**Heredity & Classification**

Duration suggested 3-4 weeks and divided into 2 sections

1. **Heredity and Evolution**
2. **Classifying Organisms**

## Essential Questions/Big Ideas

* Scientific classification groups all plants and animals based on certain characteristics they have in common.
* Taxonomy is a system used to classify organisms
* There are 7 major taxa
* Living things are classified into 5 kingdoms
* Classification makes things easier to find, identify, and study
* A cladogram is used to trace an organism’s ancestors.

## Standards and Access Points

[SC.912. L.15.6](http://www.cpalms.org/Public/PreviewStandard/Preview/2000) Discuss distinguishing characteristics of the domains and kingdoms of living organisms.

* SC.912. L.15. In.2 Classify living organisms into their kingdoms.
* SC.912. L.15.Su.2 Match organisms to the animal, plant, and fungus kingdoms.
* SC.912. L.15. Pa.2 Sort everyday living things into plant and animal kingdoms.

[SC.912. L.16.1](http://www.cpalms.org/Public/PreviewStandard/Preview/2010) Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance.

* SC.912. L.16. In.1 Identify that genes are sets of instructions that determine which characteristics are passed from parent to offspring.
* SC.912. L.16.Su.1 Recognize characteristics (traits) that offspring inherit from parents.
* SC.912. L.16. Pa.1 Recognize similar characteristics (traits) between a child and parents, such as hair, eye, and skin color, or height.

Additional:

[SC.912. L.15.4](http://www.cpalms.org/Public/PreviewStandard/Preview/1998) Describe how and why organisms are hierarchically classified and based on evolutionary relationships.

* SC.912. L.15. In.2 Classify living organisms into their kingdoms.
* SC.912. L.15.Su.2 Match organisms to the animal, plant, and fungus kingdoms.
* SC.912. L.15. Pa.2 Sort everyday living things into plant and animal kingdoms.

[SC.912. L.15.5](http://www.cpalms.org/Public/PreviewStandard/Preview/1999) Explain the reasons for changes in how organisms are classified.

[SC.912. L.15.8](http://www.cpalms.org/Public/PreviewStandard/Preview/2002) Describe the scientific explanations of the origin of life on Earth.

* SC.912. L.15. In.3 Identify that there are scientific explanations of the origin of life on Earth.
* SC.912. L.15.Su.3 Recognize that there are scientific explanations of how life began.
* SC.912. L.15. Pa.1 Recognize that plants and animals change as they age.

[SC.912. L.16.2](http://www.cpalms.org/Public/PreviewStandard/Preview/2011) Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles.

* SC.912. L.16. In.2 Identify traits that plants and animals, including humans, inherit.
* SC.912. L.16.Su.1 Recognize characteristics (traits) that offspring inherit from parents.
* SC.912. L.16. Pa.1 Recognize similar characteristics (traits) between a child and parents, such as hair, eye, and skin color, or height.

[SC.912. L.16.9](http://www.cpalms.org/Public/PreviewStandard/Preview/2012) Explain how and why the genetic code is universal and is common to almost all organisms.

* SC.912. L.16. In.3 Recognize that a substance called DNA carries genetic information in all organisms, and changes (mutations) in DNA can be helpful or harmful to an organism.
* SC.912. L.16.Su.2 Recognize that all organisms have a substance called DNA with unique information.
* SC.912. L.16. Pa.2 Recognize similarities in characteristics of plants and animals of the same type (species).

### Unit Vocabulary Part 1 and 2

| Taxonomy | Binomial  | Nomenclature  | Genus  | Family | Order | Class |
| --- | --- | --- | --- | --- | --- | --- |
| Phylum  | Kingdom  | Domain | Phylogeny  | Clade  | Cladogram | Derived Character |

# 1. Heredity and Evolution

## Introduce Vocabulary

* 1.a Vocabulary Definitions Power Point [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1a._heredity_and_classification_vocabulary.pptx)
* 1b. Vocabulary Video Definitions Power Point [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1b._heredity_and_classification_vocab_websites.pptx)

## Vocabulary Worksheets

* 1a. Heredity and Classification Vocab Matching [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1a._heredity_and_classification_vocab_matching.docx)
* 1b. Heredity and Evolution Worksheets [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1b._heredity_classification_simple_wd_search.docx)

## Additional Vocabulary Resources using Music

* Classification Rap- [click here](https://www.youtube.com/watch?v=6jAGOibTMuU&t=9s)
* Phenotype Rap- [click here](https://www.youtube.com/watch?v=9G2lvdQiSr4)
* Taxonomy EMF- [click here](https://www.youtube.com/watch?v=wic5unxEhDA)
* Animal Classification Song- [click here](https://www.youtube.com/watch?v=dnF_UdPbJZ0)
* Taxonomy Mamma Mia- [click here](https://www.youtube.com/watch?v=CJrLYiIZtXc)

## Power point

* 1c. Heredity and Evolution [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1c._heredity_and_evolution.pptx)

## Worksheets

* 1c. Beasties Phylogeny worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1c._beasties_phylogeny_worksheet.doc)
* 1d. Phylogenic Tree Worksheets [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1d._phylogenetic_tree_worksheet.doc)
* 1e. Family tree worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1e._familytree.pdf)
* 1f. Traits Chart [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1f._traits_chart.docx)

## Videos and online resources

* What is heredity? [Click here](https://florida.pbslearningmedia.org/resource/lsps07.sci.life.gen.heredity/what-is-heredity/)
* How to Build a Cladogram Video- [click here](https://www.youtube.com/watch?v=9XSOwvj1ptI)
* Introduction to Phylogeny & Cladograms-[click here](https://www.youtube.com/watch?v=zSYzdms0SsU) **17:46 minutes**
* Kids Biology - [click here](https://kidsbiology.com/)
* Science News for Students - [click here](https://www.sciencenewsforstudents.org/)
* Lancaster - [click here](https://lancaster.unl.edu/4h/embryology)
* Dogonews - [click here](https://www.dogonews.com/2018/6/29/meet-kim-the-worlds-first-pet-spider-that-jumps-on-demand)
* Reference - [click here](https://www.reference.com/science/binomial-nomenclature-27001a9a72849b13?aq=binomial+nomenclature+system&qo=cdpArticles)
* Mocomi - [click here](http://mocomi.com/learn/science/biology/)
* Classifying Animals (BrainPOP Jr.) [click here](https://www.youtube.com/watch?v=dCm5CcQhU-c)
* Heredity and Classification Crossword Puzzle [click here](http://www.whenwecrosswords.com/crossword/heredity_and_classification/620189/crossword.jsp)
* Heredity and Classification Word Search- [click here](http://www.whenwewordsearch.com/word_search/heredity_and_classification/87922/word_search.jsp)
* Zebrafish phenotype/spot the difference- [click here](https://www.yourgenome.org/activities/spot-the-difference-zebrafish)
* Genetics activity- [click here](https://www.kidscreativechaos.com/2015/04/genetics-activities-for-elementary.html)
* Six creative ways to teach genetics [click here](https://www.theguardian.com/teacher-network/2015/sep/07/six-creative-ways-teach-genetics-genes)
* Animal Traits [click here](http://floridastudents.org/PreviewResource/StudentResource/174960)
* Plant Traits [click here](http://floridastudents.org/PreviewResource/StudentResource/174849)

# 2. Classifying Organisms

## PowerPoints

* 2. Order in diversity power point [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/2._order_in_diversity.pptx)
* 3. Five kingdoms power point [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3._the_5_kingdoms.pptx)

## Worksheets

* 2. Taxonomy Worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/2._taxonomy_worksheet_basic_and_good.doc)
* 3a. 5 kingdoms picture worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3a._kingdom_picture_match_worksheet.docx)
* 3b. 5 kingdoms worksheet Click here

## Videos

* The 5 kingdoms**-** [click here](https://www.youtube.com/watch?v=oID1h-zL-uw)
* Old & Odd: Archaea, Bacteria & Protists- [click here](https://www.youtube.com/watch?v=vAR47-g6tlA) **12:16 minutes**
* Taxonomy – Classification- [click here](https://www.youtube.com/watch?v=8Z3NNEtWNzs) **12:20 minutes**
* Biology - Phyla of Animal Kingdom - Overview - Diversity in Living Organisms[click here](https://www.youtube.com/watch?v=AdeLIaLe044) **3:03 minutes**
* Binomial Nomenclature**-**[click here](https://www.youtube.com/watch?v=CKHqO7x25VE) **6:07 minutes**
* Taxonomy – Classification**-** [click here](https://www.youtube.com/watch?v=8Z3NNEtWNzs) **12:20 minutes**
* Taxonomy, Phylogeny and Systematics- [click here](https://www.youtube.com/watch?v=NcMTz_4pSKU) **45:51 minutes**

## Articles/Online Activities

* Fungi Kingdom- [click here](https://kidsbiology.com/biology-basics/fungi-kingdom/)
* Kingdom Classification of Living Organisms- [click here](http://mocomi.com/kingdom-classification-of-living-organisms/)
* Phylum Classification- [click here](https://kidsbiology.com/biology-basics/phylum-classification/)
* Phylum Classification- [click here](https://kidsbiology.com/biology-basics/phylum-classification/)
* Classifying animals at [click here](http://floridastudents.org/PreviewResource/StudentResource/107978)