**Numeracy and Literacy through Gardening**

The Living Classroom is an ideal practical tool for teaching numeracy and literacy. Below are some suggestions of how to use living classroom and how the maths and languages curriculum can be fulfilled.

**Formal curriculum:**

* Maths - Numbers, measuring, recording data, estimations, predictions, active learning
* English/Gaelige - Literacy, spelling, communication, new vocabulary, writing, reading, poetry, storytelling

**Skills ideas for using the garden for literacy:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Spelling** | **New Words** | **English** | **Irish** |
| Use the garden as a spelling test focus, or carry out verbal spelling tests in the garden as you’re working  Compile tool lists of tools you have for the garden and tools you need in the future  Make labels in 2 or 3 different languages to help consolidate spelling of different words | Learn a set number of new words in the garden each week, these could be in English, Irish, Spanish or any language you’re learning with the class  Label as many different habitats, plants and creatures found in the garden as possible. Use old slates, pieces of wood and acrylic paints  Carry out all gardening lessons through Irish (or another chosen language), you may have to learn new words together! | Heritage  Organic  Blossom  Nectar  Pollination  Biodiversity  Habitats  Insect  Honey  Crab apple  Seeds  Pollen  Food miles  Local food  Farmers market  Natural fertilisers  sustainability  Peak oil  Import  Export  Global  Conserve  Orchard | Dúchas  Orgánach  Bláth  Péitseoga  Pailniú  Bitheolaíocht  gnathóg  Feithidí  Meala  Úll fia  Síoltaí  Pailin  Mílte bia  Bia áitiúil  Margadh feirmeoirí  Leasacháin nádúrtha Inbhuanaitheacht  Ola píce  Iompórtáil  Easpórtáil  Ilréimseach  caomhnaigh  Úllord |

**Skills ideas for using the garden for numeracy:**

|  |  |  |
| --- | --- | --- |
| **Predictions** | **Estimations** | **Active learning** |
| Predict how many native species will be present in your school grounds.  How many trees will you need to plant a native hedge in the school grounds?  Site assessment and sketches of the school grounds, recording shape and space  Audit the school grounds, recording data  Guess how many worms live in your school grounds?  If each broad bean that is planted will produce 20 bean pods each containing 6 beans, how many beans will you need to feed the whole class?  Cooking and using the harvest from the garden – how many extra ingredients will you need to make recipes? Use measuring and data recording to weigh the harvest and other ingredients | Estimate the measurements of the school grounds to make a whole school plan  Find out how much timber will be needed to build the required number of raised beds  Find out how much gravel or bark mulch will be needed to fill the pathways around the beds  Estimate how many seeds will be needed to plant enough vegetables to fill the beds, allow for some failure rate!  Estimate a total yield of potatoes from the school garden  Estimate how many sunflower seeds one sunflower head will hold. How many sunflowers do you need to make a bottle of sunflower oil? | Designing the garden  Planning the garden  Making raised beds  Sowing Seeds  Planting Out  Making signs  Making bird and bat boxes  Caring for the garden  Saving Seeds  Harvesting the vegetables  Preparing and cooking the vegetables  Making wildlife habitats  Insect Inspection |

**Useful notes from ‘Learning Through Gardening’ (Levels 1 and 2; available through the Kerry Education and Training Board; written by Jane Savage and Elaine Clifford)**

Learning through Gardening Resource Pack One contains resources to help learners to **remember** basic facts and carry out repetitive task. Learning through Gardening Resource Pack Two will help learners **understand** and learn new skills and knowledge under your supervision.

We tried to make these Resource Pack clear, relevant and practical. It provides tutors with many tools to work with learners to develop skills in writing, numeracy, horticulture, digital literacy and computers. There are ‘Tutor Tips’ with each module referencing further materials, resources and websites that have been used and found helpful. Both Resource Packs are available electronically and in a published version. This means that you can photocopy, print or change worksheets to suit the needs of your learners.

These Learning through Gardening Resource Packs clearly illustrate how literacy tuition can be delivered in a fun, creative manner and can be centred on the interests of the learners. In this instance any learner who is interested in gardening can develop writing skills (writing seed labels), everyday technology and computer skills (recording the ‘Garden Diary’), as well as developing an understanding of quantity and numbers (counting the number of seeds sown!).

The importance of documenting learners’ activities photographically cannot be overstated. Photographs re-kindle memory, spark creative ideas and give the learner a sense of pride in their work. Learners should take lots of photographs of their work in the garden; make collages from the various projects and display these in school.

The tutors can decide how and when to use the resource pack, but they will be dictated to by the seasons – it’s better to concentrate on planning the garden and Health and Safety in the winter, and seed sowing in the spring.

Component worksheets are designed (all available from the Kerry Education Service, examples also on this disc) with adaptation in mind. Tutors are encouraged to amend worksheets to particular learner group’s needs – particularly for Cloze exercises and number work as no two learners in any class are the same. The garden diary and seed sowing record worksheet may be used throughout all levels.

When working the garden, it is really important to keep a record of everything you plant and where, so that you know which plant is which. The garden diary will help learners to do this and they should be encouraged to keep a regular diary of the work they’ve done in the garden through the year. Perhaps the use of sequenced photographs could be included to demonstrate what was achieved in the garden. Visual representation would be useful for learners at levels 1 and 2 and could allow them to verbally reconstruct their activity which could then be recorded on a cassette.

**Resources**

* Discover Primary Science and Maths

<http://www.primaryscience.ie/>

* Kerry Education Service

<http://www.kerryetb.ie/>

* National Adult Literacy Agency

<http://www.nala.ie/>