



Discovering Mosses

Moss specimen record sheet guide



Connect with nature
Promote microscopy
Inspire STEM



Step 1

What do you see with the naked eye?

Look at the moss in its environment:

Environment

Location:

On soil, rock, bark, roof, wall, damp ground, tree base, etc.

Gametophytes

Growth form:

Acrocarpous or Pleurocarpous

Colour: Shades of green, yellow-green, brownish, reddish tints.

Texture: Shiny vs. dull, crisp vs. floppy.

Sporophytes (capsules on stalks)

Present or absent.

If present, are they upright, nodding, or curved?



Step 2

Close-up with phone camera or hand lens

Zoom in on stems, leaves, and capsules:

Gametophyte

Leaf shape: Narrow, broad, rounded, pointed, notched.

Leaf size: Tiny (<1 mm), small (1–3 mm), larger (>3 mm).

Nerve: Reaches the leaf tip, stops short, or absent.

Leaf edge: Smooth, toothed, rolled under, translucent border.

Arrangement: Spiralled around stem, flattened in two rows, clustered at stem tips.

Sporophyte

Capsule (if present): Shape (cylindrical, globular, pear-shaped), upright vs. drooping.

Seta (stalk): Colour (green, yellow, red, brown), smooth vs. rough, straight vs. twisted.



Step 3

Hand lens detail or microscope

(not always needed)

Look for fine details that separate similar species:

Leaf cells

Long and narrow vs. short and boxy.

With papillae (bumps) or smooth.

Cell arrangement:

Uniform across leaf,

or different at base, mid-section, and tip.

Nerve cross-section (microscope):

Thickened, central cells vs. absent.

Special structures:

- Hair points: Clear tip extensions of leaves.
- Alar cells: Distinctive basal cells at the leaf corners.
- Gemmae: Tiny reproductive buds on leaves or stems.

Quick Tips: Take photos at each step: wide, close, and detailed. Compare with a field guide e.g. <https://www.britishbryologicalsociety.org.uk/>
Don't worry about getting to species right away, even recognising moss families and forms is a great start. Use the Moss Safari Record Sheet to help.



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