



Marvellous Marram

Time needed for activity 3 hours +

Location Outdoors or indoors

Context

These activities enable learners to understand how marram grass root systems help to support sand dune development and how the species has adapted to the arid conditions of dune systems.

Natural Resources Wales' purpose is to pursue sustainable management of natural resources in all of its work. This means looking after air, land, water, wildlife, plants and soil to improve Wales' well-being, and provide a better future for everyone.

Background

Marram grass grows readily on sand dunes across the UK. It's root systems help to stabilise sand allowing embryo dunes and semi-fixed dune habitats to form whilst supporting them to withstand erosion from wind and rain. It therefore plays a vital role in dune stabilisation.

For further information please see our [Information note - Marvellous marram](#).

Curriculum for Wales

Humanities

- **What matters** - Enquiry, exploration and investigation inspire curiosity about the world, its past, present and future.

- **What matters** - Our natural world is diverse and dynamic, influenced by processes and human actions.

Science and Technology

- **What matters** - The world around us is full of living things which depend on each other for survival.

Digital Competence Framework

Completing this activity provides opportunities to meet the following strands of the Digital Competence Framework.

Data and computational thinking

- Problem solving and modelling
- Data and Information literacy

Objectives

Learners will be able to:

- understand the importance of marram grass
- understand how the species has adapted to particular conditions
- identify why species live in specific locations in the sand dune system



Resources and equipment

- [Information note - Marvellous marram](#)
- [Activity plan - How do sand dunes form?](#)
- [Resource cards - Set A - Sand dune super species](#)

What to do

1. Ask your learners to read through the [Information note - Marram grass](#) and watch the two short film clips mentioned so that your learners understand how marram grass root systems help to support sand dune development and how the species has adapted to the arid conditions of dune systems. Ask them to write in the style of a recipe how you make an embryo dune
e.g. Take 1 cup of marram grass and add...
2. Discuss with your learners that a sand dune system is a dynamic, changing environment made up of a variety of habitats. To us a sand dune can seem like a harsh and unforgiving place but to those that live there, it is home. They have adapted (changed and become suited) to survive the conditions. What characteristics do plants, animals, birds and fungi need to have to successfully survive a sand dune environment?
3. Use [Resource cards - Set A - Sand dune super species](#) to identify the species that live on the strandline, embryo dune, semi-fixed or mobile dunes. Produce fact files for each and include a labelled photograph or drawing. Explain how each species has adapted to the conditions in which it lives.
4. Ask learners to debate which is better, marram grass or a man-made structure such as a sand fence with fine mesh to trap sand? Start by asking learners to identify the advantages and disadvantages of both.
5. Learners could also be encouraged to do their own research on marram grass.
6. Ask learners to draw a diagram of some marram grass complete with its root system. Use the [Information note - Marvellous marram](#) to make annotated notes around the diagram showing its features and how it has adapted to the conditions in which it lives.
7. Investigate - How marram grass aids the formation of dunes? What is unique about the structure of marram grass? How does marram grass survive when a storm may bury it in sand? Complete the activities on [Activity plan - How do sand dunes form?](#) if these have not already been done.

Suggested key questions

- How has marram grass adapted?
- What is marram grass used for?
- Why is marram grass so important?

Adapting for different needs or abilities

More support

- Give learners a diagram of a piece of marram grass with the labels and ask them to place the labels in the correct position.

More challenge

- Research what the inside of the leaf of the marram grass is like and complete an annotated diagram of it.
- Draw an annotated sketch of marram grass whilst in the field.



Follow up activity/extension

- Produce a similar Information note for Lyme grass
- Research one plant from each stage of a sand dune system, produce an annotated diagram of it with labels explaining its adaptations. How do the species change from embryo dune to mature dunes?

Additional Information

[Activity plan - Sand dunes through time - Newborough Warren \(cyfoethnaturiol.cymru\)](#)

[Resource cards - Sand dunes through time - Newborough Warren \(cyfoethnaturiol.cymru\)](#)

[Resource cards - Set A - Sand dune super species](#)

[Activity plan - How do sand dunes form?](#)

[Resource cards - Sand dune formation](#)

[Resource cards -On your marks, get set dune](#)

[Information note - Coastal sand dunes in Wales \(cyfoethnaturiol.cymru\)](#)

[Information note - Marvellous marram](#)

[Thatching with Marram Grass: Traditional Skills in Scotland - YouTube](#)

[Schools - Dynamic Dunescapes](#)

[A-Z of Dynamic Dunescapes and Sand Dune Conservation - YouTube](#)

(This resource was created by the Dynamic Dunescapes project and funded by the National Lottery Heritage Fund and the LIFE Programme. Please see www.dynamicdunescapes.co.uk for more information)

Learning in, learning about, and learning for the natural environment.

Looking for more learning resources, information and data?

Please contact: education@naturalresourceswales.gov.uk or go to <https://naturalresources.wales/learning>

Alternative format; large print or another language, please contact:
enquiries@naturalresourceswales.gov.uk
0300 065 3000