



PLANET
CHANGE

Online Teacher Training

Workshop 1 - Introduction to sustainability
and Space in VET education

Workshop 2 - Implementation of sustainability
in VET education



Co-funded by the
Erasmus+ Programme
of the European Union

Planet change is the short name of an EU Erasmus+ project aimed at VET teachers and their students. With small activities, the idea is to create awareness about sustainability and acquire 21st century skills. All this is done in a technical context, mostly from space technology.

www.planetchange.eu



1. Summary of the training

The project Planet Change aims to improve the sustainable development education curriculum for 16+-year-old students using space science as a context and improve awareness regarding the variety of career paths in the field of space. In the countries of the consortium onsite trainings for VET teachers have been organised. To make sure also VET teachers outside the consortium can learn about the project and the developed activities an online training has been developed and carried out. The developed trainings materials are published on the website to be used to train VET teachers among other countries as well. In this document all information needed has been written down.

The online training consist of 2 workshops of 90 minutes each. It is recommended that there is maximum of 1-3 weeks in between them. The first workshop introduces the project, its aims and the developed resources. One resources is presented more in depth. The second workshop will go deeper into two resources.

Aim

Introduce participants with the activities for VET schools that are developed in this project and providing them with the resources needed for this.

Target group

- Primary target group: VET teachers from countries outside the consortium countries and VET teachers from countries within the consortium who are not able to attend the local onsite trainings.
- Secondary target group: stakeholders in the field of VET schools, space education and/or industry.

Register

We recommend that an online form is used to register.

Communication:

- Email with invitation, social media post with invitation.
- Conformation email with program and link about a week prior to be sent to al registered persons.
- Email to be sent after the training with link to website, links to the developed resources and link to online evaluation form.



2. Description of the training

The online training consist of 2 workshops of 90 minutes each. Below the descriptions of both workshops.

Workshop 1 - Introduction to sustainability and Space in VET education

Program

Time	Part of the online training
15.00 – 15.15	Welcome, introduction of trainers and participants, introduction project Planet Change
15.15 – 15.30	Overview of available resources (themes, activities, app, website)
15.30 – 16.15	Activity Space for crop optimisation (including browser tutorials)
16.15 – 16.30	Reflection

1 person will keep track of questions in the chat and keep on eye on the timing.

1. Welcome

- Nice to see you all.
- Introduce yourself and the other trainers.
- After the workshop you will receive an email with the information from the training. If you have questions, feel free to write them in the chat.

2. Short introduction of the project

- Explanation project: Planet Change is an EU project aimed at VET students and teachers.
- The aim is to raise awareness about sustainability and train the students in 21st century skills in the context of space technology, and give the students a broader vision on career possibilities in space industry.
- In the project 18 activities about sustainability and space have been developed.

3. Introduction of participants

- Give the participants the opportunity to introduce themselves: you can use an online application for this, for example canva. See the annexes for an example.
 - Please take a yellow virtual paper, write on it if you work in education, sustainability, space or something else.
 - Write on it from which country you are
 - Move the yellow paper to your country.
- Comment on where the participants are from and something about their professions.



4. Activities

- 18 activities in the context of sustainability and space technology have been developed. All available in English and in the languages Dutch, Portuguese, Spanish, Norwegian, Italian 10 activities.
- The activities use earth observation data.
- The students learn how a concept works in space with applications on earth.
- Each activities addresses a theme, some themes have more activities.

5. Website

- All the activities can be founded on the project website; www.planetchange.eu
- Multimedia: all themes have also multimedia activity. The multimedia is available in English and in May/June in all the languages from the consortium. It is free and can be downloaded from the website.
- In the next slides I will gave you an idea of the activities inside this application. In the theme of Energy efficiency there are 3 activities
 - A quiz
 - A simulation about Solar panel alignment
 - A game 'find the sun'. Game: so you see the solar panel and the output of the solar panel. The aim of the game is to find the sun. You can adjust 3 variables: the orientation of the solar panel, the type of solar panel, the size of the hole through which the light falls.

6. Deeper into the activity Space for crop optimisation

- [Space for crop optimisation](#)
- Duration 2 x 45 minutes
- European qualifications level: 3-4
- Topic: agriculture and climate change
- Parts of the activity
 - Introduction
 - Part 1: Satellites eyes help from space
 - Part 2: Satellites for optimising agriculture: How?
 - Part 3: Reflection and next steps
 - Part 4: A possible future in the space sector
- Tutorials
 - [Google Earth Pro](#)
 - [EO browser](#)
 - Copernicus browser

7. Reflection

- You have heard a lot about some of the activities. We would like to know how you think these activities good work for you. In the canva you can comment on that.
 - How would you like to implement space technology in your activities?



- How would you like to implement sustainability in your activities?
- What aspect of the training would you like to implement in your activities?



Workshop 2 - Implementation of sustainability in VET education

Program

Time	Part of the online training
15.00 - 15.15	Welcome, introducing of participants and trainers, recap online trainings workshop 1, introduction of the project, short overview activities and resources
15.15 - 15.35	Introduction to two of the developed activities Activity Air pollution (NEMO), 10 min Activity Monitoring the health of the oceans (ASE), 10 min
15.35 - 16.00	Discussion in groups (3-4p) What did you like about the activity? How can you implement the activity Air pollution and/or Monitoring the health of the oceans in school? Discuss positive aspects and challenges What is the value of the activity Air pollution and/or Monitoring the health of the oceans for (your) students?
16.00 - 16.15	Sharing points of the discussion
16.15 - 16.30	Reflection and ending of training workshop 1 or 2 questions through teams poll

1 person will keep track of questions in the chat and keep on eye on the timing.

1. Welcome

- Nice to see you all.
- Introduce yourself and the other trainers.
- After the workshop you will receive an email with the information from the training. If you have questions, feel free to write them in the chat.
- Ask the attendees to introduce themselves.

2. Short introduction of the project

- Explanation project: Planet Change is an EU project aimed at VET students and teachers.
- The aim is to raise awareness about sustainability and train the students in 21st century skills in the context of space technology, and give the students a broader vision on career possibilities in space industry.
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3. Activities

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- The activities use earth observation data.



- The students learn how a concept works in space with applications on earth.
- Each activities addresses a theme, some themes have more activities.

4. Website

- All the activities can be founded on the project website; www.planetchange.eu
- Multimedia: all themes have also multimedia activity. The multimedia is available in English and in May/June in all the languages from the consortium. It is free and can be downloaded from the website.

5. Deeper into the activity Air pollution

- [Air pollution](#)
- Structure of the activity
 - Introduction
 - Use earth observation data to map and monitor gas emissions
 - Analyse the source of the emissions
 - Map your own contribution to emissions
 - Think of green alternatives
 - Compare with your classmates
- Compare the NO₂ in the Netherlands on two dates
- Categories of pollution sources
 - Gasoline-burning vehicles and engines
 - Electricity from fossil fuels
 - Activities that release particles in the air
 - Products that release particles in the air
 - Consumption and daily habits
- Daily life

Table 2. Your life

Now it's your time! Fill in the table (duplicate the table as necessary, depending on the number of days you are going to register)

Date:						
Time	Action	Description of action	Polluting action and source of the pollution	Pollutant points (+3, +2 or +1, depending on the action)	Sustainable alternative points (-3, -2 or -1, depending on the instructions)	Total of points (per line)
Total of points						



Table 2. Your life

Now it's your time! Fill in the table (duplicate the table as necessary, depending on the number of days you are going to register)

Date:						
Time	Action	Description of action	Polluting action and source of the pollution	Pollutant points (+3, +2 or +1, depending on the action)	Sustainable alternative points (-3, -2 or -1, depending on the instructions)	Total of points (per line)
6.00 AM	Taking a short, hot shower	The system used to heat the water is fueled by gas.	Heater: used gas Time: short shower	+3 for the gas	-2 for the time	+1
7.00 AM	Cooked eggs for breakfast	The pan was heated on an electric cooktop. Eggs were transported by car.	Cooktop: uses electricity Transport: by car	+3 for the car	-3 for the electric cooktop	+0
8.00 AM	Keep my laptop on without using it	The laptop was kept on without using it. I have also printed a lot of documents	Laptop: uses electricity Printer: uses electricity and paper	+2 for the laptop +2 for the printer		+4
Total of points						+5

- What can I do to reduce my emissions?
 - The system used to heat the water is fuelled by gas
 - I can look into sustainable alternatives.
 - I can take colder showers
 - The pan was heated on an electric cooktop. Eggs were transported by car
 - I can look into other ways to get eggs. Maybe from a local farmer
 - The laptop was kept on without using it, I have also printed a lot of documents
 - I can turn off my laptop when I'm not using it
 - I can use digital copies of my documents or print double-sided.

6. Deeper into the activity Monitoring the health of the oceans

- Monitoring the health of the oceans
 - Duration 2 x 45 minutes
 - European qualifications level: 3-4
 - Topic: climate change
- Structure
 - Introduction
 - Ocean currents
 - Gulf stream
 - Sea ice
 - Part 1 Preparations
 - Part 2 – Feeling the heat
 - Part 3 – Sea ice

7. Discussion in groups

- What did you like about the activity?



- How can you implement the activity Air pollution/ Monitoring the health of the oceans in school?
Discuss positive aspects and challenges
- What is the value of the activity Air pollution/ Monitoring the health of the oceans for (your) students?

8. Reflection

- You have heard a lot about some of the activities. We would like to know how you think these activities good work for you.
- Make a poll with some of the evaluating questions, for example:
 - To what extent do you think the activities will enrich classroom practise (1-5)?
 - How likely is it that you will use one or more activities? (1-5)?



3. Additional materials

Workshop 1

- www.planetchange.eu
- [Space for crop optimisation](#)
- [Google Earth Pro](#)
- [EO browser](#)

Workshop 2

- www.planetchange.eu
- [Air pollution](#)
- [Monitoring the health of the oceans](#)



Annex Example of invite text

Space in VET education? Yes, please!

For all VET teachers who are looking to include some practical, space related topics in their lessons, join us online on [insert dates].

- Workshop Introduction to sustainability and space in VET education.
- Workshop Implementation of sustainability and space in VET education

There is a possibility to attend the first, second or both workshops. During the first workshop you will learn more about sustainability and space and its place in VET education, as well as participate in the short activity *Space for crop optimisation*. During the second workshop you will interact with other teachers and two other activities will be introduced.

Interested? Register yourself here: [link to online registering form]

Have any additional questions or do you want more information? Mail us at [email address of organising organisation and/or person]



Annex Example of canva to introduce the participants

On the Canva, let us know:

- Where you're from
- If you work in education, sustainability or space or

Canva.com

