**1st Grade Launch Unit - Science**

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| **Unit Topic: Plants and Animals**  **Estimated Time: 2 weeks** | |
| **Standards:** | |
| **SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.**   1. Construct an argument supported by evidence for how animals can be grouped according to their features. 2. Construct an argument supported by evidence for how plants can be grouped according to their features. 3. Ask questions & make observations to identify the similarities & differences of offspring to their parents & to other members of the same species.   [Disciplinary Core Idea: Life Science Learning Progression: Appendix A](#_Appendix_A) | |
| [**Science and Engineering Practices**](https://cobbk12org-my.sharepoint.com/:w:/g/personal/susanne_smith_cobbk12_org/EdACNDYbX_VDrJ9XSmZ2GrYB6Bvhd6y_NZsne7lSCurKnQ?e=fZowW0) **&** [**Crosscutting Concepts**](https://cobbk12org-my.sharepoint.com/:w:/g/personal/susanne_smith_cobbk12_org/EZ6252kcp7tEgkZy0BvSUPUBj7yrg_0oCHaWJ4NsyRKjAA?e=V8Y1Ja) | |
| **Teacher Background Knowledge:**  [**Plants**](https://cobbk12org-my.sharepoint.com/:w:/g/personal/susanne_smith_cobbk12_org/EYxdDQN2nstJqyyGb8xDR5sBDnTpmU-oX4OB4q3995PaRw?e=PJRYhz) **&** [**Animals**](https://cobbk12org-my.sharepoint.com/:w:/g/personal/susanne_smith_cobbk12_org/EWot7bpTYkFNhpnje_3QiwUBwQQjJKn92puvG715rNuGfQ?e=Cgo6mH) | |
| ***Misconceptions:*** | ***Proper Conceptions:*** |
| * Bushes are baby trees * Trees are only considered plants when they are small * Trees, grass, vegetables, weeds are not plants * Insects are not animals * Humans are not animals * All animals are 4 footed or furry * All animals are large * All animals live on land | * A shrub or bush is distinguished from a tree by its multiple stems and lower height, usually less than 6 m tall. * A tree is a large plant. The term generally applies to plants at least 6 m (20 ft) high at maturity and having secondary branches supported on a main stem or stems. * Trees and grasses are plants. * A vegetable is the edible part of a plant. * A weed in a general sense is a plant. More specifically, the term is often used to describe plants that grow and reproduce aggressively. * Insects are part of the animal kingdom. * Humans are part of the animal kingdom. * Some animals are four footed and furry; others may have no legs, scales, etc. There is a wide variety of animals in the animal kingdom. * Animals can be very small such as ants, ladybugs, etc. * While some animals live on land, others can live in oceans, rivers or lakes. |
| **Big Ideas/Enduring Understandings:**   * Plants can be grouped by appearance, features, size, etc. * Animals can be grouped together using features that can be observed (appearance, size, movement, etc.) * Animals are similar and different in many ways. There are similarities and differences between parents and offspring. * A child is similar and different from other children in the same family. | **Essential Questions:**   * How can I construct an argument to show how plants and animals can be grouped? * How can I observe how parents and their offspring are similar and different? |
| **Vocabulary:**   |  |  |  | | --- | --- | --- | | Construct | Communicate | Obtain | | Evaluate | Identify | Compare | | Organism | Evidence | Argument | | Grouped | Features | Plants | | Observations | Similarities | Differences | | Offspring | Parents | Members | | Species |  |  | | |
| **Literature Connections:**  *Do You Know Which Ones Will Grow? (Shea)*  *Living or Nonliving? (PebbleGo)*  *What’s Alive? (***Zoehfeld)**  ***A Tree is a Plant (Bulla)***  ***Jack’s Garden (Cole)***  ***Plants Feed Me (Rockwell)***  ***Discovery Ed. Video: Living Things*** | **STEM Careers:**   |  |  |  | | --- | --- | --- | | Botanist | Farmer | Soil scientist | | Gardener | Landscaper | Zoologist | | Horticultural scientist | | Groomer | | Golf course superintendent | | Veterinarian | | Marine or wildlife biologist | |  | |
| **Materials & Safety Considerations:**  Lessons are designed with simplicity in mind. Use safety and caution when going outside for scavenger hunt and observation. | |

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| **The First 10 Days** | | |
| **Day 1** | **Opening** | **Topic 1**: Construct an argument supported by evidence for how **animals** can be grouped according to their features.  **Phenomenon:** One way to sort animals is by body covering (fur, scales, skin, feathers)  **ENGAGE:**  Introduce the phenomenon. Hold up small stuffed animals or toys showing different animals and ask students to identify their body covering. |
| **Work Session** | Use the probe [Is it an Animal?](https://cobbk12org-my.sharepoint.com/:b:/g/personal/susanne_smith_cobbk12_org/EWUs6OMUCRdNkcy824SDMfIB6lAIGQLaGDyEcH4nSiuHAQ?e=DnuJRP) to evaluate student prior knowledge. |
| **Closing** | Use the teaching notes attached to the probe to lead students in discussion regarding their answers. |
| **Day 2** | **Opening** | Choose one of the literature connections listed at the top of this lesson to share with students as an opening to today’s lesson. |
| **Work Session** | With a parents permission, go outside on a scavenger hunt. How many different plants and animals can you find?  [Recording sheet](https://cobbk12org-my.sharepoint.com/:b:/g/personal/susanne_smith_cobbk12_org/EWfKlmKlu5lGkb4nPE_w7Q8BtpqR-zh7p-aIZIygWe9bgA?e=ynDjMZ) |
| **Closing** | Close this lesson using an ABC Summary- Give students a letter of the alphabet and ask them to make a statement about something they found outside that begins with that letter. |
| **Day 3** | **Opening** | **EXPLORE:**  On a synchronous call, present a set of animal cards. Ask the students to discuss and help you sort the animals. They should be able to explain the “rule” to their sort. Can the cards be sorted more than one way?  If available, you can also use animal figures. [Animal sort cards](https://cobbk12org-my.sharepoint.com/:p:/g/personal/susanne_smith_cobbk12_org/Ecw65CX5jdhKr5n__6h7vKYBHSvpLgvG6OwtLgFn1DBoYw?e=DdRx6T) |
| **Work Session** | **EXPLAIN:**  [Animal Classification Game](http://www.sheppardsoftware.com/content/animals/kidscorner/classification/kc_class_again.htm)  PebbleGo! Resources (Cobb Digital Library) |
| **Closing** | Share 2 cards from the original sort- ask students to identify ONE reason they could be grouped together and ONE reason that they could be in different groups. |
| **Day 4** | **Opening** | **EXPAND:**  Look up a map of [Zoo Atlanta](https://zooatlanta.org/visit/zoo-map/). Share the map with students and discuss how the animals are grouped. Come up with a list for each area of the zoo that describes the animals in it. |
| **Work Session** | If you could add another animal exhibit, what would it be? Where would it go? How do you decide? Have students draw a new exhibit for each part of the zoo. |
| **Closing** | Students will share their new animal ideas! Encourage students to respond to one another’s ideas using the starters, “I like…” “I noticed…” and “I wonder…” |
| **Day 5** | **Opening** | **Topic 2**: Construct an argument supported by evidence for how **plants** can be grouped according to their features.  **Phenomenon:** Plants have similar parts, but those parts look different on different types of plants. (a tree has a trunk, herbs have fragile stems)  **ENGAGE:**  Administer this probe [Is it a Plant?](https://www.dropbox.com/sh/e830by6303tqdss/AABh0A8BrGz6MEdXzNxlIlXFa?dl=0&preview=IsItaPlantV2-ch12.pdf) to determine student prior knowledge on this topic. |
| **Work Session** | **EXPLORE:**  Provide students with the plant picture sorting cards. Ask students to decide which group their picture belongs to. Students should be able to defend their reason for the placement.  If possible, have a variety of plant type available for students to observe. Encourage students to go outside and look at the different types of plants around their homes.  [Plant picture sort cards](https://cobbk12org-my.sharepoint.com/:b:/g/personal/susanne_smith_cobbk12_org/ETIph1fiDP5JvN4tNyaTUWEBtKjlazG2tYZhUHx6_YO51Q?e=IOMxkH) |
| **Closing** | Ask students to share the kinds of rules they used to sort their cards. This will reveal their depth of knowledge regarding plant features. |
| **Day 6** | **Opening** | **EXPLAIN:**  Share the following video with students and review the ways they sorted plants the day before.  [Plant classification video](https://www.youtube.com/watch?v=_xFyFtvPRSQ)  PebbleGo! Resources (Cobb Digital Library) |
| **Work Session** | Students will watch the following video: [*Plants*](https://app.discoveryeducation.com/learn/videos/30489159-f3c9-4dfb-b5f9-792ad7af5c17/) (Discovery Ed. full video)  Based on observations made outside, have students group the various plants found outside from their scavenger hunt on Day 2. What are their claims and evidence for their groupings? |
| **Closing** | Students will share any plants in their yards that they can’t fit into a group. They will share why they are having a hard time. |
| **Day 7** | **Opening** | **EXPAND:**  Introduce the challenge to students. Give them a few ideas of groupings of plants (vegetables, flowers, bushes, trees, etc.) Share an example with them that you’ve made. |
| **Work Session** | Plan a garden for your (school, park, yard). What would your dream garden look like? What plants would grow there? How would you group the plants? Draw a picture of your plan. It should include at least 5 different plants, but can have many more. |
| **Closing** | Students will share their designs with the class. Offer feedback. |
| **Day 8** | **Opening** | **Topic 3**: Ask questions & make observations to identify the similarities & differences of offspring to their parents & to other members of the same species.  **Phenomenon:** Animal babies have similar features to the animal parent.  **ENGAGE:**  The baby animal song: <https://www.youtube.com/watch?v=cJg4YFtvOp8> |
| **Work Session** | Students will match parent and baby animal cards. [Animal with Baby cards](https://cobbk12org-my.sharepoint.com/:w:/g/personal/susanne_smith_cobbk12_org/ERrs-MmgavhMkbFiJLO9TBwBFGetdDOFyHgcNbmVAxXf8Q?e=5rds14) |
| **Closing** | Ask students to explain how they decided they belonged together. |
| **Day 9** | **Opening** | **EXPLORE:**  Create a Venn diagram to compare the adult and baby animal on their cards from the engage activity. Demonstrate how to make claims and give supporting evidence. |
| **Work Session** | Students will view the Mystery Science Mini-Lesson “Why do baby animals look so cute?”  When it’s over, they will use their baby animal cards to identify some of the features that the video talks about. They will also visit this site: <https://annex.exploratorium.edu/mind/judgment/cuteify/v1/> to see if they can adjust the features of different things to make them seem more like baby animals. |
| **Closing** | Ask students the question, why is it important that humans and adult find babies cute? |
| **Day 10** | **Opening** | Share this video with students to teach them more details about animal parents and babies (\*Note, video mentions nursing):  <https://www.youtube.com/watch?v=F5C-rRvaQVQ>  Have students share one face from the video that surprised them. |
| **Work Session** | **EXPLAIN:**  Students will work through the PowerPoint, writing down their answers about which animal the babies belong to.  [Animals and Babies PowerPoint](https://cobbk12org-my.sharepoint.com/:p:/g/personal/susanne_smith_cobbk12_org/EezWWhQSIURHu9gnP42KnXIBK-rtrzfN8GJc--j6IBVZig?e=T5dZq0) |
| **Closing** | Check student work and encourage students to share something they have learned using the ABC Summary- Give students a letter of the alphabet and ask them to make a statement about something they learned that begins with that letter. |

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| **HMH Resources** | |
| **HMH Dimensions** | **HMH GA Science Resources (online)** |
| **Differentiation:**   * Vary reading level according to student needs * Adjust the number of cards in sort if needed * Provide word banks and pictures when necessary * Partner students according to student needs | |
| **Evaluate (Closing):** *What type of assessment will you give to evaluate students? (Note: the assessment may be your “elaborate” activity)*  Or you may revisit the probes from the beginning of the unit. | |

### Appendix A

**Disciplinary Core Idea: Life Science Learning Progression**

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| **K & 1st** | **2nd** | **5th** | **7th** | **High School** |
| **SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.**  a. Construct an explanation based on observations to recognize the differences between organisms and nonliving objects.  b. Develop a model to represent how a set of organisms and nonliving objects are sorted into groups based on their attributes.  **SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.**  a. Construct an argument supported by evidence for how animals can be grouped according to their features.  b. Construct an argument supported by evidence for how plants can be grouped according to their features.  c. Ask questions and make observations to identify the similarities and differences of offspring to their parents and to other members of the same species.  **First Grade:**  **S1L1. Obtain, evaluate, and communicate information about the basic needs of plants and animals.**  a. Develop models to identify the parts of a plant—root, stem, leaf, and flower.  b. Ask questions to compare and contrast the basic needs of plants (air, water, light, and nutrients) and animals (air, water, food, and shelter).  c. Design a solution to ensure that a plant or animal has all of its needs met. | **S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.**  a. Ask questions to determine the sequence of the life cycle of common animals in your area: a mammal such as a cat, dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.  b. Plan and carry out an investigation of the life cycle of a plant by growing a plant from a seed and by recording changes over a period of time.  c. Construct an explanation of an animal’s role in dispersing seeds or in the pollination of plants.  d. Develop models to illustrate the unique and diverse life cycles of organisms other than humans. | **S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.**  a. Develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.  b. Develop a model that illustrates how plants are sorted into groups (seed producers, non-seed producers) using data from multiple sources. | **S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.**  a. Develop and defend a model that categorizes organisms based on common characteristics.  b. Evaluate historical models of how organisms were classified based on physical characteristics and how that led to the six kingdom system (currently archaea, bacteria, protists, fungi, plants, and animals).  *(Clarification statement: This includes common examples and characteristics such as, but not limited to, prokaryotic, eukaryotic, unicellular, multicellular, asexual reproduction, sexual reproduction, autotroph, heterotroph, and unique cell structures. Modern classification will be addressed in high school.)* | **SB4. Obtain, evaluate, and communicate information to illustrate the organization of interacting systems within single-celled and multi-celled organisms.**  a. Construct an argument supported by scientific information to explain patterns in structures and function among clades of organisms, including the origin of eukaryotes by endosymbiosis. Clades should include:   * archaea * bacteria * eukaryotes * fungi * plants * animals   *(Clarification statement: This is reflective of 21st century classification schemes and nested hierarchy of clades and is intended to develop a foundation for comparing major groups of organisms. The term 'protists' is useful in describing those eukaryotes that are not within the animal, fungal or plant clades but the term does not describe a well-defined clade or a natural taxonomic group.)*  b. Analyze and interpret data to develop models (i.e., cladograms and phylogenetic trees) based on patterns of common ancestry and the theory of evolution to determine relationships among major groups of organisms.  c. Construct an argument using valid and reliable sources to support the claim that evidence from comparative morphology (analogous vs. homologous structures), embryology, biochemistry (protein sequence) and genetics support the theory that all living organisms are related by way of common descent.  d. Develop and use mathematical models to support explanations of how undirected genetic changes in natural selection and genetic drift have led to changes in populations of organisms.  *(Clarification statement: Element is intended to focus on basic statistical and graphic analysis. Hardy Weinberg would be an optional application to address this element.)*  e. Develop a model to explain the role natural selection plays in causing biological resistance (e.g., pesticides, antibiotic resistance, and influenza vaccines). |