and thorough development with excellent transitions between and within paragraphs.	Clear and logical order with good transitions between and within paragraphs.	Somewhat clear and logical development with basic transitions between and within paragraphs.	Lacks development of ideas with weak or no transitions between and within paragraphs.	
Conclusion	Excellent summary of topic with concluding ideas that impact reader. Introduces no new information.	Good summary of topic with clear concluding ideas. Introduces no new information.	Basic summary of topic with some final concluding ideas. Introduces no new information.	Lack of summary of topic.	
Style/Voice	Style and voice are not only appropriate to the given audience and purpose, but also show originality and creativity. Word choice is specific, purposeful, dynamic and varied. Sentences are clear, active (subject-verb-object), and to the point.	Style and voice appropriate to the given audience and purpose. Word choice is specific and purposeful, and somewhat varied throughout. Sentences are mostly clear, active, and to the point.	Style and voice somewhat appropriate to given audience and purpose. Word choice is often unspecific, generic, redundant, and clichéd. Sentences are somewhat unclear; excessive use of passive voice.	Word choice is excessively redundant, clichéd, and unspecific. Sentences are very unclear.	



GRADING RUBRIC CONTINUED:

CATEGORY	4	3	2	1	SCORE
Citation Format	Conforms to MLA rules for formatting and citation of sources are perfect.	Conforms to MLA rules for formatting and citation of sources with minor errors.	Frequent errors in MLA format.	Lack of MLA format/ numerous errors.	
Works Cited/ Bibliography	Entries entirely correct as to MLA format.	Entries mostly correct as to MLA format.	Frequent errors in MLA format.	Lack of MLA format/ numerous errors.	
TOTAL	Out of 28:				

