



Citizen Science: From Soil to Sky

Learn how to understand your soil and explore global environmental soil issues by becoming a citizen scientist.

GROW Observatory MOOC on FutureLearn

Link: <https://www.futurelearn.com/courses/grow-from-soil-to-sky>

Authors: Naomi van der Velden, Gerid Hager, Blair McKenzie, Raquel Ajates, Mel Woods, Drew Hemment

Year: 2017



© GROW Observatory



Course Description

Become a citizen scientist and help improve your soil and the environment

Where can you find all sorts of useful and important information about your environment? You might be surprised to know it's beneath your feet, in the soil. On this course you will discover interesting things about your own soil and become part of the new GROW Citizen Observatory European-wide community. You will collaborate with other growers and scientists to discover the impact global soil practices have on major issues like the environment and food growing. Now is the time to make a difference, join us, improve your soil and become a citizen scientist!

What topics will you cover?

- Citizen Science and Fieldwork
- Soils, Growing Sites and Plant Health
- Climate, Temperature and Moisture
- Landscape Representivity and Cover
- Soil Components
- Global Challenges for Soil
- Regenerative Techniques
- Landscape Ecosystems
- The GROW Observatory app

Learning on this course

On every step of the course you can meet other learners, share your ideas and join in with active discussions in the comments.

What will you achieve?

By the end of the course, you'll be able to...

- Describe the type of soil you have, including details such as soil texture and stone content
- Explore how soil health influences plant growth and the environment
- Compare different approaches to growing food, and how these impact soil health and plant productivity
- Apply knowledge of your own growing space to how it connects to the wider landscape and global soil trends
- Describe key characteristics of your growing site, such as canopy cover and land cover
- Explore how you can become a citizen scientist to monitor and improve soil health

Who is the course for?

This course has been created for anyone interested in the environment. You don't need any special experience but it might be of interest to small farmers, community and urban growers, gardeners, land managers and allotment growers, and teachers in environment-related subjects.



Course Outline

WEEK 1: Welcome to the GROW Citizens' Observatory

Welcome to GROW Citizens' Observatory

1.1 Introducing you to the GROW Citizens' Observatory

Video

1.2 What is this course about?

Video

1.3 Welcome to Week 1

Video

1.4 Invitation to take part in research and innovation with GROW

Article

1.5 The GROW Glossary

Article

How do climate, temperature and moisture affect plant growth and diversity?

1.6 Introduction to climatic factors

Article

1.7 Meet Lead Educator Dr Naomi van der Velden

Video

1.8 Meet Lead Educator Dr Blair McKenzie

Video

1.9 The broad scale: climate

Article

Location: From biomes to microclimates

1.10 Biomes and plant adaptations

Article

1.11 Flows and connections with the wider landscape

Article

1.12 The small scale: topography and microclimate

Article

1.13 The climate you experience

Discussion

The GROW Observatory app

1.14 Mobile apps and food growing

Article

1.15 Introducing the GROW Observatory app

Video

1.16 Contributing to GROW's crowdsourced harvesting and planting advice calendar

Discussion

Consolidate your learning!



1.17 Feel for yourself

Discussion

1.18 Week 1 Quiz

Quiz

1.19 Week 1 summary and a taste of Week 2

Article

WEEK 2: Getting to know your soil

What is soil?

2.1 Welcome to Week 2

Video

2.2 Soils are amazing

Article

2.3 Soil horizons: How do soil components affect your growing?

Article

2.4 Landscape representativity: selecting the right spot

Article

2.5 Observing your soil horizons

Video

Understanding your GROWing site

2.6 Your site, your landscape, your observations

Article

2.7 Land use and land cover

Article

2.8 GROW your knowledge | Land cover

Quiz

2.9 Canopy cover

Article

2.10 Estimating canopy cover

Poll

2.11 Slope and landscape position

Article

What is soil texture and how does it affect plant growth and moisture?

2.12 Soil textures

Article

2.13 Preliminary tests for selecting a representative sample of your soil

Article

2.14 How to determine soil texture: the touch test

Video

2.15 Soil texture maps

Article

2.16 Share your soil texture results

Poll



2.17 Comparing your results

Article

Consolidate your learning!

2.18 Week 2 Quiz

Quiz

2.19 Summary and what to expect in Week 3

Article

WEEK 3: GROWing soil

The importance of soil

3.1 Welcome to Week 3

Video

3.2 Soil and civilisations

Article

3.3 Your cultural meanings of soil

Discussion

3.4 Overcoming the global challenges facing our soils

Article

3.5 Trendspotting

Discussion

Regenerative growing in agriculture and gardening

3.6 1000 growers = 1000 techniques!

Discussion

3.7 First things first: Prepare your soil

Article

3.8 Creating fertile soils

Article

Arranging your growing space and crops

3.9 Arranging your growing space and crops

Article

3.10 Arranging your growing space and your crops II

Article

Test your knowledge

3.11 Week 3 Quiz

Quiz

3.12 Summary and what to expect in Week 4

Discussion



WEEK 4 - Regenerate soils while growing food, and discover citizen science and soil data art

Regenerative growing in agriculture and gardening: Maintaining your growing space

4.1 Welcome to Week 4

Article

4.2 Meet a GROWer

Video

4.3 Covering your soil to increase protection & fertility

Article

4.4 Making compost for soil enhancement

Article

4.5 Managing water in your growing site

Article

4.6 Try a polyculture experiment in your growing site

Article

Citizen science: enhancing knowledge and data art

4.7 Citizen science projects contributing to soil research

Article

4.8 Are you a citizen scientist?

Article

4.9 Soil moisture and citizen science

Article

4.10 Why is the GROW Observatory collaborating with citizen scientists to monitor soil moisture?

Article

4.11 Citizen-generated data art: By the Code of Soil

Article

Your GROW Future

4.12 Week 4 Quiz

Quiz

4.13 Taking part in citizen science with the GROW Observatory

Video

4.14 What next? Be part of the GROW Observatory

Article

Keep in touch and be inspired by soils and citizen science

4.15 Keep in touch and be inspired!

Article

4.16 Congratulations!

Discussion