

## THIRD GRADE: SURVIVAL

### Standards Bundle

*Standards are listed within the bundle. Bundles are created with potential instructional use in mind, based upon potential for related phenomena that can be used throughout a unit.*

3-LS2-1 Construct an argument that some animals form groups that help members survive. (SEP: 7; DCI: LS2.D; CCC: Cause/Effect )

3-LS4-2 Use evidence and reasoning to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. (SEP: 6; DCI: LS4.B; CCC: Cause/Effect) **[Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]**

3-LS4-3 Construct an argument with evidence how some organisms thrive, some struggle to survive, and some cannot survive in a particular habitat. (SEP: 7; DCI: LS4.C; CCC: Cause/Effect) **[Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]**

### Content Overview

*This section provides a generic overview of the content or disciplinary core ideas as an entry point to the standards.*

Plants and animals have characteristics that help them survive. Within the same species characteristics of some animals and plants help to make them better able to survive than other plants and animals. Sometimes animals live as part of a group to help them survive.

### Phenomena

*Phenomena can be used at varying levels of instruction. One could be used to anchor an entire unit, while another might be more supplemental for anchoring just a unit. Please remember that phenomena should allow students to engage in the SEP and use the CCC/DCI to understand and explain the phenomenon.*

- Wolves travel as a pack.
- Birds fly south for the winter.
- A decline of white tail deer in South Dakota.
- The male prairie chicken bulges his neck during mating season.
- Bees work together to create honey.
- Evergreen trees have needles with thick outer coating (cuticle).
- Trees on the plains have leaves and cacti in the desert have needles.

## Storyline

*This section aims to decode not only the DCI connections, but also the SEP and CCC in a detailed account of how they possibly fit together in a progression for student learning, including both rationale and context for the bundle.*

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p><b>Engaging in Argument from Evidence</b></p> <ul style="list-style-type: none"> <li>Construct an argument with evidence, data, and/or a model.</li> </ul> <p><b>Constructing Explanations and Designing Solutions</b></p> <ul style="list-style-type: none"> <li>Use evidence (e.g., observations, patterns) to construct an explanation.</li> </ul>	<p><b>LS2.D: Social Interactions and Group Behavior</b></p> <ul style="list-style-type: none"> <li>Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (Note: Moved from K–2).</li> </ul> <p><b>LS4.B: Natural Selection</b></p> <ul style="list-style-type: none"> <li>Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.</li> </ul> <p><b>LS4.C: Adaptation</b></p> <ul style="list-style-type: none"> <li>For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</li> </ul>	<p><b>Cause and Effect</b></p> <ul style="list-style-type: none"> <li>Cause and effect relationships are routinely identified and used to explain change.</li> </ul>

Students make observations of the characteristics and behaviors of animals that help them survive and produce offspring. This will help students to create an understanding of how these can be both helpful and harmful to plants and animals. Students should have a chance to collect data through observations and use their observations as evidence to support claims about those characteristics being harmful and helpful for a plant or animal.

Students should be given opportunities to observe or gather information about animals that live in groups (geese, wolves, ants, bees or other bugs on the playground). They can receive this information through video footage, or collecting observational data first-hand about how animal groups working together in a group might assist the groups survival. Just like when students work together in the classroom, students might use their observations to determine that animals in a group work together and reduce the amount of work an individual animal might otherwise have to do. Students might collect from their observations that animals can protect themselves better when living in a group. They can use this information to support from evidence that animals living in a group can be beneficial.

Students should observe variations or differences in characteristics among individuals of the same species and consider how those characteristics help them survive and reproduce. Each animal or plant in a species might have their own unique characteristic to help them survive. For example, an animal that has

quicker speed will be able to outrun a predator or chase down their prey. Animals that can survive outside grow thicker coats in the winter. Students should make observations that organisms are different in size, color and ability to help them survive in their environment. Once a student understands these, they can begin to identify characteristics that might help an organism survive and reproduce.

Students should be able to construct arguments on how different characteristics of plants and animals help them to survive. They should also see that animals with a higher survival rate also have a higher reproduction rate. Animals that don't have these characteristics have a lower survival rate and lower reproduction rate.

### Formative Assessment

*Formative assessment is crucial because all learners benefit from timely and focused feedback from others. It promotes self-reflection, self-explanation, and social learning. It can also make learning more relevant. Each of the questions below might be used throughout the formative assessment process. Specific prompts may focus on individual practices, core ideas, or crosscutting concepts, but, together, the components need to support inferences about students' three-dimensional science learning as described in a given bundle, standard or lesson-level performance expectation.*

### Resources to inform your formative assessment.

<http://stemteachingtools.org/brief/30>

<http://stemteachingtools.org/brief/41>

<http://stemteachingtools.org/pd/sessionb>

### SEP Engaging in Argument from Evidence

- Use evidence to explain how bees work together to produce honey.
- Using the data collected describe how different animals live in groups to survive.

### SEP Constructing Explanations and Designing Solutions

- What can be done to help prevent the declining numbers of white tail deer?

### CCC Cause and Effect

- Why does an animal have to grow more hair during winter months than summer months?
- What happens if many of the predators in an area prey on the same thing?
- What is the benefit of a plant having thorns?

### Performance Outcomes

*These are statements of how students use knowledge and are similar to the standards in how they blend DCI, SEP, and CCC, but at a smaller grain-size. These are potential outcomes for instruction as it plays out in lessons and activities in the classroom. It is important to also think of these as smaller outcomes that build toward the larger goal of mastering the standards.*

- **Engage in arguments from evidence** that some animals benefit from forming **groups** for *survival in their habitats*.

- **Use evidence to provide an explanation** about how animals in the same species can find *different needs for survival, mating, and reproducing*.
- **Design a solution** to help animals that are introduced to an area adapt to the *different resources provided in the new habitat*.
- **Use evidence to explain** why some plants and animals of the same species *don't always survive in the same environment*.
- **Construct an argument from evidence** as to *what causes* trees with leaves to not survive in a desert.