



Cereals and grasses

Curriculum links:

- **Science** Living things
Environmental awareness and care
- **Geography** Human environments
- **SPHE** Myself and the wider world

Lesson objectives:

To make students aware of the uses for grass and to learn that it can be preserved in the form of hay and silage. To revise the most common cereals and some of their products.

Teacher guidelines

It is suggested that teachers ensure that students are familiar with the vocabulary and concepts introduced in the previous module before starting this lesson.

Keywords and concepts introduced in previous modules:

grass cereals grain wheat oats barley

Grass is the most common plant in the world. It is very important because it is used to feed many animals. Cereals are types of grass, with grains that can be used for food for humans and animals. The main cereals grown in Ireland are wheat, used to make bread, flour and pasta; oats, used to make porridge, muesli and biscuits and barley used in the production of beer. All cereals have an ear, a stalk, grains and leaves.

Keywords for this lesson:

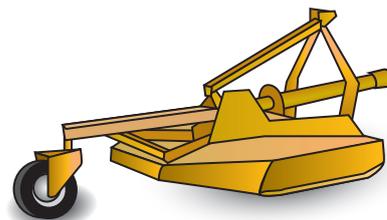
crop hay silage fertilizer manure bales silage
fermented round bales silage pit rice maize (corn)

Did you know?

Grasses enabled cavemen to become farmers rather than hunters! Grasses provide all of our cereal crops and the grazing for domesticated farm animals!

Grass

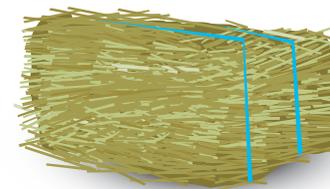
Grass is the most important **crop** in Ireland. Just like humans, grass needs certain nutrients to grow well and is affected by climate, soil type and system of farming. To give grass nutrients, the farmer uses natural **fertiliser like manure** (animal dung) or chemical fertilisers made in factories. Grass growth depends on heat and rainfall and it grows best during spring and summer. This grass is cut and preserved as hay or **silage** to feed animals during the winter.



Rotary mower

Hay

To make hay, grass is cut with a **rotary mower** (pictured above) turned and left to dry in the sun. It is then collected and made into **bales**. Hay making requires fine weather and if the hay is rained upon too often, it cannot be used to feed the animals.



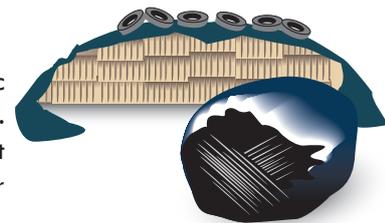
Bale

Remember: Never play near farm machinery or silage pits!

(See Farm machinery safety, page 20)

Silage

To make silage, grass is cut and then baled and wrapped or covered with coloured plastic (usually black), leaving no room for air. Under the plastic, the grass becomes 'fermented'. This preserves the grass so that it can be kept for a number of months. Silage is either kept in large round **bales** that are easy to transport or it is kept in a **silage pit**. Good weather is not required for silage-making. Silage can also be made from cereal crops like barley, oats and wheat.

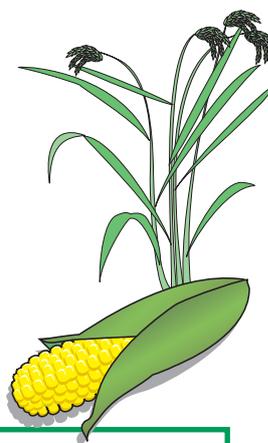


Cereals

Cereals are types of grass with starchy seeds known as grains that can be eaten or used to make other foods. Each cereal plant is made up of ears, stalks and leaves. The main cereals grown in Ireland are wheat, barley and oats. Two other cereals which we eat a lot of in Ireland are **rice** and **maize (corn)**.

Rice does not grow in Ireland but it is an important cereal. Rice needs heat and a lot of water to grow. It is grown in many countries but is generally associated with countries in East and South East Asia where it is grown in fields called 'paddy fields'. This name comes from the Malaysian word 'padi' which means 'growing rice'. Rice can be eaten as part of a main meal or it can be used to make products such as Rice Krispies, rice cakes and rice desserts etc.

Some maize (corn) is grown in Ireland but this is generally used as animal feed. The maize that we eat comes from other countries (imported). There are lots of different types of maize, from sweetcorn to popcorn and maize that can be used to make corn flakes and other breakfast cereals.



Suggested activities:

- Photocopy the activity sheet, on page 47
- Discuss where in the world grass grows and the types of animals that eat grass. Discuss where these animals live in winter and summer and what they eat at these times
- Make your own hay and silage – cut a number of grass samples. Place one sample in a warm dry place and place the second sample in a black plastic bag, squeeze out all the air and seal tightly. Observe the changes in colour, weight and smell over time
- Discuss how most of the food used by humans comes from grass e.g. grass is used to feed animals like cattle, which then provides us with meat and milk (see Cattle, page 6), cereals are used to feed animals and to make food for humans
- Examine various breakfast cereals (packaging) to find out which cereal crops they are made from
- Make an illustrated list of all the products we get from cereals
- Ask students to record their weekly consumption of cereals/cereal products and compare this to recommended guidelines (see the Food Pyramid, page 4 and 5). Create a bar chart to illustrate the eating pattern of each student and discuss ways in which they could improve their diet (i.e. wholegrain)
- Discuss the interrelationship between people, animals and plants and the ways in which we rely on farming to provide us with food (See 'The Irish farmer', page 2)
- For extension material, see Module 4

Learning outcomes:

At the end of this lesson, students should know what grass is used for and how it can be preserved in the form of hay and silage. They should know what rice and maize are and know what their associated products are.

Additional resources:

- www.agriaware.ie



Cereals and grasses

Name: _____

Date: _____

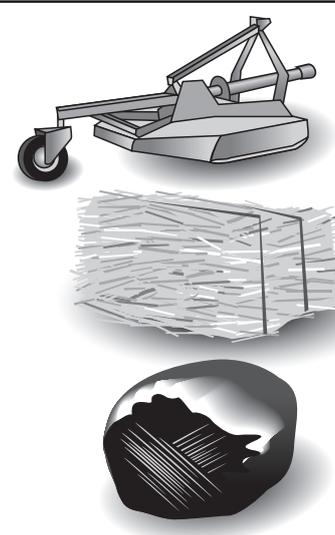
1 Use the words to fill in the blanks:
 need, summer, pickled, cuts, plastic, dry, weather

Hay and silage



Did you know?
 Grass grows faster in Ireland than in any other part of the EU!

Grass grows best in spring and _____.
 The farmer _____ the grass during the summer. The grass needs to _____ out to become hay. The farmer needs good _____ to make hay. To make silage, the grass is wrapped tightly in _____. Silage is _____ grass and will keep for a long time. To make silage, the farmer does not _____ good weather.



2 Tick the correct boxes:



- Grasses with grains that we can eat are called cereals silage fertiliser
- Cereal that we use to make bread, pasta and flour corn wheat silage
- Cereal that we use to make porridge oats rice corn
- A cereal not grown in Ireland wheat oats rice
- Maize is another word for oats corn wheat

*To be used with teacher guidelines, page 14