

## Grassland ecosystems

Explore some of the characteristics and processes in grassland ecosystems. The resource also supports learners in thinking about human-made grasslands, such as lawns and playing fields. Learners are challenged to think about how these spaces are maintained and the potential consequences for nature.

This resource can be used together with the Grassland Plants Survey. Use this resource to help interpret survey results and inform decision-making on how school grasslands are maintained, so they can better benefit local ecosystems.

### Learning outcomes

- know some of the biotic and abiotic factors which produce grassland ecosystems
- describe and explain the potential impacts of human actions on grassland ecosystems
- appreciate the power and limitations of science when making value judgements and ethical decisions

### Key words

**Abiotic factors** - non-living components of an ecosystem

**Biotic factors** - living components of an ecosystem

**Process** - a series of connected steps or events that have some result or effect. Interaction between the components of an ecosystem

**Teaching time** 30-45 minutes

**Suitable for** KS4

### Green skills



#### Identification and ecology

Learners will understand grassland ecosystems and begin to think about grasslands around their site



#### Environmental stewardship and horticulture

Learners will understand some ways human choices impact nature



#### Creative thinking and decision making

Learners will be able to evaluate the potential benefits and harms from different ways of managing grasslands around their site



English countryside, UK

### Subject area

Biology

### What you need

- grassland ecosystems presentation

### Optional

- Grassland profiles handouts

### Related resources

[Habitats: Biotic and abiotic factors](#)

[The Grassland Plant Survey - Expanded](#)

[How to identify soil texture](#)

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## Grassland ecosystems

### Grassland statistics (Slides 3-4)

General facts about grasslands in global and UK contexts.

### Biotic and abiotic factors of grasslands (Slides 5-8)

1. Review of components of an ecosystem.
2. Introduction to the abiotic and biotic factors that produce grassland ecosystems.
3. Learners could research different grassland ecosystems, or use the provided Grassland Profiles to learn about the combinations of biotic and abiotic factors that produce grassland ecosystems.

### Processes and interactions in grasslands (Slides 9-12)

1. Details on grazing and how this process or interaction maintains grasslands.
2. Details on fire and how this process or interaction maintains grasslands.
3. Learners research the processes that cause grasslands to change into other habitats. (See Useful Links for starting points.)

### Grasslands for people (Slides 13-16)

1. Learners consider the differences between grasslands made for people and other grasslands.
2. Learners consider the processes used to maintain grasslands made for people, and how these are similar to or different from natural processes.
3. Learners consider how other living things are impacted by the characteristics of grasslands made for humans, and the processes used to maintain them.

### Reflections (Slides 17-19)

Learners can discuss what they think is the best type of grassland habitat.

- A key takeaway here is that it is necessary to be clear about “best **for what?**” Strong responses here will demonstrate an understanding that different types of grassland will suit different purposes or organisms. Strong responses should also demonstrate understanding that the types of grassland that can form and be maintained in an area depend on the qualities of each site.

Learners could also consider ways to change characteristics or processes that maintain the grasslands around the school to meet the needs of the community better.

Important sub-questions:

- Who and what makes up our school community?
- What needs or wants aren't being met?
- Are there areas maintained for people that aren't being used by people?



Grazing is one of the key ways grasslands are maintained in the UK. Overgrazing can lead to desertification.

### Useful links

[Frontiers for Young Minds - Cracks in the Earth: Why is East Africa Losing Its Soil?](#)

[Frontiers for Young Minds - The Living Meadow: How Mowing Affects Insects and Spiders](#)

[Frontiers for Young Minds - Fire and Grazing: the Secret to a Healthy Grassland](#)

[National Geographic Education - The ecological benefits of fire](#)

[Nature Conservancy: Valuing grasslands - Nature.org](#)

[Royal Botanic Gardens, Kew: Combating desertification - KEW.org](#)

[Plantlife: The grassland gap - plantlife.org.uk](#)