

# Classifying Organisms

## Learning Objective:

To be able to classify plants according to their characteristics.







daisy



birch tree



oak tree



cabbage



barley



rhododendron



orange tree



ivy



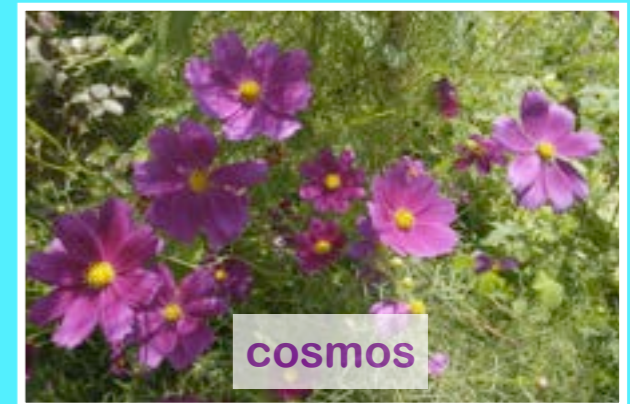
fern



moss



grass



cosmos



How could you sort these plants into groups?



Botanists (scientists who study plants) have lots of ways of classifying plants to help identify them. Just like animals, there are ways you can sort them into broad groups and ways you can sort them into more specific groups.



What would you say all plants have in common?

What are the features of plants that make them different to animals?

There are several differences between plants and animals. For example, plants cannot move by themselves. They cannot get up and walk away if they decide they like one bit of soil better than another. They also grow to suit their surroundings unlike animals who have a fixed body plan.

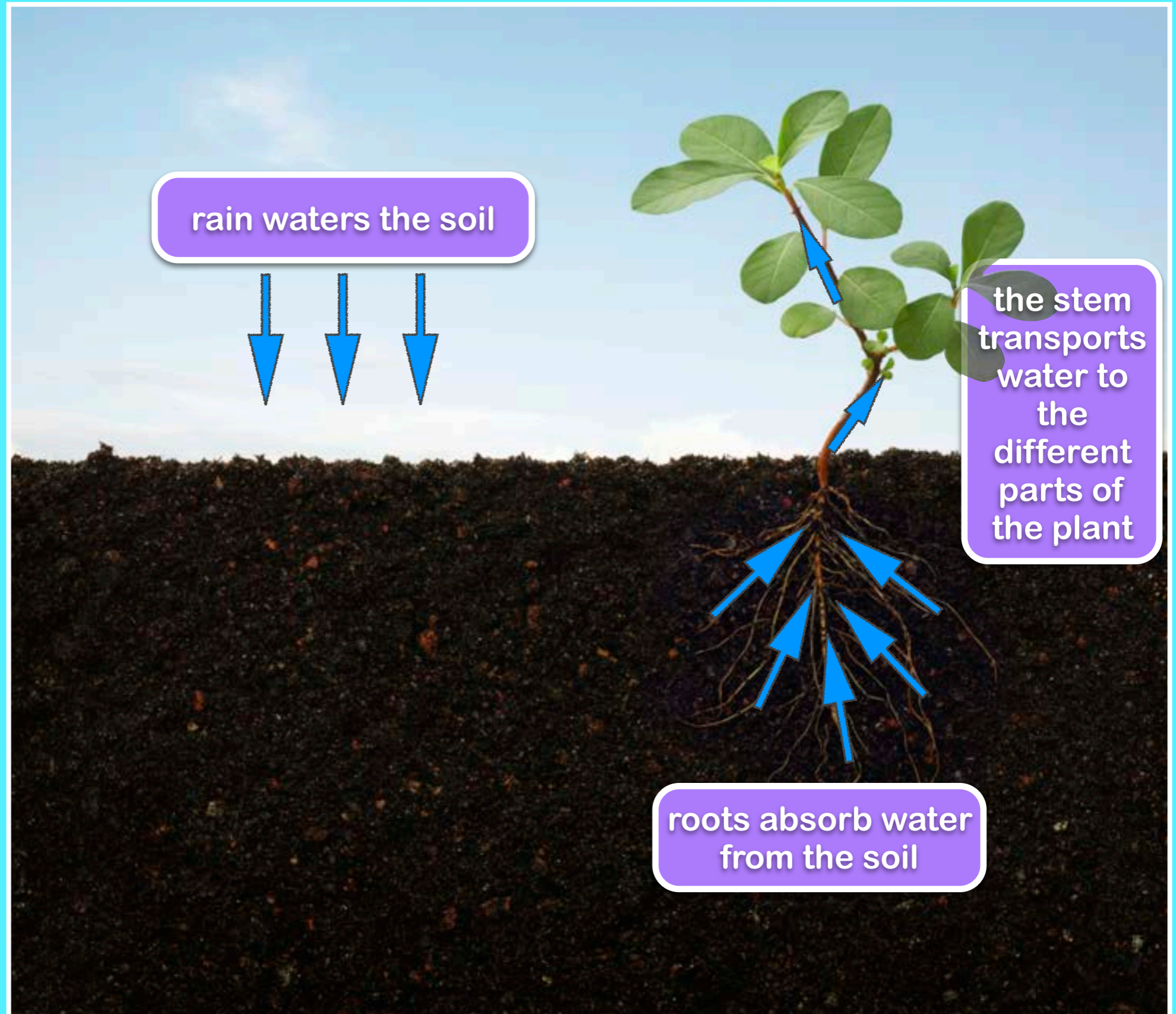


One of the broadest ways we can classify plants is to sort them into vascular and non-vascular groups. What do you think this might mean?





Vascular plants are plants that have a system for transporting water and nutrients to different parts of the plant. These plants all have roots and a stem.





Non-vascular plants do not have roots or a stem. Instead, these plants have tiny hairs called rhizoids which latch on to a surface, such as the ground, a rock or tree trunk, to keep the plant in place. They absorb water from their environment which is why you often find moss in damp places.

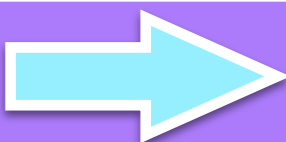
Mosses, hornworts and liverworts are the three main types of non-vascular plants!







Non-vascular plants are less complex than vascular plants. They are also smaller as the plant is not able to transport water and nutrients in the same way a vascular plant can. This affects how much they can grow.





Another way to classify plants is into flowering and non-flowering groups. Non-vascular plants are part of the non-flowering group. Some non-flowering plants, such as ferns, reproduce using spores so they do not need seeds.





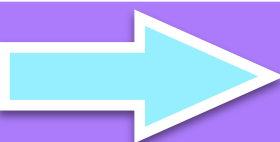


pinces, firs and cedars are all non-flowering trees



pine cones

Other non-flowering plants, like conifers, have seeds that are not protected by a flower. The cones on pine trees, for example, are the seeds of the plant. They do not produce flowers because they do not need to.







wheat



lemon tree



geranium



daffodil



hyacinth



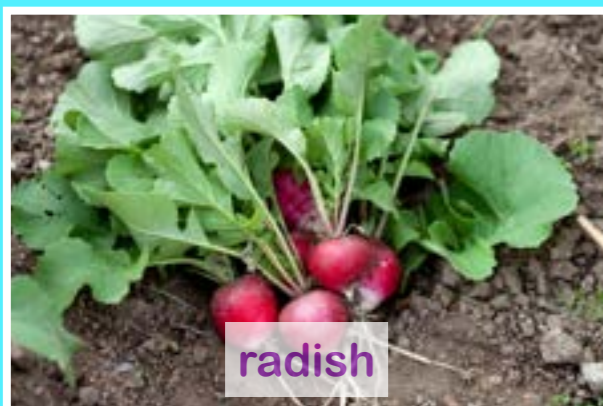
rhubarb



grass



horse chestnut tree



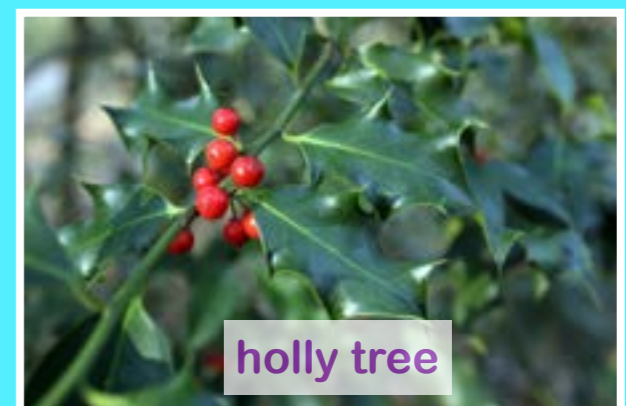
radish



chives



raspberry bush



holly tree



Most plants fall into the 'flowering plants' group. All these plants are flowering plants. How could you group them?





Have a look at the classification key on the next slide. Can you explain what each category is and think of more specific examples of plants that fit into each category?





# Plant

## Non-vascular

Has no true roots

Examples: mosses,  
hornworts and  
liverworts

## Vascular

Has roots

## Has seeds

Reproduces with  
seeds

## Flowering

Has seeds protected  
by a flower or fruit

Examples: grasses,  
bulb plants, deciduous  
trees, fruits, vegetables

## Non-flowering

Has seeds  
unprotected by a  
flower or fruit

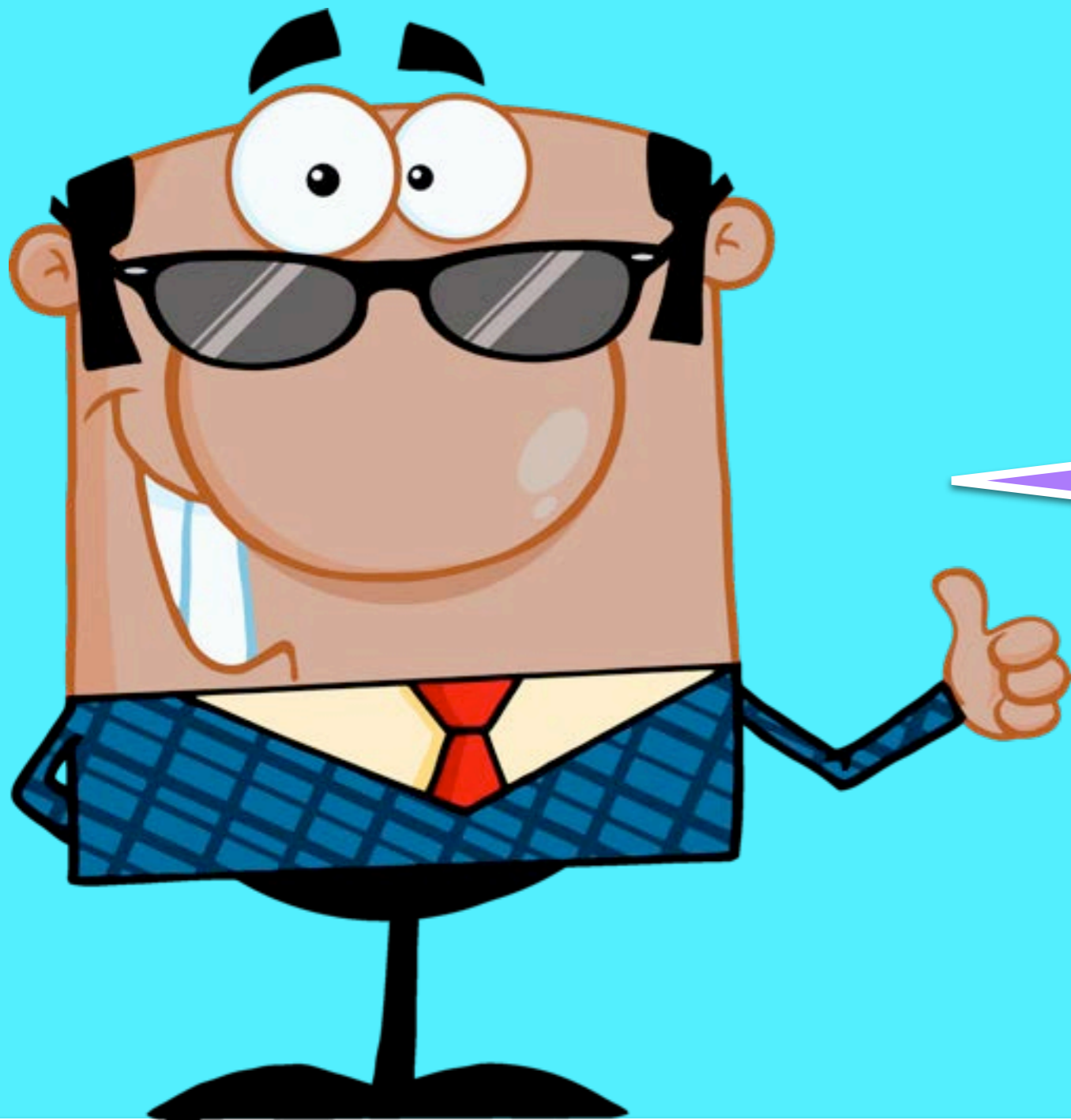
Examples: pines, firs  
and cedars

## No seeds

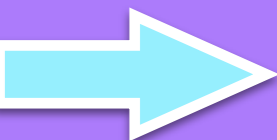
Reproduces with  
spores

Examples: ferns





Good work gang! Time to have a go at identifying and classifying some plants on your own!





# Plenary:

cherry tree



foxgloves



How many similarities and differences can you list between these two plants?



carpet moss



pine tree



What about these two plants? How are they similar? How are they different?

