**Preliminary Learning Sequence Template** H

**Performance Expectation**: 3-LS4-3; Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

**Disciplinary Core Idea**: LS4.C; For any particular environment some kinds of organisms survive well, some survive less well, and some cannot survive at all. LS4.D: Biodiversity and Humans: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

**Learning Sequence Concept**: Habitat features can and cannot meet the needs of a particular organism.

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|  | **Engage****Day 1** | **Explore/Explain****Day 2** | **Explore/Explain****Day 3** | **Elaborate****Day 4** | **Elaborate****Day 5** | **Evaluate****Day 6** |
| DCI Concept | Needs of organisms for survivalOrganisms need food to growHabitats provide for survival needs of organisms | Change in habitat affects the organisms living there. How well does an organism survive in a particular environment?\*Pellet biology, formation and regurgitation | * Review pellet biology, pellet formation and regurgitation
* Summarize class data
 | Change in habitat affects the organisms living there.  | Change in habitat affects the organisms living there. How well does an organism survive in a particular environment? | \*Change in habitat affects the organisms living there. \*How well does an organism survive in a particular environment?\*Change in habitat affects the organisms living there.  |
| SEP | SEP 1: asking questionsSEP 8: obtaining information (from listening to partners) | SEP8: obtaining information SEP4: analyzing and interpreting dataSEP7: engaging in argument from evidence | SEP8: obtaining information SEP4: analyzing and interpreting dataSEP7: engaging in argument from evidence | SEP8: obtaining information SEP7: engaging in argument from evidence | SEP8: obtaining information SEP7: engaging in argument from evidence | SEP8: obtaining information SEP7: engaging in argument from evidence |
| CCC |  | \*Scientist looks for patterns to determine what barn owls mostly eat.\*Cause & effect relationship between owl feeding behavior/diet & pellet contents. | Scientist looks for patterns to determine what barn owls mostly eat.\*Cause & effect relationship between owl feeding behavior/diet & pellet contents. |  |  |  |
| Phenomenon |  | What do owls need to survive? | If owls need to hunt voles, where should owls live? | Where do barn owls live? | How and what features of the environment do/do not meet the needs of organisms | Would the barn owls survive if their habitat changes drastically? |
| Active Science Experience | * Look at slides and listen to owl calls
* Observe video of owl hunting
 | * Owl hunting and regurgitation video
* Owl pellet dissection
* Sort and identify animal parts
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| Speaking and Listening | “What do you know about owls” and discuss with partner and later in small groups | Discuss ideas about owl eating behavior in small groups. | * Make classroom list of features of vole habitat
 | \*Explicitly discuss the cause-effect relationship between availability of voles and presence of owls in certain areas.\*Concept cartoon – discuss and evaluate cartoon bubbles\*Four corners discussionWhere do barn owls live and why do they live there? | * Discuss what features of the habitat meet the needs of the barn owl and which do not
 | * Science talk
* When the environment changes how does this affect the barn owls?
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| Notebook | Other ideas and questions about owls after video and sound.What do you notice, what do you wonder? | \*Write a claim about barn owl dietRecord findingsI claim owls eat \_\_\_\_\_\_\_\_\_ and my evidence is \_\_\_\_\_\_\_\_\_\_\_\_.I claim owls eat \_\_\_\_\_\_\_\_ and I know this because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |  | Chart notes about habitat cards.What features of each habitat meet the needs of the barn owl and which features do not?I claim that a barn owl could live in \_\_\_\_\_\_\_ because \_\_\_\_\_\_\_Barn owls \_\_\_\_\_\_\_ (could/could not live) in a \_\_\_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_. | * Write independently in notebooks.
* When the environment changes how does this affect the barn owls?
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| Reading |  | Read bone chart | Read about voles and owls | Read Concept cartoons | Read about particular habitats on the habitat cards. |  |
| Mathematics |  | Make bar chart with owl pellet cards |  |  |  |  |

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| **FURTHERING THE LEARNING SEQUENCE: Day 7-21** |  |
| Introduce other raptors – students explore/study other raptors, vultures and/or birds and compare to owls; |  |
| * Explore owl adaptations for hunting (such as the silent flight of owls);

\*Compare owls’ to other animals’ hunting strategies, bring in cooperative hunting strategies as an advantage for living in social groups | 3-LS4-2 3 LS 4.B,C variation in characteristics among individuals of the same species may provide advantages3-LS2-1 Construct an argument that some animals form groups that can help members survive .LS2.D – Social interactions and group behavior – being part of a group helps animals obtain food …… groups may serve different functions and vary dramatically in size |
| * Build and explore food webs that include owls and voles
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| * Explore local environment to observe man-made and natural changes
* Explore potential consequences of man – made and natural habitat changes for owls (e.g. farmland conversion, roads, road building, malls)
* Explore and evaluate solutions to man-made or natural habitat changes
 | 3 LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the type s of plants and animals that live there may changeLS4.D: Biodiversity and Humans: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4) LS2.C: Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4) |