



# Science

## Plants



# HOW DO PLANTS GROW IN HOT, DRY OR COLD PLACES?





# Meet Quizby!

Can you spot me in the  
**Lesson Presentation?**

The questions that appear will help you to think about the key learning throughout the lesson.



# Aim

- To explain how plants are suited to their habitats.

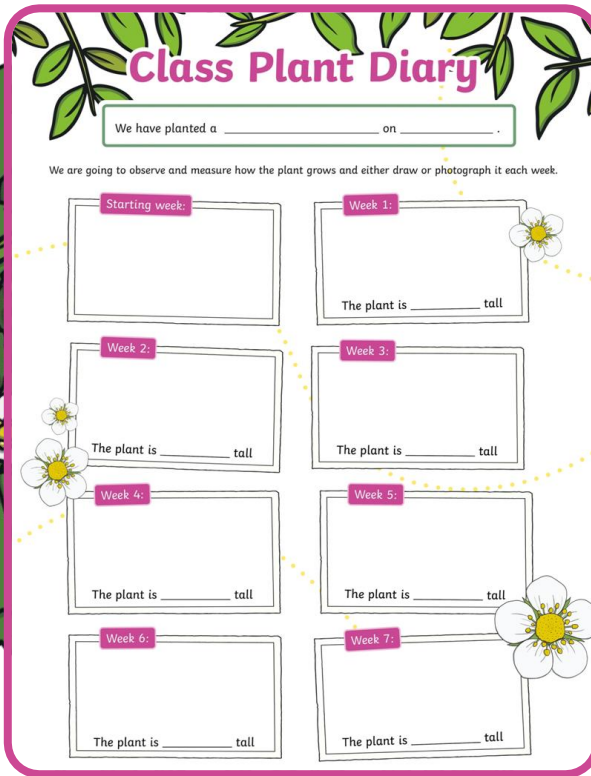
# Success Criteria

- I can say how plants have different features that make them suited to where they live.
- I can identify plants that live in hot, dry, cold or wet places.
- I can explain how I know which type of habitat each plant grows in.



# Remember It

Let's look at our class plant and see how it is growing. We can measure its growth and draw or photograph it for our **Class Plant Diary** from Lesson 1!

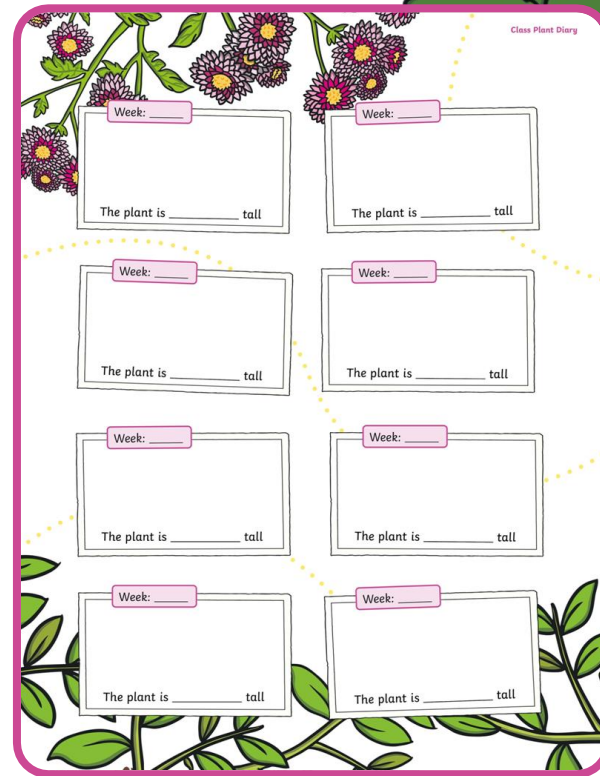


**Class Plant Diary**

We have planted a \_\_\_\_\_ on \_\_\_\_\_.

We are going to observe and measure how the plant grows and either draw or photograph it each week.

<b>Starting week:</b> [ ] The plant is _____ tall	<b>Week 1:</b> [ ] The plant is _____ tall
<b>Week 2:</b> [ ] The plant is _____ tall	<b>Week 3:</b> [ ] The plant is _____ tall
<b>Week 4:</b> [ ] The plant is _____ tall	<b>Week 5:</b> [ ] The plant is _____ tall
<b>Week 6:</b> [ ] The plant is _____ tall	<b>Week 7:</b> [ ] The plant is _____ tall



**Class Plant Diary**

<b>Week:</b> [ ] [ ] The plant is _____ tall	<b>Week:</b> [ ] [ ] The plant is _____ tall
<b>Week:</b> [ ] [ ] The plant is _____ tall	<b>Week:</b> [ ] [ ] The plant is _____ tall
<b>Week:</b> [ ] [ ] The plant is _____ tall	<b>Week:</b> [ ] [ ] The plant is _____ tall
<b>Week:</b> [ ] [ ] The plant is _____ tall	<b>Week:</b> [ ] [ ] The plant is _____ tall





# Remember It

Sort the plants into the correct place in the table below.



Healthy Plants

Plants That  
Need Water

Plants That  
Need Sunlight



# Where Do Plants Grow?

Look at these **habitats**.

Tell your partner whether you think plants can grow in each of these places or not.



Can you explain **why** you think plants can or cannot grow here?

X



# Growing, Growing, Grown

Let's learn more about **where plants grow** in the **Growing, Growing, Grown eBook**.



Let's read  
up to the  
end of page  
30 together.



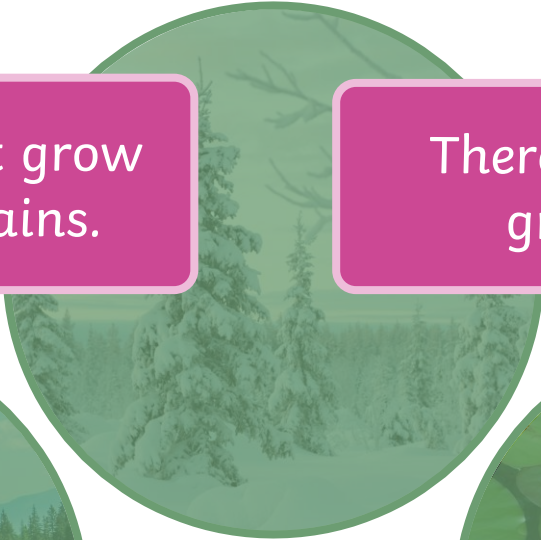


# Plants Grow Almost Everywhere


Plants can grow almost anywhere on Earth.



There are plants that grow on very tall mountains.



There are plants that grow in water.



There are plants that grow in hot, dry deserts.



There are plants that grow in very cold places like the Arctic.

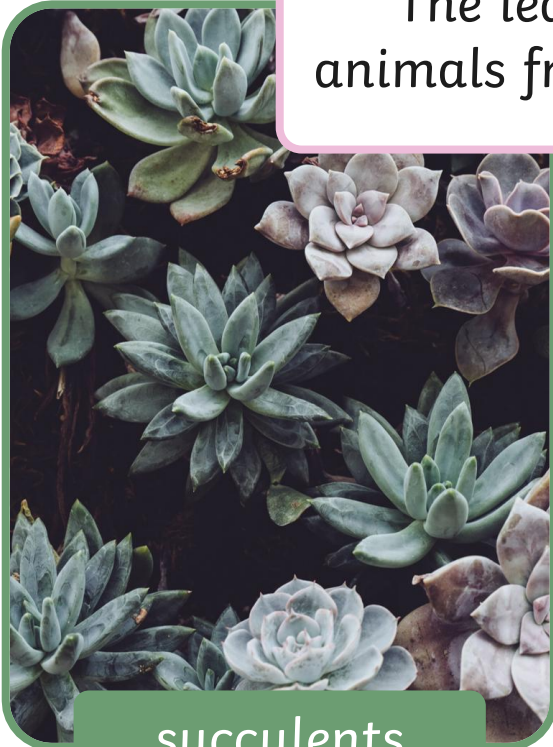




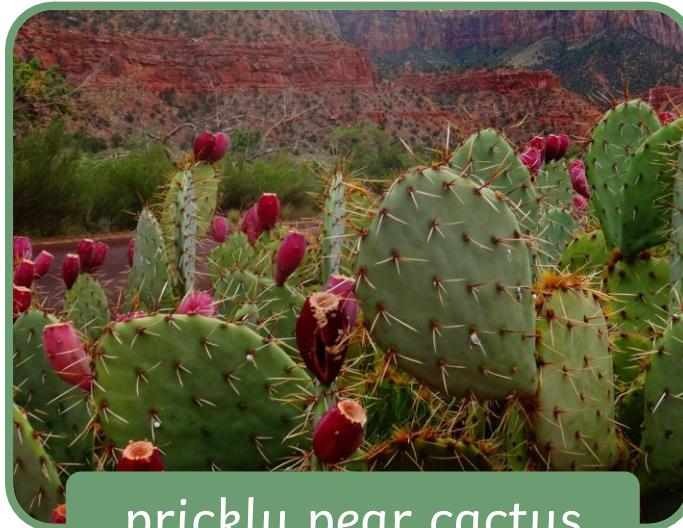
# Plants Grow Almost Everywhere

They also have roots that are close to the surface. This means they can soak up rainwater as soon as it falls.

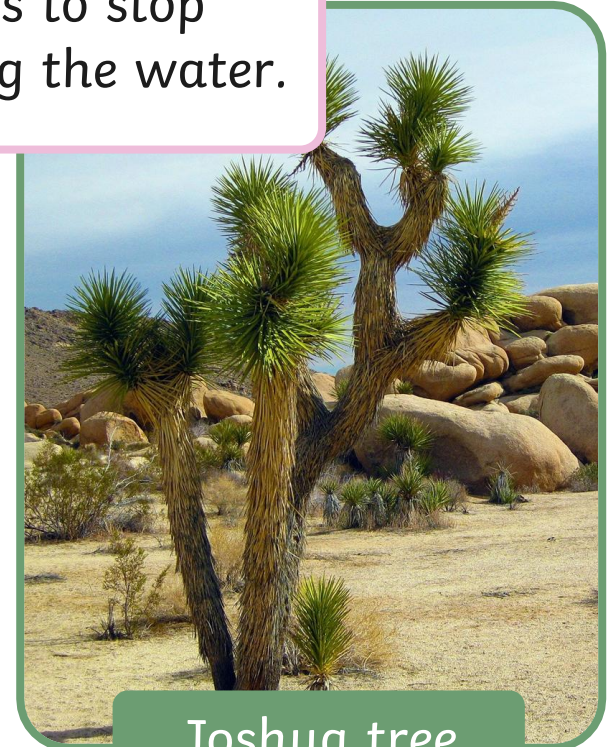
The leaves often have prickles or spikes to stop animals from eating the leaves and taking the water.



succulents



prickly pear cactus



Joshua tree





# Plants Grow Almost Everywhere

These plants are all small and grow close to the ground. This helps them to stay out of the cold wind. Usually.

They often grow close together, which helps them to keep warm. They sometimes also have hairy stems to help them to keep warmth in.

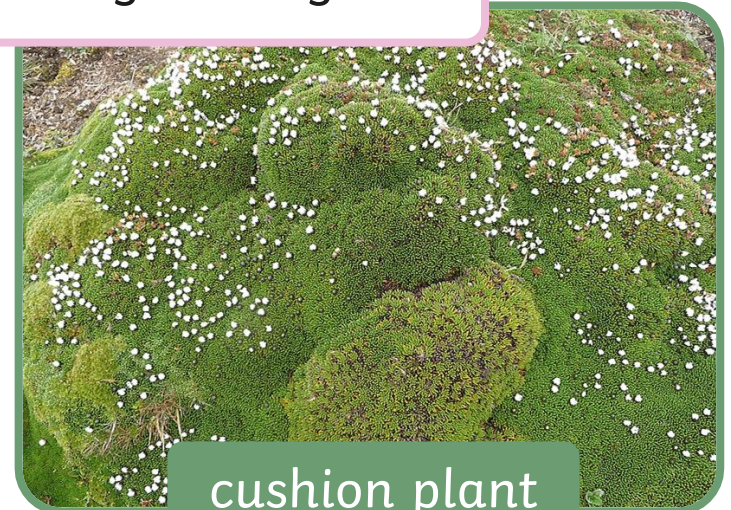
Plants that grow in cold places move to follow the sun with their flowers, so that they get enough sunlight.



cotton grass



prairie crocus



cushion plant



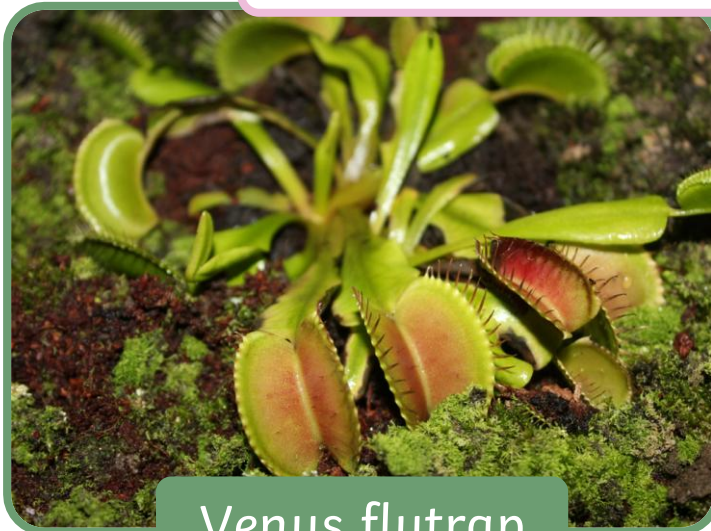
# Plants Grow Almost Everywhere

Plants that grow in very wet, warm places (such as rainforests) have large, waxy leaves with pointy tips that the rain can easily run off.

The soil in a rainforest can be quite poor, so plants sometimes have shallow roots to help them to get **nutrients** from the top of the soil.

Can you explain to your partner how they are similar?

Some plants even catch insects and small mammals to 'eat'!  
This is how they get their **nutrients**.



Venus flytrap



banana tree



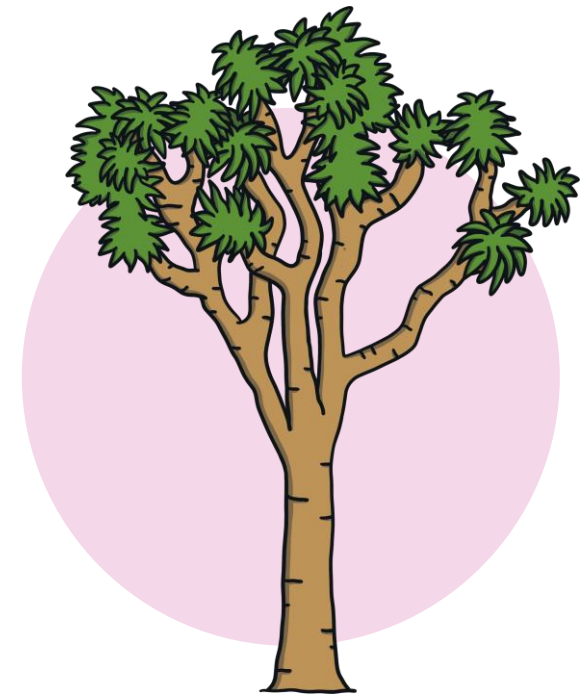
heliconia flower



# Where Does It Live?

Use what you know about how plants are suited to their habitats to decide where you think these plants might live.

Explain why to your partner.



# Where Do Plants Live?

Complete the **Where Do Plants Live? Activity Sheet**.

### Where Do Plants Live?

To explain how plants are suited to their habitats.

Can you explain how the plants in each of the groups are similar? You can use the word bank to help.

**Hot, Dry Habitat**

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**Warm, Wet Habitat**

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**Cold Habitat**

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**Word Bank**

leave stem roots flowers prickles spikes

**Hot, Dry Habitat**


**Warm, Wet Habitat**

**Cold Habitat**


### Where Do Plants Live?

To explain how plants are suited to their habitats.


Cut out each of the plants, then sort them into the correct type of habitat on the next page.



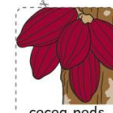
prickly pear cactus




banana plant



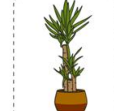
cotton grass




cocoa pods



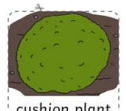
Venus flytrap




yucca plant




Arctic poppy



cushion plant



Joshua tree



heliconia flower





# What Have You Learnt?

Let's find out how much we have learnt about plants during all of our lessons.

What do all plants need to stay healthy?

the right amount of water, the right temperature and light

lots of water and light

soil, lots of water and heat

What is inside a seed?

a seed coat

a baby plant and a store of food

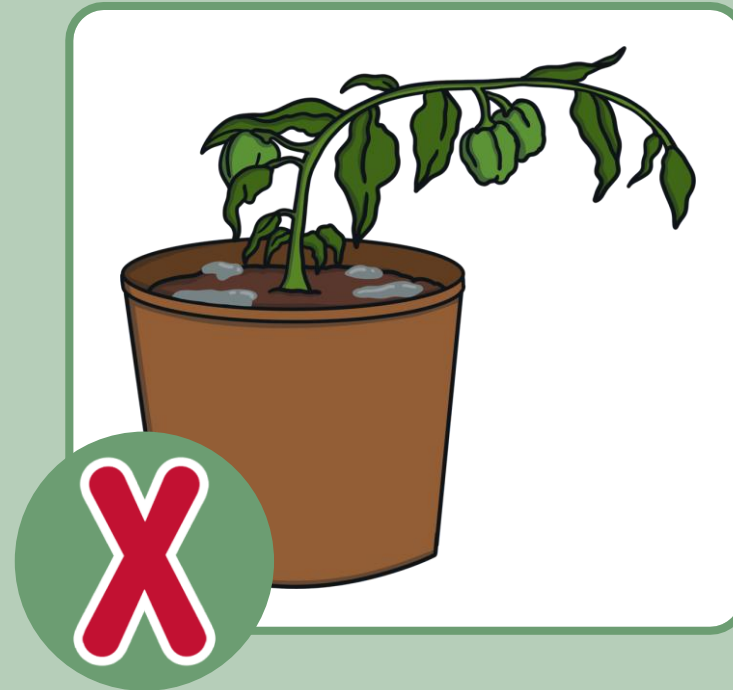
roots



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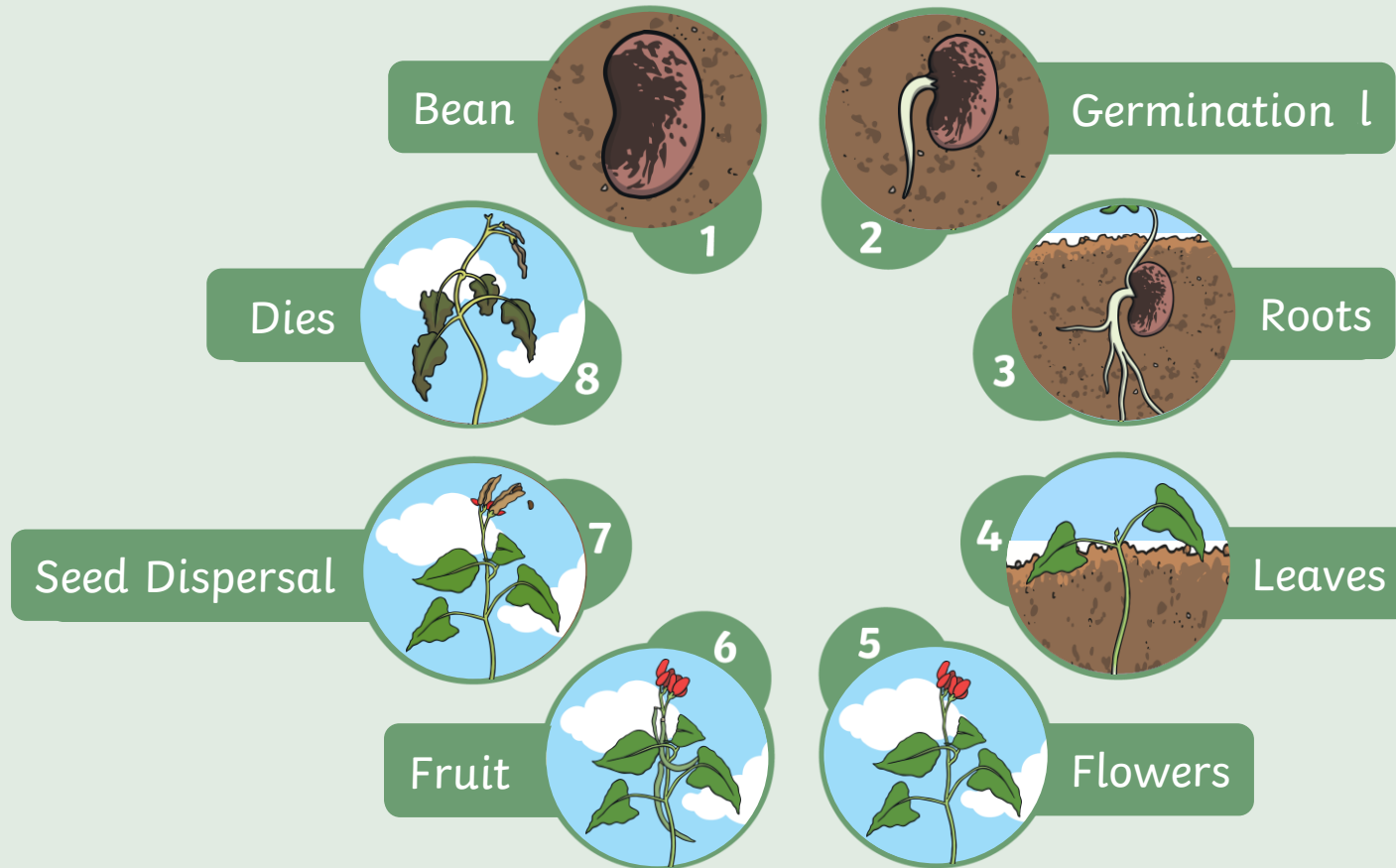
Which of these plants is healthy?





# What Have You Learnt?

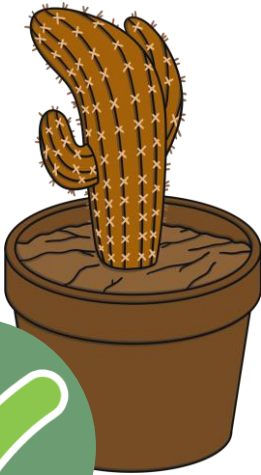
Can you put the life cycle of the bean plant into the correct order?



# What Have You Learnt?

Let's find out how much we have learnt about plants during all of our lessons.

Which of these plants needs water?





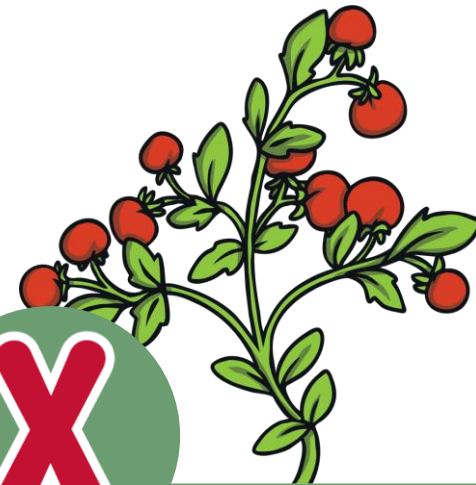
# What Have You Learnt?

Let's find out how much we have learnt about plants during all of our lessons.

Which of these plants needs light?



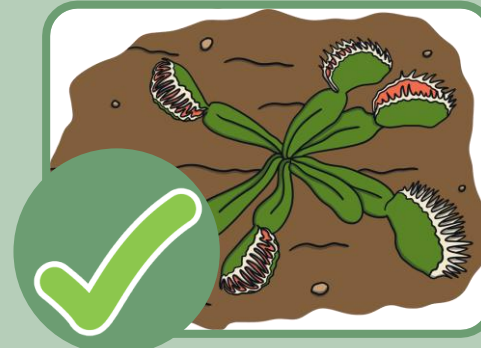
X



X

# What Have You Learnt?

Which of these plants do you think would live in the rainforest and why?



What do plants that live in hot, dry places usually have in common?

They have thick, fleshy leaves with spikes.

They have big waxy leaves that have a pointy tip.

They grow close to the ground.



# Growing, Growing, Grown

Let's read to the end of the **Growing, Growing, Grown eBook** and think about everything we have learnt.



The **glossary** tells us the meanings of some key words.



# Aim



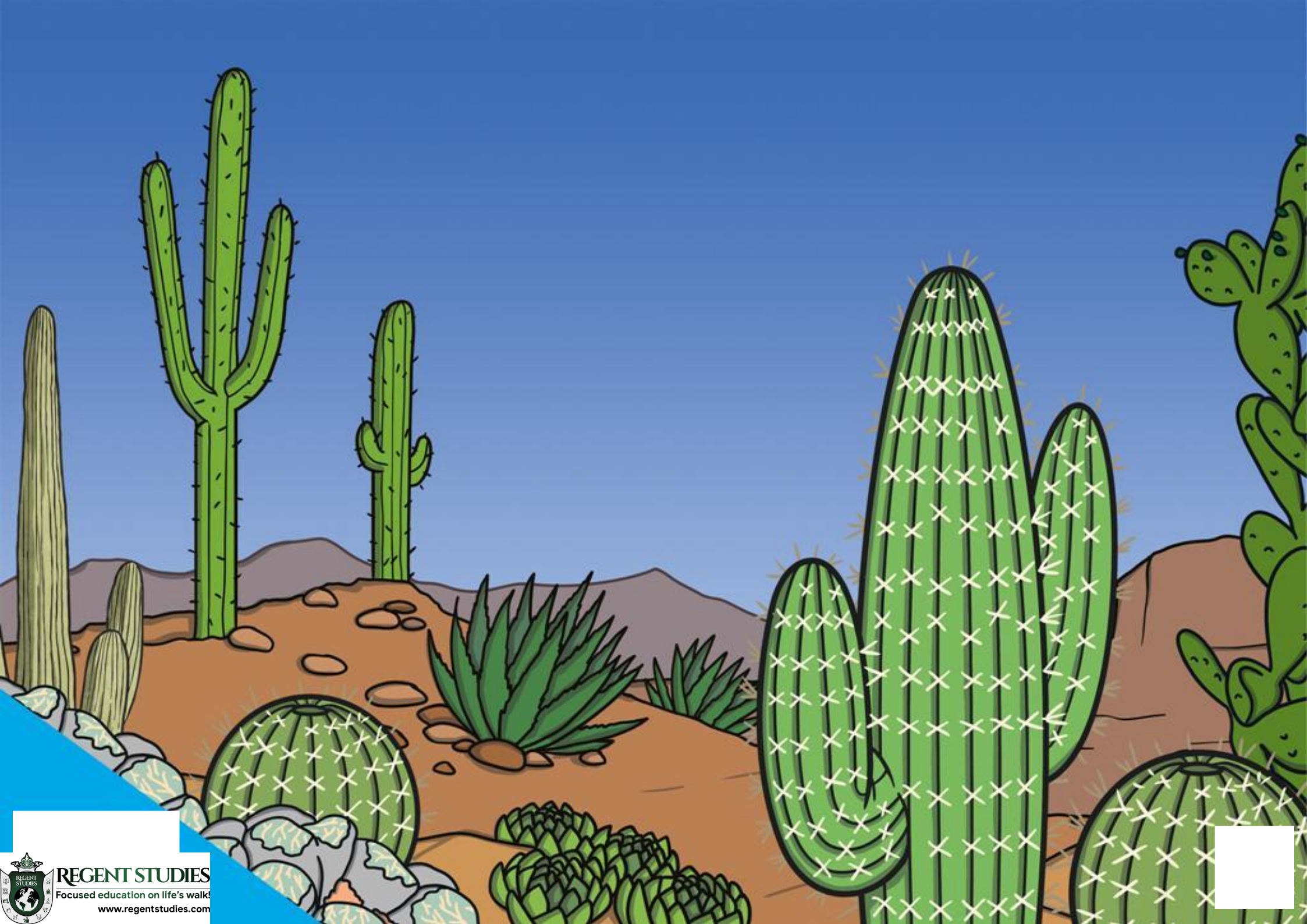
- To explain how plants are suited to their habitats.

# Success Criteria

- I can say how plants have different features that make them suited to where they live
- I can identify plants that live in hot, dry, cold or wet places.
- I can explain how I know which type of habitat each plant grows in.







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# Plants: How Do Plants Grow in Hot, Dry or Cold Places?





<b>Aim</b> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Using their observations and ideas to suggest answers to questions. To explain how plants are suited to their habitats.		<b>Lesson Duration</b> All timings are approximate. <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px auto;"> <span style="font-size: 20px;">70</span>  <span style="font-size: 10px;">mins</span> </div>
<b>Success Criteria</b> I can say how plants have different features that make them suited to where they live. I can identify plants that live in hot, dry, cold or wet places. I can explain how I know which type of habitat each plant grows in.	<b>Key Vocabulary</b> Water, temperature, sunlight, adapted, species, leaves, roots, stem, spikes, waxy, fleshy, equator, rainforest, desert, mountains, Arctic, oxygen, shallow.	
<b>Standard School Equipment</b> None	<b>Preparation</b> <b>Lesson Pack</b> Differentiated <a href="#">Where Do Plants Live? Activity Sheet</a> - per child or small group	

**Prior Learning:** In the previous lesson, the children learnt how to identify whether a plant is healthy or unhealthy and to use their observations to suggest what the plant might need.

## Learning Sequence

	<b>Remember It:</b> As a class, look at the class plant and record its growth on the <a href="#">Class Plant Diary</a> . Use the <a href="#">Lesson Presentation</a> to recap the children's knowledge of healthy and unhealthy plants from the previous lesson.	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">5 mins</div>
	<b>Where Do Plants Grow?</b> Using the <a href="#">Lesson Presentation</a> , ask the children to look at the different habitats. Ask: do you think plants can grow here? Allow the children some time to discuss the question. Ask them to explain their answers.  Can the children suggest ideas about where plants can grow based on what they have learnt during the unit?	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">5 mins</div>
	<b>Growing, Growing, Grown:</b> Read pages 23-30 of the <a href="#">eBook</a> together to learn more about where plants grow across the world and how different plants are suited to their habitats (environments).	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">10 mins</div>
	<b>Plants Grow Almost Everywhere!</b> Discuss with the children what you have read about how plants can grow in almost every habitat on Earth. In pairs, children can look at the examples on the <a href="#">Lesson Presentation</a> of plants that grow in different environments and discuss how they are similar. Use the <a href="#">Lesson Presentation</a> to explain how these similarities are ways in which the plants have adapted to their habitats (environments).  Can the children make comparisons between plants that grow in similar habitats?	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">10 mins</div>
	<b>Where Does it Live?</b> Using what they have just learnt about plant adaptations, ask the children to discuss which habitat they think each plant on the <a href="#">Lesson Presentation</a> grows in.  Draw attention to features of the plants, such as thick, fleshy leaves, spikes or hairy stems, and encourage children to explain what those features may help with.  Can the children suggest the type of habitat a plant may grow in based on its features?	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">5 mins</div>
  	<b>Where Do Plants Live?</b> Children complete the <a href="#">Where Do Plants Live? Activity Sheet</a> , either individually or in pairs or small groups depending on your preference.  Can the children identify plants that live in hot, dry, cold or wet places? Can the children explain how they know which type of habitat each plant grows in?	<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">20 mins</div>
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">★</div>	Children sort the plants into groups according to the habitats they grow in.	
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">★ ★</div>	Children sort the plants into groups according to the habitats they grow in. They then explain some of the similarities between plants in each habitat group.	
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">★ ★ ★</div>	Children sort the plants into groups according to the habitats they grow in. They then explain how plants in each habitat group are suited to their environment.	



	<b>What Have You Learnt?</b> Use the quiz on the <a href="#">Lesson Presentation</a> to test the children's knowledge of the unit.	
	<b>Growing, Growing, Grown (Optional):</b> Read to the end of the <a href="#">eBook</a> together now to complete this unit and summarise what the children have learnt about plants. (You may prefer to do this at a different time.) You may wish to complete the 'Quiz' section of the book with children, or save and print this for a guided reading lesson. The glossary provides the definitions of some of the new vocabulary used throughout the <a href="#">eBook</a> .	

**Exploreit**

**Observeit:** Source a number of adult plants from different habitats (such as a cactus, Venus flytrap and some more common plants that grow in or near the school environment). Children can make observational drawings of the plants and make suggestions for the habitat they come from, based on what they see.

**Createit:** Using everything they have learnt during this unit, children could each create a small section of information text and relevant drawings to add to a class book of plant facts.

**Reasonit**

Children discuss [Reasoning Card 6: How Do Plants Grow in Hot, Dry or Cold Places](#). Children sort each plant based on its habitat and explain some of the similarities between them.

### Assessment

<b>Scientific Knowledge</b>	
<b>Working Towards the Expected Level</b>  With support, children find out how different plants need different amounts of water and light and different temperatures to grow and stay healthy. They begin to understand how some plants are suited to their habitats.	Children:
<b>Working At the Expected Level</b>  Children find out and describe how different plants need different amounts of water and light and different temperatures to grow and stay healthy. They understand how some plants are suited to their habitats.	Children:
<b>Working At Greater Depth</b>  Children find out and describe how different plants need different amounts of water and light and different temperatures to grow and stay healthy. They can explain how a variety of plants are suited to their habitats.	Children:
<b>Working Scientifically</b>	
<b>Working Towards the Expected Level</b>  With support, children can begin to use simple features to compare living things.	Children:
<b>Working At the Expected Level</b>  Children can use simple features to compare living things.	Children:
<b>Working At Greater Depth</b>  Children can use simple features to compare living things and begin to explain their comparisons.	Children:

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				Delivered By:			Support:		
Success Criteria	Me	Friend	Teacher	T	PPA	S	I	AL	GP
I can say how plants have different features that make them suited to where they live.				Notes/Evidence					
I can identify plants that live in hot, dry, cold or wet places.									
I can explain how I know which type of habitat each plant grows in.									
Next Steps									
<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>									

<b>T</b>	Teacher	<b>I</b>	Independent
<b>PPA</b>	Planning, Preparation and Assessment	<b>AL</b>	Adult Led
<b>S</b>	Supply	<b>GP</b>	Guided Practice

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<b>PPA</b>	Planning, Preparation and Assessment	<b>AL</b>	Adult Led
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