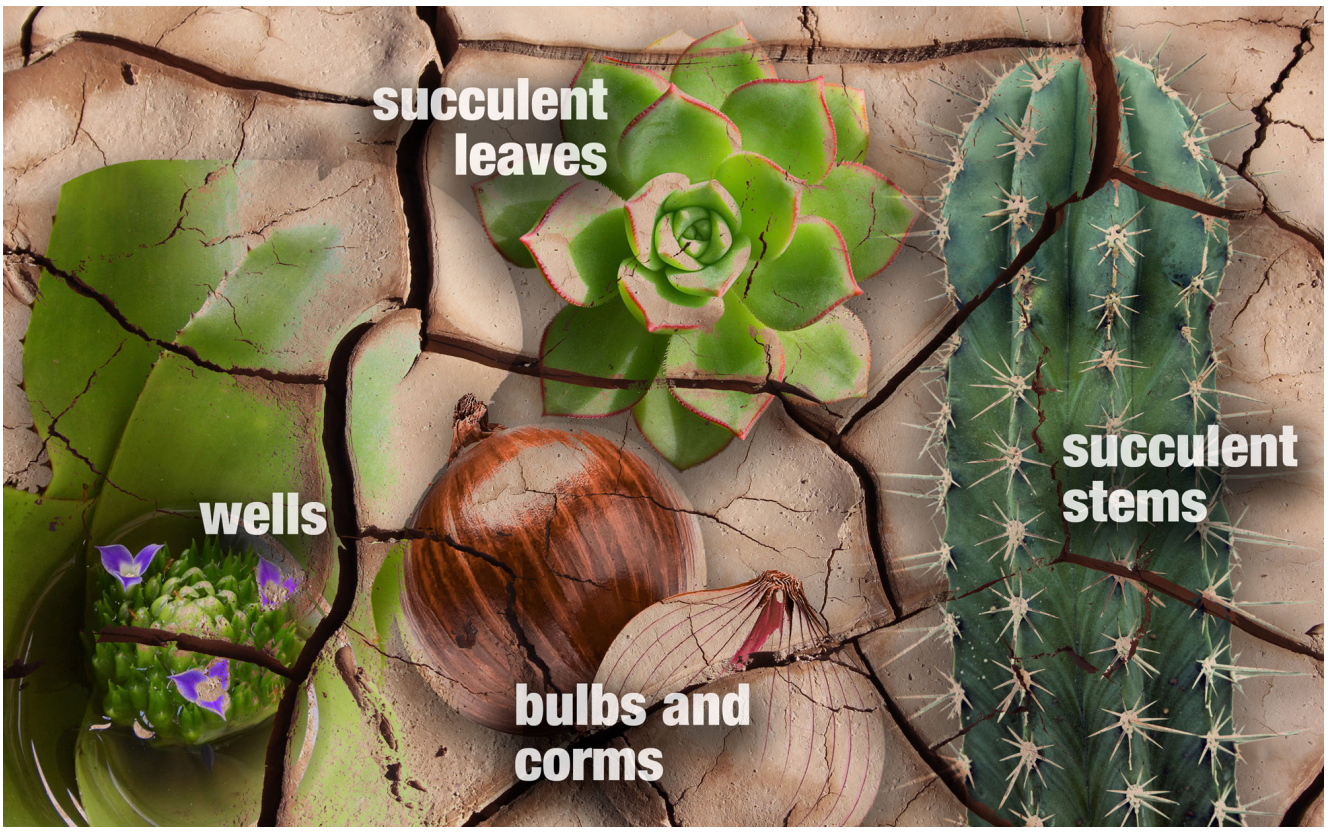
Water

Plant adaptations for water storage

Climates around the world vary greatly and plants have had to adapt to survive in different environments. Some plants that live in extreme conditions have adapted to store water inside them to survive long periods of drought or cold. Let's look at some plant adaptations for water storage.



Succulent leaves

Many plants in arid climates have succulent (fleshy) leaves full of enlarged water storage cells. These cells fill with water when it is available and gradually release it to the plant during dry periods. By doing this, plants can survive for many months without rainfall.

Examples, from left to right: Crassula; Echeveria; Sedum.

Succulent stems

Desert plants like cacti have swollen, fleshy stems with enlarged water storage cells that can hold

onto enough water to supply the plant's needs through many months of drought. The outside of a cactus stem is thick and tough with a waxy coating that prevents the water inside from evaporating.

Examples, left to right: Cacti; Euphorbia.

Wells

Bromeliads are a group of plants that grow naturally in tropical and subtropical America. These plants have a well at their centre, formed by a ring of long, overlapping water-repellent leaves. Rainwater runs down the leaves into the well, which holds onto it until it is needed by the plant.

Bulbs and corms

Bulbs and corms are underground storage organs which hold onto water and nutrients during a plant's dormant season when there is no growth above the ground. Bulbs and corms are different in their structure but both are formed from a short stem surrounded by fleshy leaf bases. Some

bulbs and corms become dormant and shrink back into the ground in winter to protect themselves against extreme cold. Other bulbs and corms are dormant in summer, retreating back to the ground to withstand drought.

Examples of bulbs, left to right: Onion; Narcissi.


Examples of corms, left to right: Croci; Gladioli corms; Gladioli flowers.



Turn the next page to test your understanding.

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Test your understanding by drawing lines from the plant names on the left to match them with the plant adaptations on the right.

Bromeliad	Bulbs
Cactus	Corms
Echeveria	Succulent Leaves
Gladioli	Succulent Stems
Narcissi	Wells

ANSWERS:
Bromeliad > Wells; Cactus > Succulent Stems; Echeveria > Succulent Leaves; Gladioli > Corms; Narcissi > Bulbs.