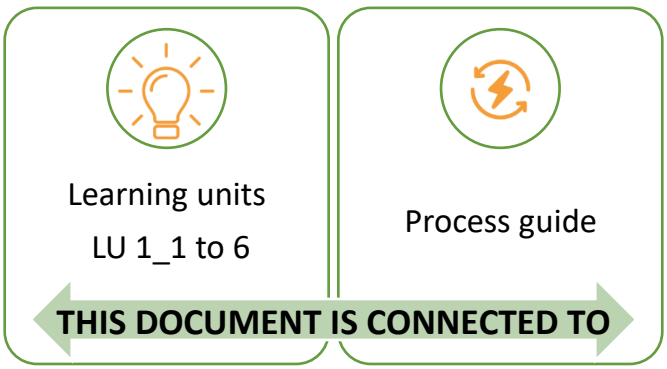
Learning unit 6

Excursions



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Learning unit 6 – Learning Plan

Excursions

Excursions are a welcome change from everyday school life for students, because in addition to imparting knowledge on the topics of climate, renewable energy and the construction of the solar plant, the aim is to sensitise students to a sustainable energy economy in an experience-oriented way. When planning excursions, there are of course some preparations necessary.

PREPERATION

WHEN?

The first step is, obviously, finding a date, which must be suitable for both the school (lesson times, etc.) and the chosen excursion destination (opening hours). For a Solartown project it is of course beneficial to arrange the excursion as part of the project or as soon as possible.

POSSIBLE EXCURSION DESTINATIONS

The possible excursion destinations depend strongly on the local possibilities. The following list of possible excursion destinations is therefore only intended as a suggestion. The visit of companies or plants working in the field of renewable energy or energy efficiency is particularly suitable in the context of the Solartown project.

1. EXCURSIONS ON THE SUBJECT OF SOLAR ENERGY

- **Inspection of already existing solar collectors**

Does the municipality already have solar thermal plant? It can be quite exciting to learn about the way solar collectors are used and their efficiency.

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- **Companies that sell and install photovoltaic systems**

Companies that sell and install photovoltaic systems can teach students a lot about how to generate electricity by using solar energy.

- **Photovoltaic system operators (companies or private individuals)**

Companies or private individuals who use a photovoltaic system themselves can share their experiences with this technology very well.

2. EXCURSIONS ON THE SUBJECT OF BIOMASS

- **Pellets production company**

Is there a company nearby that produces wood pellets for heating systems? In addition to sun, wind and water, biomass is an important part of the renewable energies.

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- **Wood chip production company**

  The production of wood chips is impressive. The importance of lo-kale agriculture for energy production can be emphasized quite well here.

- **Wood chip heating plant (local or district heating)**

  Wood chip heating plants are also exciting excursion destinations. In many municipalities, district heating also supplies the school, which makes it possible to directly link up with the topic of "energy consumption in schools".

3. EXCURSIONS ON WIND ENERGY

- **Visiting wind power plants - Wind farms**

  The visit of wind farms or wind power plants is very impressive for many students. Here, the topic of efficiency in energy production can also be covered very well.

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4. EXCURSIONS ON THE SUBJECT OF HYDROPOWER

- **Hydroelectric power station in the municipality or region**

In some regions, such as Austria, hydropower plants are important energy suppliers.

- **Mills that are operated with water power (ship mills, etc.)**

The old and original form of energy production with water is often not known to many students.

5. EXCURSIONS ON THE TOPIC OF MOBILITY (CLIMATE PROTECTION)

- **Electric mobility company**

Electric mobility is an exciting climate protection topic for pupils.

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- **Electric filling station**

It is interesting for students to find out where there are electric filling stations in the municipality/region and how they can be used.

6. OTHER EXCURSION DESTINATIONS

- **Companies that use their waste heat**

Many companies do not let their waste heat out of their plants unused, but feed it into the local district heating network. Others use it internally for other work processes.

- **Wastewater treatment plant operators (biological/conventional)**

Here it is useful to point out that chemistry can often be replaced by bacteria or microorganisms.

- **Company that offers renewable energy supply e.g. PV systems, geothermal energy systems**

Geothermal energy is another way to use energy in an environmentally friendly way. Therefore, it is of course interesting for the students to learn more about it.

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- **Energy roads, energy hiking trails, eco-parks**

Parks, trails or roads on the subject of energy offer suitable excursion destinations.

- **novative buildings: passive houses, low-energy houses etc.**

Innovative buildings that produce some of the energy they need themselves are unknown to many students and are ideal for an excursion.

- **Bioenergy powered organic vegetable greenhouse**

Greenhouses that produce their own energy with photovoltaics, geothermal energy, etc. are very impressive and an outstanding example of climate protection measures.

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- **Heating rooms and heating control systems of the school or other facilities**

How does the school or another building in the municipality get its energy supply? An "excursion" to the school's boiler room and an inspection of the heating and heating control system offers a simple and good opportunity to discuss the topic of energy and energy consumption in your own environment.

- **Power supply of the school**

Many rooms in the school need to be supplied with electricity. The school's fuse boxes are correspondingly large and extensively wired. Although many pupils know a fuse box from home, it can be very interesting for them to have it explained by a specialist.

TRANSPORT

Is the excursion destination within walking distance or does transport have to be organised? It must also be taken into account that costs may be incurred. Who covers the transport costs? The school? The municipality? The parents?

CATERING

Depending on the duration of the excursion, food and drinks should not be forgotten.

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Learning unit 6 – Teaching plan

Excursion

During the excursion the young people learn about the energy supply in their region or about companies dealing with renewable energies, etc., depending on the excursion goal. Supervision by teachers and - depending on the size of the group - by parents, if necessary.

TIME: Depending on the type of excursion and the distance of the destination

TYPE OF LESSON: Educational excursion

METHODIOLOGY:
Recording the information with the help of the worksheet (see below), photo protocol, video creation, preparation of presentations, etc.

LESSON GOALS:

Subject of the project: Get information about the chosen excursion destination

Students can learn, for example:
- how the energy supply in their school/municipality/region looks like
- which companies deal with renewable energies
- to record the information received (worksheet, photograph, films, etc.)
- ask questions to gather information

MATERIALS: Worksheets, pens, photo or video camera

INTRODUCTION/PREPERATION (20 – 45 minutes):

The students receive some initial information about the chosen excursion destination and what it has to do with the Solartown project.
Discuss with the class how the excursion should be recorded.
Possible would be:

1. Filling in the worksheets (see below)
2. Writing an article for the newspapers, social media, etc.
3. Preparing a presentation on the topic
4. Creating a photographic record of the excursion
5. Creating a video about the excursion

Depending on the option selected, the required materials must be provided.

- Copies of worksheets, writing materials, pens
- Camera, charged batteries, memory card, possibly a tripod, ...

It should also be agreed in advance who will thank the excursion leader on behalf of the school for the guided tour.

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EXCURSION:

The excursion destination is ideally reached in an environmentally friendly way and on time.
The contact person with whom the appointment has been arranged usually receives the students at the entrance of the company. If this is not the case, make sure you have the contact details and telephone number ready so that you don't have to spend an unnecessary amount of time asking around in large companies.

All students have discussed their tasks and questions with the teacher during the preparation.

While the excursion leader guides through the company, the students document and record everything they see, hear and ask in the chosen way.

If the questions get a little bogged down, the teachers can always help.

At the end 1 or 2 students say "thank you" on behalf of the school/class for the interesting tour through the company.

The teacher motivates and supports pupils during the tour.

Back in school, the data, information and worksheets are analysed.

CONCLUDING ASSESSMENT (5 – 10 minutes):
At the end the students should discuss which part of the excursion was particularly exciting for them.

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Learning unit 6 – Work sheet

Excursion

Date: _____

Excursion destination: _____

Excursion location: _____

Owner/operator: _____

Who guided you through the company? _____

Type of business:

☐ Production facility ☐ Service company ☐ Trading company

_____

☐ Solar energy ☐ Biomass ☐ Wind energy

☐ Hydropower ☐ Mobility ☐ Other

_____

What is produced/provided/traded? _____

Number of employees: _____

Historical information about the company:

Production process / How is the service provided?

LEARNING UNIT 6: WORKSHEET

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Who are the suppliers / buyers / customers?

Technical data:

Production of _____kWh energy

Supply of _____households

Other interesting facts:

The excursion was for me:

☐ interesting ☐ informative ☐ exciting

☐ nothing new ☐ boring

I particularly enjoyed:

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Contacts:

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KPE Pertouliou Trikkeon, Greece

Website: https://blogs.sch.gr/kpepertoul/

VseUK Institute, Slovenia

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