

Teacher/Adult's Side (1)

Liverpool Biennial

KS2 Science - Resilient Plants

The learner will read about how certain plants are adapted to endure harsh conditions and how their resilience can inspire strength within our own communities.

Estimated time = 40 mins

Curriculum Extract:

Pupils should be taught to:

Plants

- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
- Investigate the way in which water is transported within plants

Living things and their habitats

- Recognise that living things can be grouped in a variety of ways
- Recognise that environments can change and that this can sometimes pose dangers to living things

Key terms:

Totem - A person or thing regarded as being 'symbolic' that represents a particular quality or concept.

Endurance - The ability to put up with strain, suffering, or hardship. Having the strength to continue or last, especially despite tiredness, stress or other difficult conditions.

Resilience - The ability to recover quickly from difficulties. The ability to bounce back when things go wrong.

Transatlantic Slave Trade - The Transatlantic Slave Trade was the selling of African people as slaves by Europeans that happened in and around the Atlantic Ocean. It lasted from the 1500s to the 1800s. Most of the enslaved people were taken from West Africa and forcefully shipped to America on huge boats, where conditions were terrible, in exchange for trade items such as cotton and sugar. They were forced to work on plantations in the Americas and were treated as though they were not human.

Children/Learner's Side (1)

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Artist: Jorgge Menna Baretto and Rashid Johnson

LB2021 Projects:

Jorgge Menna Baretto is a land artist, looking at how growing and eating can shape the landscape. Jorgge Menna Baretto has collaborated with a local artist and Liverpool John Moores University students on the design of a large mural titled *'Mauvaise Alphabet'*. This mural sits outside of the Bluecoat Gallery and has images of drawings that the students found on walks around the city. The large and bright paintings bring attention to an often overlooked but important part of nature: weeds.

Rashid Johnson has made a two headed sculpture in the style of a totem made from bronze and filled with plants called *'Stacked Heads'*. Using organic materials in his work, the plants which grow from within the sculpture - yucca and cacti - are selected for their endurance to harsh winds and salt water. The resilience of the plants and the location of the sculpture highlight present-day racial discrimination and reminds us of the atrocities of the Transatlantic Slave Trade. Canning Dock (where the sculpture stands) played an active role in this dark part of Liverpool's history.



Rashid Johnson, *Stacked Heads* (2020)



Jorgge Menna Baretto, *Mauvaise Alphabet* (2020)

Instructions:

Jorgge Menna Baretto and Rashid Johnson have both looked at the qualities of plants that have resilient features, grow in harsh conditions, are difficult to get rid of and can shape a landscape.


The artists both suggest that we can look to these plants for how they shape our environment and how they can inspire resilience in us and our communities, by them growing without want or in conditions that seem to turn them away.

1. Read the information about how different desert plants adapt to grow and stay protected. Illustrate the text with drawings to show your understanding.
2. Use the knowledge you have gained from reading about enduring plants to fill in the missing words in the diagram about how cacti survive in the desert.
3. Discuss the following questions with a grownup or a friend:
 - How can these resilient plants inspire us to be strong within our own lives?
 - How have you shown resilience in the past?




Jorgge Menna
Baretto,
*Mauvaise
Alphabet* (2020)


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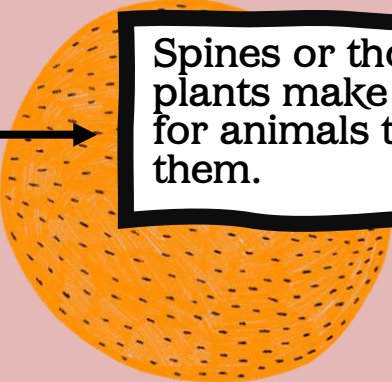
Plants called succulents store water in their stems and leaves.



Growing slowly requires the plant to make less food, therefore they don't lose as much water.



Long roots go deep into the ground and spread out to absorb more water.



Spines or thorns on plants make it difficult for animals to eat them.

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Plants without leaves photosynthesise in their stems.

A waxy coating on leaves and stems help to reduce water loss.

Some plants have no leaves or only small leaves that grow after it rains. The lack of leaves helps with water loss.

Flowers that open during the night attract pollinators that are more active when it is cool.

A Coping Cactus

How does a cactus survive and grow in harsh desert condition?

Using what you have learnt through reading the text above, fill in the missing words within the diagram using the words below.

Word Bank

water	rainfall	fibrous
animals	leaves	photosynthesis
evaporation	roots	wide

Stem

The stem creates energy for the plant through _____.

Its thick stems store _____.

Roots

The roots of a cactus spread far and _____ to reach water.

They are close to the ground and absorb water straight after _____.



Spines

A cactus' spines prevent _____ from eating the plant.

Gacti have spines instead of _____ to reduce water loss through _____.

Roots

Gacti have long _____ roots.