Field Botany Training Pack No.1
(compiled for vc77 Lanarkshire)

Field botany is the study of plants in the wild. The BSBI (Botanical Society of Britain & Ireland) mobilizes large numbers of field botanists, all across the country, to gather data about what plants grow where. The accumulation of this data forms the core of scientific understanding of the identity and changing distribution of our wild plants.

Botanists of all levels, from enthusiastic beginners to leading academics, have a role to play in the recording of plant data.

The BSBI uses the old county boundaries (known as ‘vice-counties’) so that past and current data can be readily compared. The vice-county of Lanarkshire, known as vc77, encompasses the modern South Lanarkshire, North Lanarkshire, a large part of the City of Glasgow, and a small part of East Dunbartonshire - a total area of some 2,459 square kilometres.

This vast area is subdivided according to the Ordnance Survey grid system. The smallest unit of measurement is the single 1km map square, known as a monad. It is a desirable goal to have a list of wild plants for each monad.

However, most of the national distribution records are located to tetrads. A tetrad is formed of four monads (2x2). Lanarkshire comprises all or part of 661 tetrads.

The least precise resolution of data, for example for presentation on a one-page map of the whole of the UK, is by hectad. A hectad is an area of 100 monads (10x10).

Thus any plant that a person observes should ideally be recorded in its hectad, tetrad and monad. In Lanarkshire there are still 201 tetrads absent from the database: in other words no-one has ever recorded any plants as growing in those squares. There lies an enticing challenge to ‘citizen science’ - a great incentive to get out and look for plants.

This pack is designed to get beginners equipped to take part. Fifty of Lanarkshire’s most easily-identified species are described here: work to become confident of these plants by using the descriptions and photos alongside the more thorough text of your own familiar flower book. Then you can ask for the Test to prove you’ve got a good grasp of it all, before moving on to Pack No.2!

(The information on this page will be part of the Test, so study it carefully.)
Two plants most people know

**Bellis perennis** (Daisy)
Probably the first plant that most people learn to name.

Very familiar - used for making daisy-chains. The white rays are often tinged pink beneath. The leaves are spoon-shaped, in a rosette, lying on the ground.

The whole plant is very short and likes lawns and bare places.

**Taraxacum agg.** (Dandelion)
Another very familiar plant. (The ‘agg.’ means that all Dandelions are usually lumped together.)

The leaves are long and slightly or significantly toothed, all in a rosette on the ground. Often the leaves are all that is seen.

The flower is bright yellow, giving way to the familiar spherical ‘clock’ of hairy seeds. The stems can often be reddish.

The whole plant is usually short and is a very common weed of roadsides and bare places.

N.B. There are dozens of distinct species of Dandelion, but only experts record them separately.
Two Plantains

*Plantago lanceolata* (Ribwort Plantain)
Possibly the most common wild plant in Europe and familiar to most people.

The leaves are long and obviously ribbed. The single flowerhead is brown and hard, on a furrowed stalk, with a fuzz of whitish stamens.

The whole plant normally grows to about shin height and is very common in grassy places.

*Plantago major* (Greater Plantain)
Similar, but usually less tall.

The leaves are shorter and broader, giving a rounded appearance. Often the leaves are all that is seen. The flowerheads are long and greenish (often brownish when ripe), with several stalks growing from the rosette of leaves.

The whole plant is usually low in height and grows on bare or trampled ground.

N.B. Other species of Plantain exist, but these two are by far the most common. Also, the leaves in all other species are completely different, so leaf recognition is decisive.
Two Buttercups

*Ranunculus acris* (Meadow Buttercup)
A widespread, tall buttercup.

The flowers are a pale, shiny yellow and the firm stems can be up to 1m tall.

The leaves are deeply cut, with hairy stems.

This plant grows amongst the grasses in fields and meadows, often forming extensive colonies.

*Ranunculus repens* (Creeping Buttercup)
A very common, short buttercup.

The flowers are slightly larger and a deeper shade of golden-yellow.

The leaves are in three segments, the middle one having its own stalk.

The whole plant sprawls on the ground, extending long runners which root to form new plants.

N.B. There are other buttercups, but these two are the most frequently seen.
Two Clovers

*Trifolium repens* (White Clover)
The common small, white clover.

A clover flowerhead comprises many separate flowers.
The small leaves have three rounded leaflets, usually with a white crescent.
The whole plant is very short and its creeping stems often form dense mats.

*Trifolium pratense* (Red Clover)
A more robust clover.

The pink-red flowerheads have a leaf 'right up under their chin'.
(This is important to check.)
The leaflets are broad, narrowing to the tip, and have distinctive whitish chevron markings.
The whole plant is around knee-high and often quite bushy.

N.B. Red Clover can uncommonly be cream and White Clover can be pale pink: check the leaves!
Two easy trees

*Aesculus hippocastanum* (Horse Chestnut)
A tall, spectacular tree.

In spring the Horse Chestnut produces white flowers in tall spikes. The leaves are large, with spreading ‘fingers’.

This big tree is often found in towns, but keep an eye out for those leaves on saplings in woodland. Keep an eye on the ground in woods: leaves on the ground can alert you to what’s above.

*Fagus sylvatica* (Beech)
Solitary trees, ‘avenue’ plantings - or even a common hedging species.

The trunks of Beech (seen here on the left) are grey with hard, smooth bark. The coppery, crunchy leaf-litter on the ground is very typical.

The densely-packed leaves are oval and shiny, with clearly-visible midrib and veins. The seeds (not shown here) are brown, three-sided nuts, contained in a bristly husk.

As well as forming whole woods, Beech is often planted on field margins or as hedges.
Two common ‘weeds’

*M. discoidea* (Pineapple Mayweed)

A weed of waste ground or farm gateways. The flowers are yellowish, with no petals. The leaves are deeply divided into very narrow segments.

The whole plant is branched and stands up (to around shin-height, but usually shorter). Don’t forget to crush those flowers and enjoy the remarkable pineapple scent!

*U. dioica* (Nettle)

Most people are well aware of the Nettle, because of its nasty sting.

Nettles can be tall, with trailing silvery-pink flowers, and often form dense colonies. Learn those toothed leaves well: once stung never forgotten!
Two yellow-flowered shrubs

*Cytisus scoparius* (Broom)

The large, yellow flowers open up loosely. The stems are hard and ridged, usually a bright green colour, and with no spines. The seed pods are flat and black, bursting open spirally, flinging the seeds several metres. The leaves are very small and tend to fall early.

The whole plant typically forms a large bush, up to 2 metres tall.

*Ulex europaeus* (Gorse)

These flowers are more compact, even when open, and can appear through much of the year. Instead of leaves, there are spines - very sharp and rigid.

Compared with Broom, Gorse often has a dark, grubby and untidy appearance.

Gorse bushes often provide a splash of yellow on hill slopes and badly-drained field edges - visible from afar.
Two woodland shrubs

*Ilex aquifolium* (Holly)

The waxy, spiny leaves will be familiar to many. A red berry appears late in the season. Note that upper leaves are less spiny - or not spiny at all.

Holly likes growing in shady places in woods and scrubland.

*Hedera helix* (Ivy)

Ivy grows densely and clambers up fences, hedges and trees - often to great heights. The leaves have a distinctive shape and often carry lighter markings.

The greenish flowers are among the last source of pollen for bees in late autumn. Black berries appear in the spring.

Other species of Ivy are occasionally found: if you find orangey hairs or red stems - tell someone!
Two edible berries

*Rubus fruticosus agg.* (Bramble)
(There are over 300 species of Bramble - in the absence of a specialist, we can use the ‘agg.’)

A typically chaotic Bramble patch: a sprawling mess of plants, with long runners and very sharp prickles.

But, for those who wait until autumn and brave the defences, the reward is well-known: a more or less shiny berry which is black when ripe.

Brambles can grow almost anywhere - lying on the ground or swamping other vegetation.

*Rubus idaeus* (Raspberry)

Unlike the sprawling Bramble, the stems of the Raspberry stand up on their own. The leaflets are wrinkled, and whitish on the underside - catching the eye when blown in a breeze.

The tall stems are pale, with only a few dark, weak prickles. The familiar fruit is always red.

Both Brambles and Raspberries (which are closely related) can form extensive patches. Remember: Bramble plants clamber all over everything; Raspberry plants stand up, side by side.
Two Thistles

*Cirsium vulgare* (Spear Thistle)
This is the definitive Scottish thistle.

A spiny, winged stem with spiny leaves - and a truly spectacular flower. Learn those leaves, so that you can recognise them, even when that's all there is.

This often bushy plant likes grassy places, often at roadsides, and waste places.

*Cirsium arvense* (Creeping Thistle)

Much smaller, paler pink flowers are carried on thornless stems. The leaves are spiny and these rosettes are quite recognisable in stony or bare places.

This plant is tall and slender, often forming extensive patches.
Two umbellifers (i.e. plants whose flowers form an ‘umbrella’ shape)

*Anthriscus sylvestris* (Cow Parsley)

A tall plant, with ribbed stems and delicate white flowers. The leaves are deeply cut and easy to recognise.

Cow Parsley likes roadsides, or meadow areas where it grows among long grasses.

This plant is modest and, although it is quite dominant in early summer, it doesn’t make a fuss.

*Heracleum sphondylium* (Hogweed)

This plant has a ‘grubby’ appearance: the white flowers being very off-white and the leaves quite ragged and sometimes greyish. The leaves are worth learning, as they are often seen on their own. It’s a big leaf, with lobed, wavy leaflets - usually presented horizontally.

The whole plant is tall (up to 2m but usually less) with strong, hairy, hollow, ridged stems.

N.B. There is a Giant Hogweed too, but it has blotchy stems and is much taller than you!
Two wild trees

*Alnus glutinosa* (Alder)

The furrowed leaves are broadest beyond the middle and have a wide, blunt end. Unusually for a deciduous tree, Alder has cones: green at first, but becoming dark and woody.

Alder can be a bushy tree or less organised scrub, but always grows in damp ground or by water.

*Sorbus aucuparia* (Rowan)

A very distinctive small tree, its long leaves divided into many toothed leaflets. Clusters of orange-red berries catch the eye in the autumn. In spring and early summer, the creamy-white flowers are spectacular.

In the wild, Rowan can appear both within mixed woodland and on its own in rough country. It is often a soloist in the woodland orchestra, and increasingly planted.
Two Senecios

*Senecio vulgaris* (Groundsel)

This weed likes gardens and hard, bare ground. The leaves are longer than broad, and lobed. The stems are often reddish.

Gardeners will know this weed well - and with its shallow roots, it's easily pulled up!

*Senecio jacobaea* (Ragwort)

This is a tall, rough plant which likes growing in poor fields. The bright yellow flowers grow in tight clusters.

The mature plant is around knee-high or more, quite bushy, with other individuals scattered nearby.

There is a rosette of leaves on the ground, from which the stem appears. As with many other tall plants, it is worth learning the leaves, so they can be recognised on their own.
Two tall pink flowers

*Chamerion angustifolium* (Rosebay Willowherb)

A familiar scene: a large colony of Rosebay Willowherb in flower. Up close, the flowers are large and unique. After flowering, the long, erect pods ‘unzip’ to launch thousands of seeds into the wind, each with its own ‘parachute’.

This plant is usually found in big colonies: railway embankments are a favourite habitat.

*Digitalis purpurea* (Foxglove)

Everyone will recognise these flower-tubes (though some people have found a superficial similarity with Rosebay Willowherb confusing). The plant can grow very tall and has large, downy leaves. In spite of its scientific name, the flowers can also be white.

This plant usually grows in woodland shade: very tall (to 2m or more) and standing alone.
Two urban ‘weeds’ with inconspicuous flowers

*Capsella bursa-pastoris* (Shepherd’s Purse)

A rosette of lobed leaves and a fairly short stem with distinctive seed pods beneath a flowerhead of small, white 4-petalled flowers. The simplest characteristic for identifying this species is the seed pods, which are heart-shaped, sticking out horizontally from the stem.

This plant likes dry, disturbed ground and is very comfortable in urban environments.

*Arabidopsis thaliana* (Thale Cress)

This is a short, weak, straggly plant, often pale, even greyish. The eye-catching feature is the long, thin pods which stick out horizontally. The flowers are tiny and white, with 4 petals. But the thing to focus on is the seed pods.

The whole plant is inconspicuous and likes dry, hard ground such as driveways and flowerbeds.
Two Sow-Thistles
Two similar plants - learn the differences.

**Sonchus oleraceus** (Smooth Sow-Thistle)

A weed of fertile ground: gardens, roadsides, field-edges and disturbed ground. The flowers are a pale yellow.

The leaves are lobed, the lower ones having a conspicuous ‘arrow’ head, and can be greyish. The leaves clasp the stem with *pointed* lobes.

The leaf margins can sometimes be a bit jagged, in which case it may look similar to the following.

**Sonchus asper** (Prickly Sow-Thistle)

Very similar to the preceding, but can grow in poorer soils. The flowers are somewhat darker and often less conspicuous.

The leaves are shiny and have very spiny edges, clasping the stem with *rounded* lobes.

Both these plants can be short or tall and have similarly modest flowers.

N.B. Smooth Sow-Thistle is often more compact and leafy and Prickly Sow-Thistle more rangy and ‘stemmy’. Check how the leaves join the stems. If in doubt, see if there are more typical specimens nearby: if still in doubt, just leave it and ‘walk on by’!
Two vetches

*Vicia sepium* (Bush Vetch)

This is a bushy plant whose leaves consist of many pairs of leaflets. The flowers are a pale bluish-purple, often looking a bit ‘grubby’.

Even more than the flowers, the shape of the leaflets is the key feature: very ‘egg-shaped’ or like a rugby ball, broadest below the middle.

Bush Vetch climbs over other plants, using its tendrils - so don’t be surprised to find it at eye-level!

*Vicia cracca* (Tufted Vetch)

The blue flowers and many leaflets ensure this plant will be noticed. Tufted Vetch prefers waysides and the edges of places.

The leaflets are narrow, pointed at the tip. The long, one-sided flowerheads have up to 30 deep purplish-blue flowers.

It can appear tall, but only because it climbs up fences, hedges or other vegetation.
Two roadside ‘weeds’

*Alliaria petiolata* (Garlic Mustard)

Something of a Lanarkshire speciality: quick-growing in spring to become tall, with broad, very green, toothed leaves and white flowers. Even after flowering, Garlic Mustard continues to attract the eye with its very long seed pods.

This plant is widespread, making particular use of road verges.

*Potentilla anserina* (Silverweed)

The leaves have many toothed leaflets. Red stems are often a feature and long, spreading runners. The bright yellow flowers are quite shy. The plant gets its name from the fact that the underside of the leaves is usually remarkably silver: so turn a leaf over and see.

This plant is low to the ground and likes the edges of roads and paths.
Two more roadside ‘weeds’

*Artemisia vulgaris* (Mugwort)

A tall, bushy plant often seen waving in the wake of passing cars. Also likes urban waste ground.

The tight and compact silver and brown flowers are in long, loose heads. The leaves are also silvery beneath, so an overall silvery effect may catch the eye.

Not conspicuous, but you may have to step onto a road to walk past it, as it blocks the pavement!

*Tussilago farfara* (Coltsfoot)

One of the earliest flowers to appear each year.

The bright yellow, dandelion-like flowers appear in very early spring, on scaly stalks barely able to support their own weight.

The big, distinctive leaves do not appear until after flowering, so the leaves need to be learned. This plant likes waste ground and bare places.

Since the flowering time is early and brief, it is only the leaves which are most often seen.
Two garden ‘weeds’

*Aegopodium podagraria* (Ground Elder)

Something you don’t want to come across in your garden! The pale green leaves have up to 3 groups of toothed leaflets.

The flowers appear in summer in a white ‘umbel’, often in distinct sub-clusters.

This plant spreads aggressively, by means of white, underground stems (rhizomes).

*Sagina procumbens* (Procumbent Pearlwort)

A tiny plant, very common but easily overlooked.

This plant loves cracks in walls, paving-stones, kerbstones and between monoblocks. It is tiny, with very thin, linear leaves and minute flowers which are white, but quite often greenish.

As well as growing singly, it can form dense mats.

This plant can easily be neglected but, if you remember to look in likely places, it’s often there. Go out and see if you can find it right now, probably just a few paces from your door!
Two flowers of grassy verges

*Achillea millefolium* (Yarrow)

The densely-packed, flat flowerheads can be white, or sometimes pink, and appear from June onwards. Even in the absence of flowers, Yarrow can be readily identified from its soft, feathery leaves which, conveniently, are scented.

This plant grows on grassy banks and verges.

*Veronica chamaedrys* (Germander Speedwell)

The bright blue flowers have four unequal petals and a white ‘eye’. The leaves are pointed oval, usually unstalked. Germander Speedwell normally grows in loosely scattered patches.

This plant prefers dappled shade and likes to hide among the grasses.
Two hedgerow plants

*Galium aparine* (Common Cleavers)

A typical riot of sticky stems with leaves in whorls. (The apparent stickiness comes, in which fact, from numerous, tiny, hooked hairs.)

The white flowers are very tiny. Much more obvious are the small, round, sticky seeds which can stick to clothing or animal fur.

This plant sprawls and scrambles, leaving behind a mess of pale, dead stalks and leaves.

*Crataegus monogyna* (Hawthorn)

This is a very widespread hedgerow shrub but often grows as a small, free-standing tree. The leaves have 3 to 5 deeply-cut lobes.

An elegant profusion of white flowers in early summer gives way to hard, red berries (‘haws’).

This plant can form very dense hedges and thickets, often with tall, straggly top stems.
Two plants of wet places

*Caltha palustris* (Marsh Marigold)

The leaves are kidney-shaped in outline, long-stalked, with serrated edges and pale mottling. The large, bright, golden-yellow flowers appear in spring - much like large buttercups, to which they are related.

This plant is eye-catching in ditches and especially on the margins of steams and ponds.

*Filipendula ulmaria* (Meadowsweet)

This species usually forms large colonies of tall stems, topped by a fuzz of creamy flowers, which have a sweet scent.

The leaves are long, divided into wrinkled and toothed leaflets, often with a reddish stem.

It grows in damp, marshy ground or on riverbanks.
Two more wayside plants

*Arctium minus* (Lesser Burdock)

This large, bushy plant has branched stems and very large, hairy leaves.

The most obvious feature is its seed-heads, or ‘burrs’, which can cling to animals and human clothing with strong, hooked hairs.

This plant likes roadsides, where it may not stand out against other vegetation. But up close, it’s unmistakable!

*Cruciata laevipes* (Crosswort)

Another Lanarkshire speciality.

Crosswort grows only a few inches tall, perhaps as far as shin height. The leaves are in whorls of 4, giving the plant its name.

The yellow flowers lie in the whorls of leaves, layer by layer. Plants can form dense patches on suitable ground, often on verges.

The whole plant is pale green and soft. It particularly likes to grow around the base of Beech trees.
Into the woods

*Oxalis acetosella* (Wood Sorrel)

This is the ‘shamrock’ - a shy, creeping plant of woodland floors. The leaves have three heart-shaped lobes.

The pale, almost white, flowers have slightly darker veins on the petals. Note also the shape of the unopened leaves.

The flowers appear in April and May, but the leaves are very often found on their own.

*Fraxinus excelsior* (Ash)

This is a tall, spreading tree. Young trunks have smooth, grey bark, which becomes much more fissured with age. The long leaves have as many as 13 leaflets.

The compact, purple flowers appear early in the year, before the leaves. The seed pods hang in ‘bunches of keys’ and last in dried form into the following season.

This is a very common, easily-identified tree (look also for young saplings: short stem, same leaf).