

Join our Moss Hunt

Explore Ireland's tiniest plants with fun activities (and a bit of science)



A botanist,
an artist and a designer
produced this Moss Hunt
for you. There are eight
mosses to find and nine
fun, mossy activities.
Enjoy!

Tip: using a hand lens,
magnifying glass or phone camera
will help you see some of the
tiny features of the mosses.



You can find mosses anywhere in Ireland,
town or countryside, at any time of year.
But have you looked at moss, really looked?

They come in different shapes and sizes.

They form cushions and carpets.

They can look like tiny ferns or miniature trees.

They can be green, yellow, orange or red.

Take a close look and we think that you
will be surprised by what you see.

I'm a Moss Carder Bee.
I nest on the ground and
gather moss to cover my nest.
I'm very rare in Ireland.



A bit of science!

Mosses are part of a group of plants called Bryophytes. These were the first plants to grow on land, over 470 million years ago.

Mosses have a much simpler structure than trees and flowers and can be very tiny, from a few millimetres high, to up to one metre in height.



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Where can you find mosses? Despite their small size, mosses can be very abundant and can be found in many places: they are often found carpeting stone walls, woodland floors, the tops of mountains and on rocks in rivers. They will even grow on discarded rubbish such as old boots, car tyres and cushions!





How can mosses grow on rock and rubbish?
Mosses have some special features that allow them to live in these extreme places. They don't have proper roots, so they get the water and nutrients they need to grow by absorbing them through their leaf surface. This means that they can grow in places with no soil, such as stone walls and rocks.

Mosses like to be damp so what happens when there's no rain?

Another special feature of mosses is the ability of some of them to survive very dry conditions. They just stop growing when it's dry and start growing again when it rains. However, there are some rare mosses that are very sensitive to drying and only live in places where there is high rainfall, such as the west of Ireland.

Ireland is one of the most important places in the world for these rare mosses that love damp places.

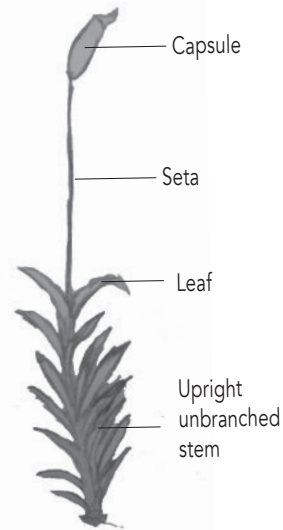


What do mosses look like?

This leaflet shows two main types of moss. Ones with unbranched stems are called acrocarps and are indicated, in this guide, by the symbol below.



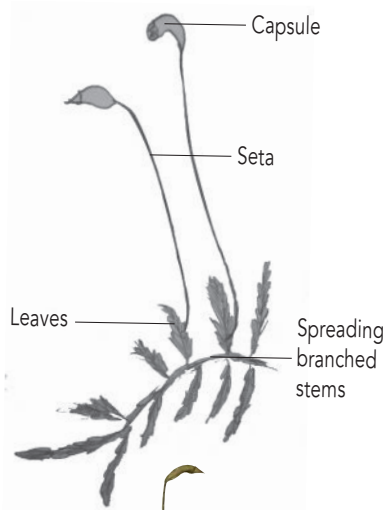
ACROCARPS



Mosses with branched stems are called pleurocarps and are indicated by the symbol below.



PLEUROCARPS



Let's explore!
Can you find the
following eight
common mosses?



*Hint: some of their names will help you know
what to look for - spear, cushion, plait.*

Which of the mossy
activities will you try first?
(See pages 14 - 15).



The leaves are small and fine and have a silvery hair point at the end of the leaf. These probably help to reflect sunlight and trap overnight dew as this moss grows in very open dry places.



Grey-cushioned *Grimmia*

Grimmia pulvinata

This moss grows in small cushions (1-2cm high) on the top of walls, rocks and concrete.



This moss produces many little oval capsules, which contain spores to form new plants. The capsules are at the end of a curved green stalk which buries itself into the moss cushion.



Have a look at the top of the wall for another small grey coloured moss. This forms little tufts about 1cm tall.

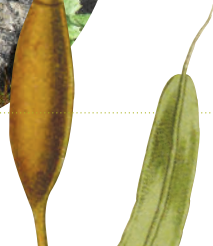
Wall Screw-moss *Tortula muralis*



Like Grey-cushioned Grimmia, this moss has small, fine leaves with a silvery hair point at their tip.



You can tell the difference between these two species easily as Wall Screw-moss has narrow capsules at the end of long red-purple stalks which stand up 1-2cm from the plant.



Next, get down on your hands and knees and look amongst the grass in a lawn, grass verge or meadow to see if you can find....

Springy Turf-moss

Rhytidiadelphus squarrosus



Its leaves are pale green. The most distinctive feature is the way that the leaves curve away from the stem and form little 'stars' when you look down on the top of the plant.

Pointed Spear-moss

Calliergonella cuspidata



This moss likes damp grassy places. The stems have lots of small branches. The leaves are green to yellow-green and the stem is often reddish. Unlike Springy Turf-moss, the triangular leaves are straight. The key feature of this moss is that the leaves at the tip of each stem roll together to form a 'spear-tip'.



Woodlands are one of the best places to look for different types of moss. Mosses grow in different part of the woodland. Start by looking on the ground in the woodland. Can you find this feathery moss?

Common Tamarisk-moss

Thuidium tamariscinum



This is the most highly branched moss found in Ireland. It grows in carpets on the ground in many different types of woodland. The main stems are branched and then these branches branch again 1-2 times. This makes it look very feathery like a little fern. The small leaves are green, as are the stems.

If there is a wet area in your woodland then see if you can find Ireland's tallest moss:

Common Haircap

Polytrichum commune



The stiff green leaves are thick, and you can't see through them (unlike Broom Forkmoss on the following page).

This moss forms loose cushions that can grow up to 40cm tall. The leaves stick out from around the stem like a bottle brush.

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Can you find these species on a fallen log, or at the base of a tree?

Broom Forkmoss

Dicranum scoparium



This is a medium size moss and grows in cushions up to 10cm tall.



It has yellow-green leaves which are long and narrow. The leaf is thin, and you can see through it with a hand lens.



Cypress-leaved Plaitmoss

Hypnum cupressiforme



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This moss grows on trees and on rocks, often in woodland. It has only a few branches. Its fine yellowy-green leaves are strongly curved down towards the surface on which the moss grows. Plaitmosses are well named as their leaves look as if they have been plaited along the stems.



Some mossy activities to enjoy

*Go out after it has rained
and find some wet moss.*

Give it a squeeze and see how much water comes out. Do different species hold different amounts of water?

*Close your eyes and stroke
different types of moss.*

Can you tell what type of moss it is by feel? Grey-cushioned *Grimmia* feels like a small furry animal, whilst Common Tamarisk-moss is loose and springy.

Be a rainmaker.

Find a mossy wall that has been in the sunshine. Many mosses become dry and curled up 'asleep' waiting for rain. If you spray them with water their leaves will spring open and get ready to grow again.

*Find a moss-covered
rock in woodland.*

Put your hand into the moss to find the rock underneath. How thick is the moss layer covering the rock?

*How many mosses can you
find in your lawn, on a wall or in
a woodland near you?*

You don't need to know all their names – just look to see what different types you can find. Which habitat had the most species?





Find a moss-covered tree.

Where are the mosses growing on the tree?
Do different mosses grow on the branches,
tree trunk and base of the tree?

*What is the smallest moss
you can find?*

What was it growing on?

*What is the tallest moss
you can find?*

Where was it growing? Hint:
Tall mosses usually only grow
in damp places!

*What's the weirdest place
you can find moss?*

Try looking on old cars, rubbish,
pavements....anywhere!!

After you've done the
Moss Hunt, visit the 'For Kids'
page of www.ellenhutchins.com
for follow-up activities
to do indoors.

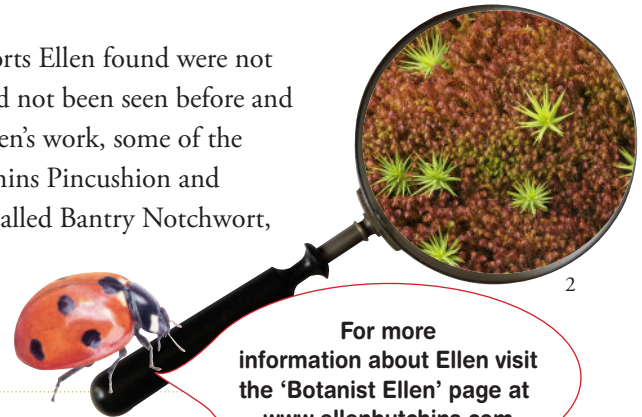


Following in Ellen's Footsteps



Over 200 years ago, a young Irish woman, Ellen Hutchins, started to look closely at mosses near her home on the shores of Bantry Bay in West Cork. She became fascinated by their tiny details and loved their beauty. Ellen learnt their names and what they looked like from botany books. She collected little pieces of rare and interesting mosses and liverworts, dried them as specimens on paper, and sent these to botanists overseas. The other botanists were delighted with what Ellen was finding. They could tell that she was very good indeed at observing and identifying mosses and that Ireland was a special place for them.

¹ Some of the mosses and liverworts Ellen found were not described in the books she had. They were 'new' ones that had not been seen before and did not have names. To show how much they appreciated Ellen's work, some of the botanists named plants after her. There is a moss called Hutchins Pincushion and a liverwort called Hutchins Hollywort. Another liverwort is called Bantry Notchwort, celebrating the place where Ellen found it.



¹ One of Ellen's moss specimens: Stragglng Pouchwort,
Credit: Courtesy of the William & Lynda Steere Herbarium of The New York Botanical Garden.

² *Herbertus hutchinsiae* with stars of *Polytrichum commune* growing through it, Credit: Robert Thompson.

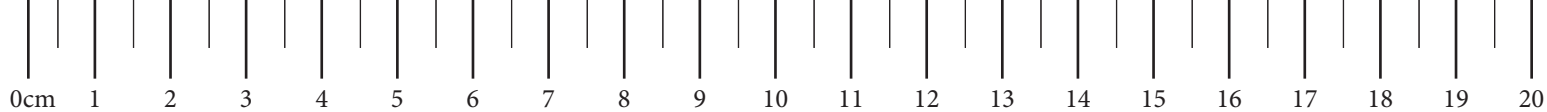
For more
information about Ellen visit
the 'Botanist Ellen' page at
www.ellenhutchins.com

Ellen would be very pleased that you have been on a moss hunt and looked closely at these tiny plants. Ellen was also an artist, so continue to follow in her footsteps by doing the nature art activities on the

For Kids page found on www.ellenhutchins.com

Mosses and liverworts are bryophytes. Ellen listed over 250 bryophytes in the Bantry Bay area near her home.





Use the ruler at the top of the page to measure the height of the mosses you find.



Text: Joanne Denyer. Photographs: Joanne Denyer (unless otherwise credited)

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For follow up activities from this Moss Hunt and more creative nature ideas aimed at children visit the 'For Kids' page of www.ellenhutchins.com



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