

Thinking Walk – 1

Starting Point

Can you...

think of a plant that lives somewhere hot, cold, wet or dry?

Did you know...

that to help them survive in these different situations, some plants have developed their own amazing adaptations (species survival structures)?

Darwin was very interested in these special survival structures and made collections, observations and notes on the plant and animal adaptations he studied.

You are going to follow in Darwin's footsteps by going on an Amazing Adaptations Thinking Walk!

Follow the route to each Thinking Point.

As you walk, try out the activities. Can you come up with any bright ideas to answer the questions at each Thinking Point?

See how your bright ideas compare with your classmates at the end of your journey.

Happy thinking!

Plant Explorer Thinking Walk

...following in Darwin's footsteps



Thinking Walk – 2

Plant Explorer Thinking Walk ...following in Darwin's footsteps

Can you...

see flowers of different colours?

Did you know...

that some flowers need insects to visit them to help the plant produce seeds?

Plants can attract the insects to their flowers in many different ways. They can produce nice or nasty scents, offer delicious sugary food called nectar and make their flowers a fabulous range of colours. Interestingly, flowers and berries that are red usually attract birds, but not insects to them.

Can you think...

why flowers that attract insects are not likely to be red in colour?

As you walk...

have a look around. What colour flowers do insects seem to be attracted to?



Thinking Walk – 3

Plant Explorer Thinking Walk ...following in Darwin's footsteps

Can you...

spot any climbing plants?

Did you know...

that some plants use other plants or structures to provide support and allow them to reach as much light for growing as possible? To help them climb, they put out tendrils that climb or suckers or roots that cling.

Darwin wondered how ivy (the English name for the climbing plant *Hedera*) could grow straight up smooth steep rocks with only its roots attaching to the surface. He grew his ivy against a pane of glass and saw that the little roots gave out a sticky substance, which glued them to the surface. Clever!

Can you think...

what support structures you would need to help you climb up a steep rock face?

As you walk...

can you spot any plants using tendrils, suckers or roots for climbing?



Thinking Walk – 4

Plant Explorer Thinking Walk ...following in Darwin's footsteps

Can you...

survive on a diet of sunlight?

Did you know...

that most plants can! The green parts of their leaves use the energy from the sun to turn carbon dioxide from the air, and water from the soil, into the plant's food. This food is a sugar called glucose. This amazing process going on inside the leaf is called photosynthesis (*photo* means light and *synthesis* means making).

Plants also need air, water and soil to give them a balanced diet of all the minerals they need for a healthy life. Some plants grow in conditions where this is not possible and they add missing minerals to their diets in unusual ways.

Can you think...

how plants that cannot get all their minerals from the air, water and soil survive?

As you walk...

look for leaves that are busy making food. See if you can spot the smallest leaf? Then see if you can spot the largest leaf?



Thinking Walk – 5

Plant Explorer Thinking Walk ...following in Darwin's footsteps

Can you...

imagine you are a seed and are getting ready to begin growing?

Did you know...

that plants have developed some clever ways of spreading their seeds from their parent plant to a new place to grow?

This travel is called seed dispersal. It means all the new growing plants don't compete for the same light and water with the parent plant.

Darwin made a lot of collections, observations and notes on seed dispersal.

Can you think...

how different plants have developed many amazing and clever ways of carrying our seed dispersal?

As you walk...

Think about why plants with seeds that are very light do not need special ways of carrying out dispersal? Think about how heavy seeds, like those found inside fruits that we eat have developed clever ways of dispersing their fruit.



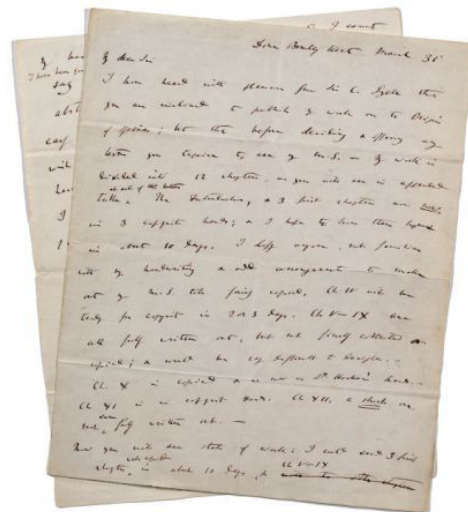
Thinking Walk – 6

Plant Explorer Thinking Walk ...following in Darwin's footsteps

Congratulations you have reached the end of the thinking walk!

We hope, that like Darwin, you enjoyed walking and thinking using your senses.

Did you come up with any bright ideas to the questions? Darwin and his friends often discussed their ideas and wrote letters to each other. Their discussions and letters helped them to change their thoughts as new research gave them new ideas.



Darwin Letter © John Murray Archive: National Library of Scotland.

