

Plant Survival Tools

Connect plant parts to survival in different environments.

4.13.A “explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment; and”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each plant structure, circle the environmental challenge it helps with, and write the same number beside the structure and the words that explain how it helps the plant survive.

Built for Each Place

- ① Plants live in places with different challenges. In a hot, dry desert, a shrub must find water and keep water from leaving its leaves. Its deep roots grow down through dry soil toward water farther below. A waxy coating on the leaves slows water loss. These structures help the shrub survive when rain is rare and the sun is strong.
- ② Along a salty ocean shore, mangrove trees face soft mud and water with little oxygen. Some mangroves grow special roots that stick up from the mud. Tiny openings in these roots take in oxygen from the air, helping the tree get oxygen it needs. Mangroves also keep much salt out at their roots or send extra salt into old leaves. These actions protect their living cells.
- ③ In a shady forest, a young plant may have large, thin leaves. A large leaf catches more sunlight, which the plant uses to make food. Some climbing plants grow curling tendrils. The tendrils wrap around nearby branches, lifting the plant toward brighter light. Each structure works in its own environment. A useful structure helps a plant get needed resources or avoid harm.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What challenge do the desert shrub's deep roots help solve? Explain how the roots help.

2 How does the waxy coating on the desert shrub's leaves help it survive?

3 Why do some mangrove roots stick up from the mud?

4 How do the forest plant's large leaves and the desert shrub's waxy leaves help with different needs?

3 YOUR TURN _____ Your own words

Choose an environment not described in the passage, such as a cold mountain or windy grassland. Invent a plant with two structures, and explain how each structure helps the plant survive there.

PART 1 • READ AND MARK

Underline each plant structure, circle the environmental challenge it helps with, and write the same number beside the structure and the words that explain how it helps the plant survive. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What challenge do the desert shrub's deep roots help solve? Explain how the roots help.	They help the shrub find water when the upper soil is dry. The roots grow down toward water farther below.
2	How does the waxy coating on the desert shrub's leaves help it survive?	The waxy coating slows water loss from the leaves, helping the shrub keep water when rain is rare.
3	Why do some mangrove roots stick up from the mud?	The muddy water has little oxygen. Tiny openings in the raised roots take in oxygen from the air.
4	How do the forest plant's large leaves and the desert shrub's waxy leaves help with different needs?	Large leaves catch more sunlight in the shady forest so the plant can make food. Waxy leaves slow water loss in the hot, dry desert.

PART 3 • YOUR TURN (SAMPLE ANSWER)

My cold-mountain plant has low, hairy leaves and a thick underground stem. The hairs trap air near the leaves and reduce harm from cold wind. The stem stores food, helping the plant start growing during the short summer.

Accept answers that correctly connect a named plant structure to an environmental challenge and explain the survival benefit. For the open response, accept scientifically reasonable invented structures and functions.