



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.





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

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

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.



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



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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.

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.



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¹ One of Ellen's moss specimens: *Stragglings Pouchwort*.
Credit: Courtesy of the William & Lynda Steere Herbarium of The New York Botanical Garden.
² *Herbertus hutchinsiae* with stars of *Polypodium commune* growing through it. Credit: Robert Thompson.

Following in Ellen's Footsteps

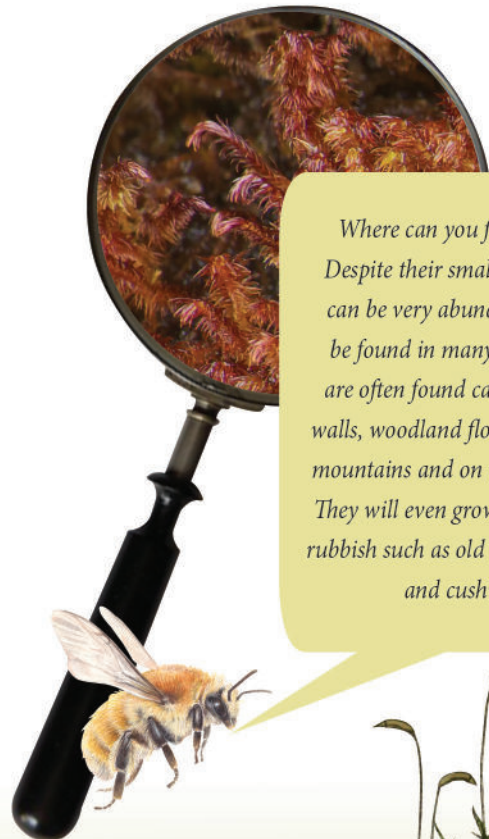
A bit of science!

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!



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

What's the weirdest place you can find moss?
Try looking on old cars, rubbish, pavements....anywhere!!

What is the tallest moss you can find?
Where was it growing? Hint: Tall mosses usually only grow in damp places!

What is the smallest moss you can find?
What was it growing on?

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?

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.

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 rock in woodland.

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

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.

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?

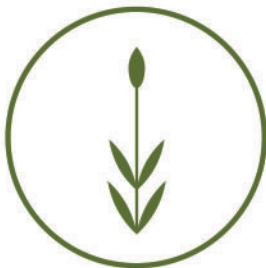
Be a rainmaker.

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.

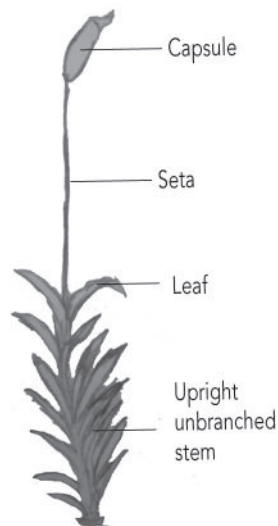
Some mossy activities to enjoy

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.





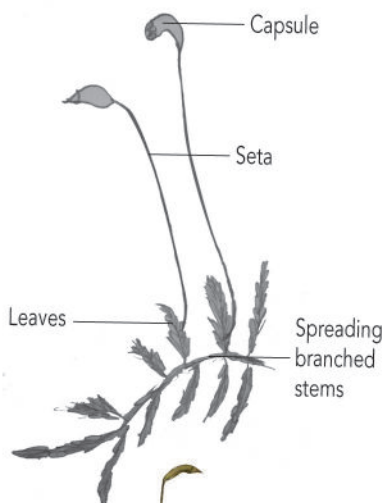
This moss grows on trees and on rocks, often in woodland. It has only a few branches. Its fine yellowy-green leaves are strongly curved down towards the surface on which the moss grows. Plaitmosses are well named as their leaves look as if they have been plaited along the stems.



Cypress-leaved Plaitmoss

Hypnum cupressiforme

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).



Broom Forkmoss

Dicranum scoparium

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



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.



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.





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



Common Haircap *Polytichum commune*

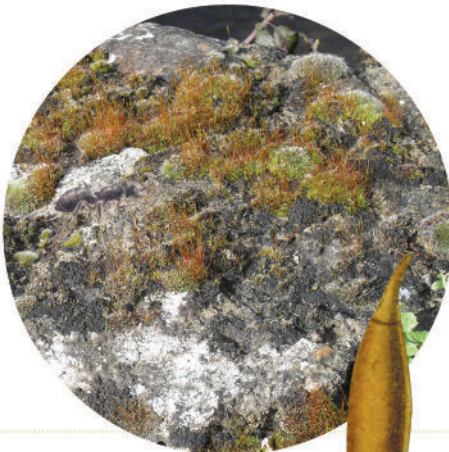
If there is a wet area in your woodland then see if you can find Ireland's tallest moss:

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



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.





Common Tamarisk-moss

Thuidium tamariscinum

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



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.



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....

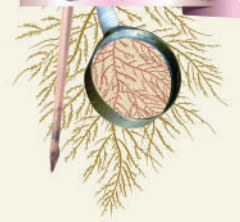
Springy Turf-moss

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.

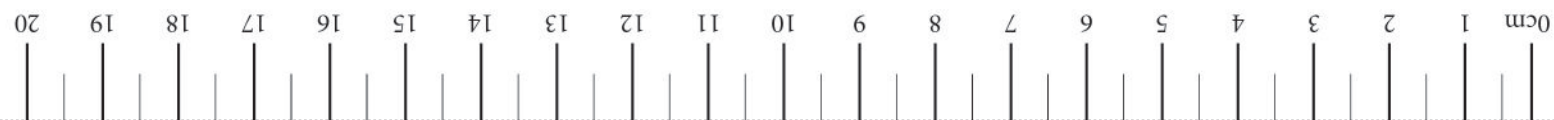




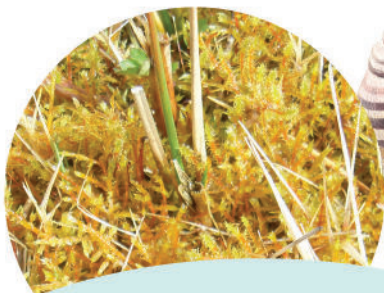
Don't stop, the Hunt
continues this way

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

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



Pointed Sparmoss *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'.