



Next Generation Science Standards:

Lesson: [Fish Identification](#)

Activity: [Can I see Some ID Please? How to Identify Fish](#)

Prior Knowledge Should Include:

- Particular organism can only survive in particular environments.
- Differences in characteristics between individuals of the same species provide advantages in surviving and reproducing.

Performance Expectations:

- MS-LS4.4 Biological Evolution: Unity and Diversity. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
- MS-LS4.6 Biological Evolution: Unity and Diversity. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

Disciplinary Core Ideas:

- **LS4.B Natural Selection:** Natural selection leads to the predominance of certain traits in a population and the suppression of others. The traits that positively affect survival are more likely to be reproduced, and thus are more common in the population.
- **LS4.C Adaptation:** Adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. Traits that support successful survival and reproduction in the new environment become more common and those that do not, become less common. Thus, the distribution of traits in a population change.

Practices:

- **Constructing Explanations and Designing Solutions (MS-LS4.4)** – Progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles and theories.
- **Using Mathematics and Computational Thinking (MS-LS4.6)** – Progresses to identifying patterns in large data sets and using mathematical concepts to support explanations and arguments.

Crosscutting Concepts:

- **Cause and Effect** – Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanism can then be rested across given context and used to predict and explain events in new contexts.

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