

Science Toolkit: Grade 4 Objective 3.D.1.b

Student Handout: Science: Grade 4 Objective 3.D.1.b

Standard 3.0 Life Science

Topic D. Evolution

Indicator 1. Explain that individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing.

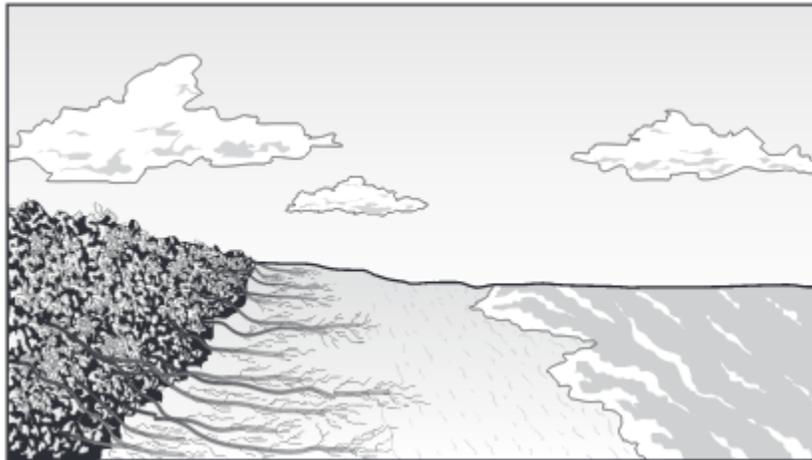
Objective b. Explain that the characteristics of an organism affect its ability to survive and reproduce.

Selected Response (SR) Item

Question

Use the passage below to answer the following:

Invasion of the Vines: A Fine Solution Creates a Vine Problem



Along the beaches of North Carolina and South Carolina, a harmless-looking vine is stirring up a surprising amount of trouble. At first glance, beach vitex does not appear to be a problematic plant. It has grayish green leaves all year round and lush purple flowers in the spring. It smells spicy. This climbing plant used to be welcome wherever it grew.

In the mid-1980s, scientists brought beach vitex, *Vitex rotundifolia*, from Korea to the United States. They hoped the plant would keep beach sand from blowing away. Beach vitex, which grows wild on ocean beaches in Korea, seemed like the perfect plant for the Carolina beaches. People thought its sprawling roots would stabilize the sand, and it didn't mind salty water, or even being dried out completely. Beach vitex was for sale in greenhouses throughout the Carolinas, so that people from the area could buy it and plant it themselves.

But the alarming trouble with beach vitex is that it grows too quickly, at least in the Carolinas. It tends to crowd out the slower-growing native plants. A beach vitex plant just sprouting at the beginning of summer is a sprawling plant by summer's end. The vines send out long runners, which are stems of the plant that snake out along the ground. These runners root into the sand, forming a dense mat of branches that extends outward in all directions.

Scientists are alarmed because they would like the natural plants that have grown on the Carolina coasts to continue to be there for years to come. The way plants and animals work together is very complicated. When native plants grow well, the birds, insects, and other animals that have learned to get along with these plants can continue to build their homes, raise young, and prosper.¹

The people who brought the beach vitex to the Carolinas thought they were solving a problem. But they did not know that beach vitex would grow so well in its new environment. Even today, people are not entirely certain that the plant keeps the sand in place, as it does in Korea. What they are sure of is that beach vitex is killing other plants.

¹prosper – do well, grow

Which feature of beach vitex most likely enables it to survive and grow near the ocean?

- A. spicy smell
- B. purple flowers
- C. ability to grow in salty soil
- D. ability to grow leaves all year

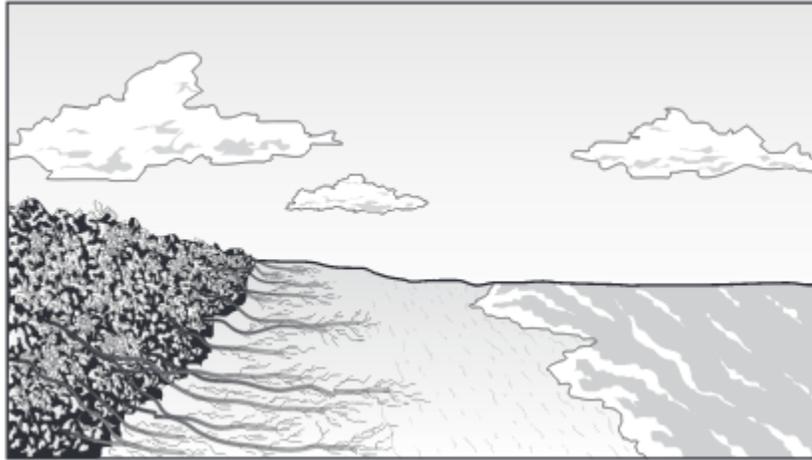
Correct Answer

C. ability to grow in salty soil

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