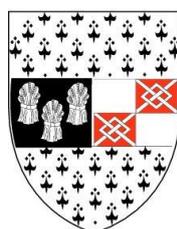




Biodiversity Action Plan

Commissioned by
Kilkenny County Council Heritage Office

St. Colmcille's
National School,
Inistioge,
Co. Kilkenny



Kilkenny
County Council
Comhairle Chontae
Chill Chainnigh



Contents

Introduction.....	3
Helping our pollinators.....	4
Maps.....	5
Inspiration.....	7
Front garden.....	8
Pitch.....	14
Sloped garden.....	16
Back garden.....	18
Vegetable garden.....	20
Side yard.....	21
Further comment.....	22
Classroom work.....	22
Pollinator-friendly planting.....	26



Introduction

Biodiversity in Schools was commissioned by the Heritage Office of Kilkenny County Council to produce a Biodiversity Action Plan for St. Colmcille's NS Inistioge to provide guidance to the school on biodiversity and pollinator actions, and to support the Inistioge Entente Florale submission.

We really enjoyed our visit to your school over the Easter break. We arrived on a beautiful sunny day and were greeted by your lovely display of daffodils.

Your school already benefits from some excellent biodiversity features from old stone walls covered in lichen, to secret woodland gardens filled with native wildflowers.

We are thrilled to be working with your school to implement some biodiversity boosting measures and aid your contribution toward your community's entry in the Entente Florale and TidyTowns competitions. As you will see in this report there is a particular emphasis on helping pollinators to support the exciting All Ireland Pollinator Plan.

We hope you find our suggestions helpful and we look forward to working with you in implementing them!

Helping our pollinators

Ireland is home to 99 species of bee (honey, bumble and solitary) but worryingly more than half of these have undergone substantial declines in their numbers since the 1980s. Research published in 2006 found that over 30% of Irish species are threatened with extinction, with some already having become extinct.

The cause for such concern is not just about honey production, as only one species produces commercially extractable honey, but because of the ecological value of bees. They are often referred to as pollinators; a group of insects who perform the critical process of transferring pollen from one flower to another, ultimately completing the lifecycle of the flower and giving rise to the food we eat. The importance of such insects to our food system is astonishing; 71 of the top 100 world food crops are dependent on pollination, a service worth €153 billion per year.

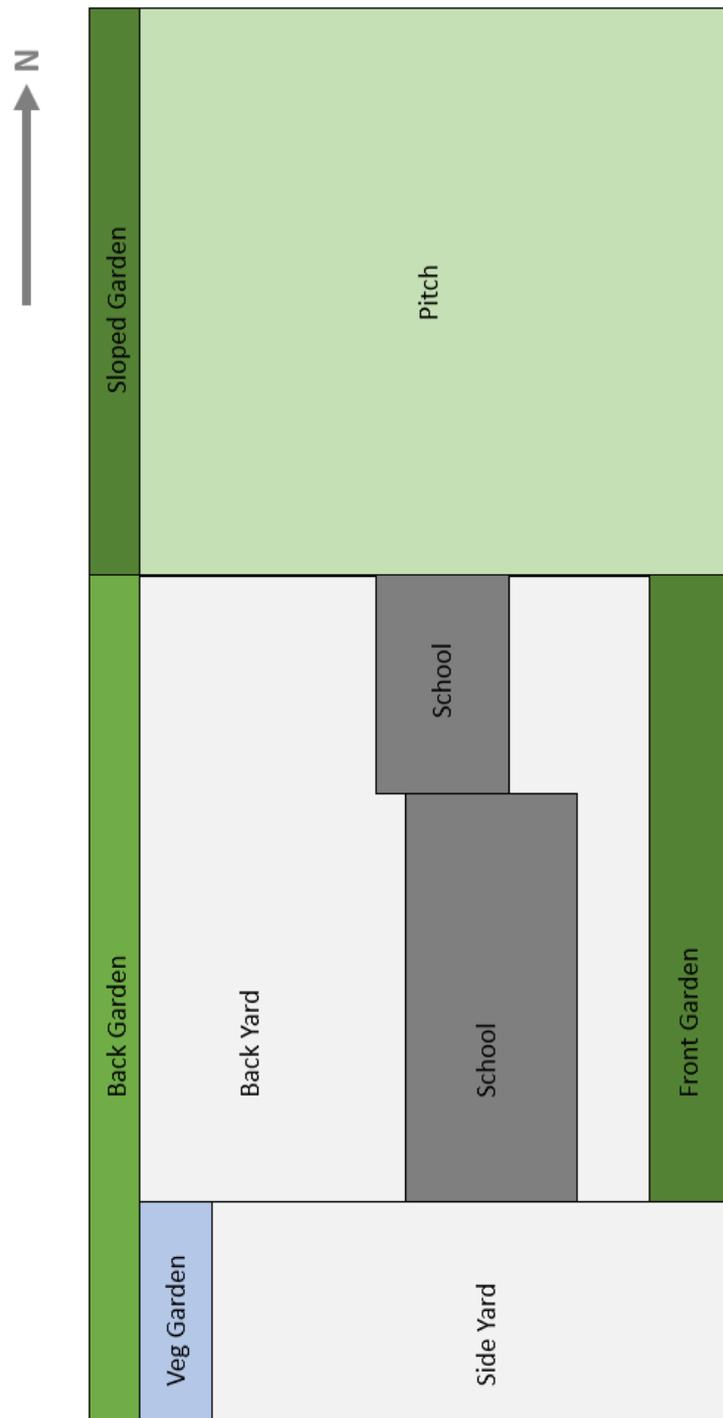
The government has an action plan to help our pollinators called the All Ireland Pollinator Plan which runs from 2015-2020. There is also a junior version aimed at younger people including schools

([https://ark.ie/downloads/Junior Pollinator Plan for Web2.pdf](https://ark.ie/downloads/Junior_Pollinator_Plan_for_Web2.pdf))

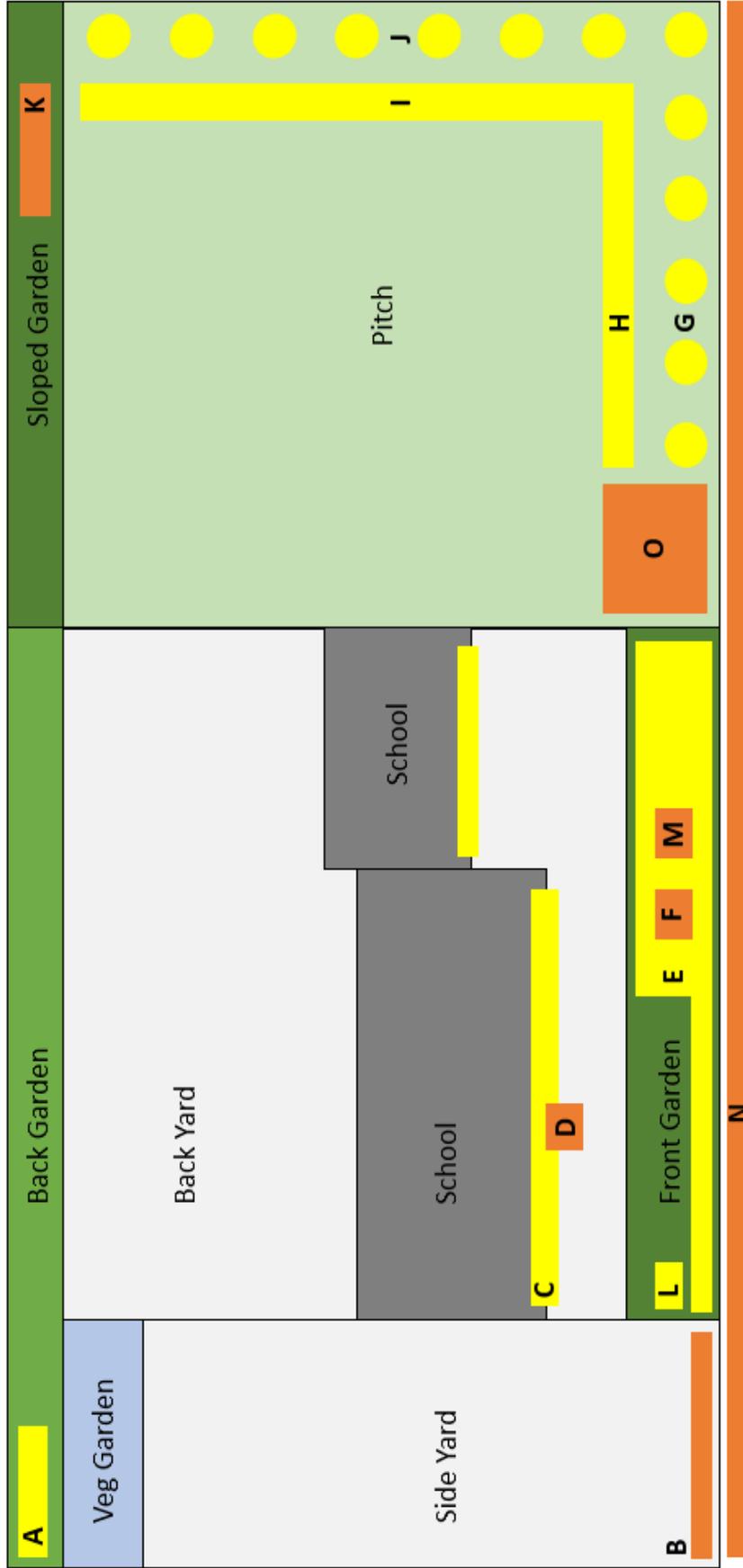


Maps

We have divided your school into seven different zones to make planning easier. We have focused most attention on the front of the school as this is where there is most potential and where you have the opportunity to display your work and raise awareness amongst the community and visitors.



Proposed areas of action



Key

A – Bug Garden	I – Meadow Type 2
B – Hanging Baskets/ Containers	J – Orchard
C – Window Boxes/ Hanging Baskets	K – Solitary Bee Habitat
D – Traditional Water Pump Display	L – Herb Bed
E – Pollinator-friendly Planting	M – Bird Station
F – Information Board	N – Stonewall
G – Pollinator-friendly Trees	O – New Veg. Garden
H – Meadow Type 1	

Inspiration

Pollinator-friendly, colour-themed planting; wildflower meadows; native trees and orchards; herb and vegetable gardens; and habitats for birds, bugs, bees, bats and butterflies.



Photography Credits: Kat Lowen-Bulger, Himmelske Gleder, Howbert & Mays, Our French Garden, Building & Sustainable Solutions, Folksy, This Old House.

Front Garden



Pollinator planting



There are some existing flower beds at the front of the school and during our visit it was great to see them packed with wonderful daffodils.

To improve this area we would suggest defining the beds a little better. For example there is a pathway worn into the flower bed beside the wall. We would suggest embracing this and turning it into a proper pathway. This will also allow easier access for children to the flowerbed. The flowerbed should then be made more defined by building up the edges with brick/kerbing/logs/sleepers. This will then create a raised bed. These flower beds could then be filled with planting

to suit pollinators throughout the year. Please see the 'Pollinator- friendly Planting' on page 26 for more information on suitable plants. For example, while daffodils are very pretty flowers, they offer very little to pollinators. Therefore, try adding other bulbs such as snowdrops and crocuses.

Checklist: Installation of pathway, creation of flowerbeds, shrubs/flowers/bulbs.



Photography Credit: Pinterest, Railway Sleepers

Bird station



Photography Credits: Home & Roost, RSPB

Birds are a wonderful addition to your school garden and to encourage them to visit we recommend creating a bird station at the front of the school. Typical birds which you could expect to see in your school garden are blue tits, great tits, coal tits, robins, goldfinches and chaffinches.

This can be done by installing everything birds need including bird feeders, bird table, bird bath and bird boxes. You can concentrate these in the one area or spread across the entire length of the front garden. For advice on how to do this please visit our website: www.biodiversityinschools.com/birds.

We would envisage the responsibility of topping up the bird feeders be given to a single classroom for the year so ensure the feeders are easily accessible for students.

Checklist: Bird feeders (x3), bird boxes (x3), bird table (x1), bird bath (x1), bird food

Solitary bee habitats



Solitary bees (bees that do not live in colonies or hives) are very important pollinators. Ireland has 99 species of bee – 77 of which are solitary bees.

There is a great opportunity to convert an old tree trunk into a solitary bee habitat by drilling holes into the wood (these holes should be 10cm in depth and 4-8mm diameter; a range of different diameters is best). A pollinator-friendly flower bed surrounding the trunk would be a great idea.

Solitary bee homes could also be placed at the front of the school. The ideal location would be at a height of 1.5-2m on the trunks of the mature trees. These can be bought or made.

Checklist: Solitary bee homes (x3), drill holes in trunk, flowers.



Photography Credits: Broad Oak Nursery, Montana Wildlife Gardener, Natural History Museum

Herb garden



It would be a nice idea to create a specific area dedicated to herbs within the flower beds or in a separate location. Herb gardens are a great resource for schools, due to their sensory appeal, and herbs such as rosemary, thyme, lavender and oregano are wonderful for pollinators too.

Checklist: Herbs.

Information panel



It might be an idea to erect an information panel/ display case at the front of the school to explain all the terrific work the school will be doing for biodiversity and pollinators throughout the year. While it is great to take action, it is also important to explain what you are doing and raise awareness among the parents and community. This is a common feature of school gardens we visit. Alternatively, the students themselves could make some signs with the help of the caretaker.

Checklist: Information panel, interpretive signs

Hanging baskets and Window boxes



There is a great opportunity to introduce pollinator-friendly perennial flowers onto the school building itself. There are already brackets in place to install hanging baskets but a few more would be a good idea. The window sills are also very wide and deep and would therefore suit secured/ anchored window boxes. These could be topped up throughout the year with annual flowers.

Checklist: Hanging baskets & brackets (x5), Window boxes (x6-14), Flowers.

Traditional water pump display



The traditional water pump at the front of the school is a fabulous feature and would make for an excellent floral showpiece as demonstrated elsewhere in the village.

Some containers around the base of the pump filled with pollinator friendly flowers would look stunning.

Checklist: Containers, flowers.

Pitch



Road-side trees

There is great potential to introduce trees or shrubs along the roadside boundary of the pitch. Apart from the biodiversity-rich stone walls this area needs a biodiversity boost. There are a wide range of trees to plant here as described later in the planting section.

Checklist: Trees or shrubs (x c.15)

Stonewall

You have a beautiful stonewall running the entire length of the school. This is of great value for biodiversity and pollinators as it is home to a wide range of species such as mosses, flowers and lichens.

Orchard

The line of trees suggested for along the roadside could continue around the corner of the pitch and along the laneway boundary. Rather than the same tree species these could be a selection of fruit trees such as apple thereby making this area the school orchard.

Checklist: Fruit trees (x c.10-20), fruit bushes

Pollinator meadows

There is space to trial two different types of meadow. There is absolute flexibility regards the size and shape of these meadows to allow normal use of the pitch.

Firstly, a 6-week meadow (below) where the grass is only cut once every 6 weeks to allow flowers to bloom.



Photography Credit: Mark Bolton, Pinterest

The second meadow is a one-cut meadow where the grass is only cut once per year (in September, sometimes April depending on fertility). This will allow a range of native flowers and grasses to develop as well as providing habitats for bees and other pollinators.



Photography Credit: Fern Creek Design, Pinterest

To ensure these areas do not look messy a well-defined shape should be planned. Pathways can be cut through also.

Checklist: Plan shape with caretaker, Strict grass cutting timetable.

Sloped Garden



Solitary bee bank



Photography Credit: Matthew Sheppard, Xerces

Your sloped garden is a wonderful feature. There is already a huge range of plants and flowers growing here such as lesser celandine, dandelion and primrose. All that needs to be done is a light tidy up of old vegetation: remove tree clippings and remove grass cuttings. Try not to over-tidy this area and leave plenty of rotting logs. To add an extra element we recommend turning the end of the sloped garden furthest from the school into a solitary bee habitat. This is perfect as it is dry and sunny. The area just needs to be cleared out of some excess vegetation to expose the soil. The solitary bees will then make this their home. The old tree trunks can be drilled to create further habitats. For advice on creating wild pollinator habitats see:

<http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-FINAL.pdf>

Checklist: Clear debris, Drill holes into logs (but not too much!)

Bird boxes

Although there is ample room for nesting birds here such as blackbirds, robins and blue tits, it would be nice to add some more bird boxes viewable from the road.

Checklist: Bird boxes (x3)

Bat boxes

It is fantastic to see you already have bat boxes in place around the school. Do you know what species of bat is using them? Inistioge is home to many bat species including common pipistrelles, soprano pipistrelles, Daubenton's bats and Leisler's bats. A few more bat boxes would be great!

Checklist: Bat boxes (x2)

Back Garden



Additional fencing

Your back garden is a stunning area, with plant species like lesser celandine, more akin to a secluded woodland than a school garden. We would highly recommend continuing your fencing so children can be brought on nature walks here.

Clear up debris



The natural state of this area is perfect. All that needs to happen is for the logs and debris to be rearranged into neater piles or used in the bug area below.

Bug area



This shaded area behind your vegetable garden would be an ideal location to add some features to help insects. We would recommend creating a bug hotel, bug door, log pile, leaf pile and a small pond to attract frogs. The instructions for all these projects can be found on the projects section of our website under Bugs and Ponds (www.biodiversityinschools.com/school-projects)

Checklist: Bug hotel, Bug door, Log Piles, Leaf Pile, Micro-pond.



Photography Credits: Chris Martin, Ulster Wildlife Trust, The Spruce Buglife



Photography Credits: Chris Martin, Ulster Wildlife Trust, The Spruce Buglife

Vegetable Garden



Raised beds

You already have a great vegetable garden. These beds just need to be patched up, painted, weeded, enriched and planted with pollinator friendly vegetables.

Side Yard



Window boxes

Due to the heavy use of the side yard we would not recommend many projects. Perhaps continue some of your window boxes from the front around to this corner of the school.

Checklist: Hanging baskets (x3), plants.

Hanging baskets on roadside

There is a great opportunity to place planters/ hanging basket at the front of the school yard along the railing. This will brighten up the area and will be a great feature if planted with scented flowers (which pollinator love) as they will be at an easily accessible height.

Checklist: Hanging baskets/ containers, plants.

Back Yard

We didn't have access to this area during our visit but due to the heavy use of the space we would not recommend any actions at the moment

Further comments

As part of your plan to protect pollinators on the school grounds we would recommend not using any toxic chemicals including pesticide sprays or slug pellets. Perhaps the school already follows this regime.

Classroom work



A lost toy found in your secret garden!

Nature walk



You already have a wonderful garden with wild areas that would be extremely difficult to achieve if attempting from scratch.

These areas, combined with the projects outlined in this report, would make for an excellent looped nature walk around the school.

There will be so much to see as the seasons change. A seasonal walk around the garden (more regularly in spring/ summer) documenting these changes would be a great learning experience.

Nature table



Photography Credit: St. Cronins' JNS, Dublin

A nature table could be created in each classroom to document the changes being witnessed on the nature walk. For example, leaves and seeds could be collected and identified, some flowers picked and dried, etc.

Record your work

Like all good scientists, you need to record your work! If your school has taken any actions to help pollinators, you can log them on the National Biodiversity Data Centre website. For instructions on how to log pollinator-friendly actions please visit:

[http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Actions-for-Pollinators Tutorial Gardens.pdf](http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Actions-for-Pollinators_Tutorial_Gardens.pdf)

Here are some other useful classroom resources and posters:

- Bumblebee lifecycle poster:

http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Life-Cycle-Bumblebee_highres_infographic.pdf

- Solitary bee lifecycle poster:

http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Life-Cycle-Solitary-Bee_highres_infographic.pdf

Adopt a species

To integrate biodiversity into the school year and to nurture a knowledge of nature throughout the whole of primary school we recommend giving each class specific duties in relation to the garden.

This is not only to learn about the topics but also manage the garden and plan future projects.

For each topic the goal for the year could be to identify 10 common species of each, for example:

J1 – Insects

SI - Insects

1st - Water Habitats

2nd - Flowers

3rd - Pollinators

4th - Trees

5th - Mammals

6th - Birds



Pollinator-friendly planting

It would be a good idea to colour-theme your planting and also to ensure a year-round presence of nectar and pollen. Please note these recommendations have been taken from the National Biodiversity Data Centre All Ireland Pollinator Plan 2015-2020.

This is not an exhaustive list and even more recommendations can be found in the appendix of:

<http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-Council-Guide-FINAL.pdf>

For information about choosing the right species of native tree and shrub for the right place, see:

https://www.heritagecouncil.ie/content/files/conserving_enhancing_wildlife_guide_2005_480kb.pdf

Fruit Trees & Bushes

- Apple (April-May)
- Cherry (April-May)
- Currants (April-May)
- Plum (April-May)
- Raspberry (June-Aug)

Trees & Shrubs

- Berberis (April-May)
- Blackthorn (March-May)
- Broom (March-April)
- Ceanothus (April-Sept)
- Cotoneaster (May-Aug)
- Deutzia (June-July)
- Firethorn (May-June)
- Forsythia (March-April)
- Hawthorn (May – June)
- Hazel (Feb-April)

- Hebe (June-Oct)
- Mahonia (Dec-May)
- Rowan (May – June)
- Viburnum (April-May)
- Whitebeam (May-June)

Herbs

- Basil (July-Sept)
- Borage (April-Oct)
- Lavender (June-Aug)
- Oregano (June-Aug)
- Rosemary (April-June)
- Sage (June-Aug)
- Thyme (May-Aug)

Hanging Baskets

- Ageratum
- Alyssum 'Sweet White'
- Heliotrope 'Dwarf Marine'
- Verbena 'Blue Lagoon'
- 'Desert Jewels Mixed'

Annual Flowers

- Californian Poppy
- Cerinthe major 'purpurascens'
- Cornflower
- Cosmos
- Lavatera
- Limnanthes douglasii
- Annual poppy
- Scabious
- Night scented stock

- Single sunflowers

Bulbs

- Snowdrop (Jan-Feb) e.g., *Galanthus nivalis*,
- *Galanthus elwesii*
- Crocus (Feb-March)
- *Muscari armeniacum* (March-May)
- Allium (June-July)
- Single flowered Dahlia, especially Bishop series (July-November)
- Colchium (September-October)

Perennials

- Helleborus (Feb-March) e.g., *Helleborus orientalis*
- Comfrey (March-June)
- Pulmonaria (March-May)
- Calamint (May-Sept) e.g., *Calamintha nepeta* spp *nepeta*
- Catmint (May-Sept) e.g., *Nepeta* 'Six Hills Giant', 'Walkers Low'
- Lamium (May-July) e.g., *Lamium* 'Pink Chablis', *Lamium mac.* 'Album', *Lamium galeobdolon*
- Poppy (May-Oct)
- Rock rose (May-July)
- Allium (June-Aug) e.g., *Allium aflatunense*, *Allium christophii*, *Allium giganteum*
- Bellflower (June-Sept)
- Delphinium (June-July)
- Gaillardia (June-Sept)
- Helenium (June-Aug) e.g., *Helenium* 'Moerheim Beauty'
- Salvia (June-Sept) e.g., *Salvia nemorosa* 'Caradonna', 'May Night', 'East Friesland'
- Scabious (June-Sept) e.g., *Scabious atropurpurea* varieties
- Stachys (June-Sept) e.g., *Stachys officinalis* 'Hummelo'
- Viper's bugloss (June-July)
- Aster (July-Oct) e.g., *Aster ageratoides* 'Asran', *Aster* × *frikartii* 'Mönch'
- Coneflower (July-Oct)

- Globe thistle (July-Aug)
- Liatris (July-October) e.g., *Liatris spicata*
- Perovskia (July-Oct) e.g., Perovskia 'Blue Spire'
- Stonecrop (July-Sept) e.g., *Sedum 'Autumn Joy'*
- Verbena (July-Oct) e.g., *Verbena bonariensis*
- Eupatorium (Aug-Sept) e.g., *Eupatorium atropurpureum*
- Heathers (Aug-Sept)
- Perovskia (Aug-Sept)

Wildflower Mixes

- Please only use Irish and pollinator friendly

Fruit & Vegetables

- Courgettes
- Field/ runner beans
- Pumpkins
- Strawberries
- Tomatoes