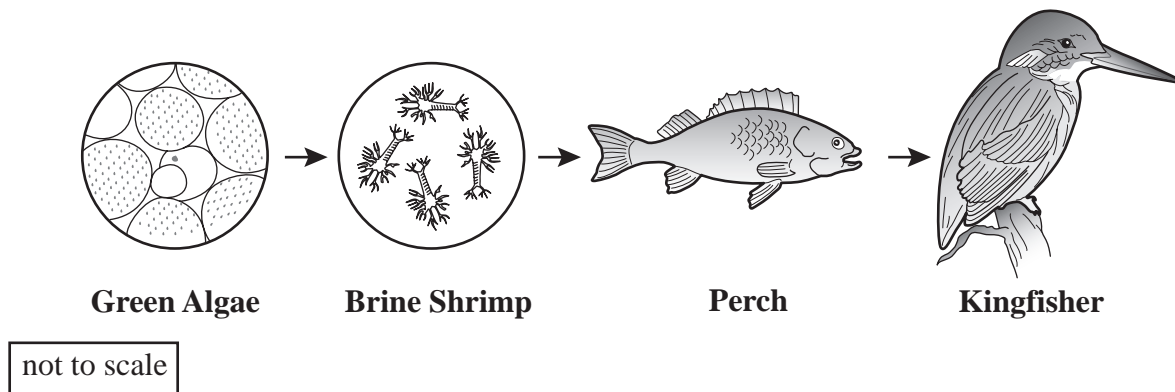


BENCHMARK SC.4.L.17.3

Reporting Category	Life Science
Standard	Big Idea 17 Interdependence
Benchmark	SC.4.L.17.3 Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers. (Also assesses SC.3.L.17.2 and SC.4.L.17.2.)
Also Assesses	<p>SC.3.L.17.2 Recognize that plants use energy from the Sun, air, and water to make their own food.</p> <p>SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.</p>
Benchmark Clarifications	<p>Students will describe or explain how energy is transferred from the Sun through a food chain.</p> <p>Students will explain that plants make their own food using carbon dioxide, water, and energy from the Sun.</p> <p>Students will explain that animals obtain energy from the plants and/or animals they eat.</p>
Content Limits	<p>Items assessing the flow of energy from the Sun through a food chain are limited to the direction of energy flow. Items will not address or assess the amounts of energy flowing through the food chain or the efficiency of the energy transfers.</p> <p>Items will not address or assess cellular respiration or any other cellular process.</p> <p>Items will not address or assess decomposers.</p> <p>Items will not address or assess food webs, trophic levels, or energy pyramids.</p> <p>Items will not assess more than five components (links) in a food chain.</p>
Stimulus Attributes	<p>Scenarios addressing food chains may, but are not required to, include the Sun.</p> <p>Scenarios referring to consumers may use the terms <i>carnivore</i>, <i>herbivore</i>, and <i>omnivore</i>.</p>
Response Attributes	None specified
Prior Knowledge	Items may require the student to apply science knowledge described in the NGSSS from lower grades. This benchmark requires prerequisite knowledge from SC.1.L.17.1.

Sample Item 25**SC.4.L.17.3**

The Sun provides the energy to be used by the living things in the lagoon food chain shown below.



Which of the following describes the transfer of energy from a producer to a consumer?

- A. from Kingfisher to Perch
- B. from Perch to Brine Shrimp
- C. from Green Algae to the Sun
- ★ D. from Green Algae to Brine Shrimp