| EURONET Project Unit One | Introduction and Expedition |
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**Developed by UFU**

Preparation: - Ask the caretaker (or the person running the heating system) to join you about an hour after you started
- bring a thermometer which measures very quickly and is easy to read

| Step | Content | Method | Aim | Time/remarks |
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| 1. | Kick off:<br>Introduction of the 50/50 Project | Ask the whole class<br>What do you already know about the Project?<br>Why is it important to save energy? | Introduce the project<br>Create common understanding | |
| | | *If you have the consumption figures of the school,*<br>Let the class guess:<br>- how much electricity and heating energy is used in the school in one year<br>- how much money is spend on this | Add a practical aspect<br>Create additional motivation | Even though primary school pupils have no full understanding of these figures, the high numbers will not fail to impress them as they will compare them with their pocket money or something else from their everyday life |
| 2 | Introduction of the concept “Energy” | Ask the whole class<br>- What do you know about energy?<br>Where does it come from? Where is it used?<br>Note the answers on the blackboard<br>Discuss the results with the class | Discuss the Concept “Energy”<br>Distinguish forms, usage und sources of energy<br><br>Focus on the sources and establish understanding that by burning fossil fuels CO2 is emitted | *We sort what is coming up into three columns on the black board using differently coloured chalk- red: fossil and atomic energy*<br>*Green: renewable energies*<br>*White: ways to use energy* |
| 3 | Introduction of “Green House effect” | Development of illustration of the green House effect on the blackboard (appendix 1) | Create understanding of role of CO2, Green House effect and necessity to reduce CO2 emissions | |

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| | | | | *Depending on the background knowledge the amount of time you need is different*<br>*In average it takes us about one hour to get here.* |
| 4 | Expedition<br>"Energy in our school"<br><br>Stage 1 – setting out | Tour of the school building<br>- Introduce the caretaker as the expert for the heating system of the school<br>- Tell the kids they are going on a scientific research trip and ask what this means | Kick off to practical part: Hands-on experience in the school building | *As the expedition is with the whole class all have to be organised and quiet to be able to fulfil the tasks and not to disturb the others)* |
| | Stage 2 - Heating cellar | What is the source of heating energy (gas pipes, district heating pipes, heaps of coal…)<br>How does the radiator work? What measuring instruments are to be seen? What do they measure and how do they work? Which pipes take the heating energy into the building? What is in them? Are they insulated? | Find out, how the energy gets into the school | *Very often not all pupils can hear the caretaker because of radiator noise or other reasons – let those kids who heard the caretaker well explain what they heard to those standing in the back.* |
| | Stage 3 – Outside the school building | Are there electrical lights switched on outside the school even though it is not dark? – count the lamps that exist and that are switched on<br>Is the school building insulated?<br>How many doors does the school building have? Are there open doors even though it is | Find out how energy leaves the building | *Ask one or two individual kids to keep in mind certain results during the following stages.* |

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| | | class time?<br>How many windows are open?<br>Anything else, that is relevant for energy use?<br>Measure the outside temperature | | |
| | Stage 4 - Staircase/corridor | Check the temperature of the staircase/corridor<br>Check the radiators on staircase/in corridor: Are they hot? Can they be adjusted? | Find out whether it is too warm in these areas | |
| | Stage 5 - Staff room | How many lights are switched on? Are there any teachers in the staff room?<br>What is the temperature in the staff room?<br>How many radiators are there? How are they adjusted?<br>Are there any open windows? What about the radiators under the open windows – are they switched on or off?<br>What other electrical gadgets are there? (from photocopier to coffee machine)<br>Are they switched off? Or on stand-by? | find out about the energy sins of the teachers<br>(also there are more electrical appliances) | *We always visit the staff room during the initial energy tour, so that the whole class (all the kids are curious about the staff room) gets the opportunity to see it.*<br><br>*Either here or later in the class you explain, what the numbers on the thermostat mean (in Germany 3=20°C which is the desirable temperature)* |
| | Stage 6 - Own class room | How many windows (open)?<br>What is the temperature in the room?<br>What about the radiators? Are they adjustable?<br><br>How do you air the room? Leaving the windows open a little for a long time? | Check the immediate surroundings | |

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| | | Or do you open the window(s) wide for a short time? What is the better method and why?<br><br>What happens, when you open the window and the cold air falls on the thermostat?<br>(the heating heats up automatically, which makes the room even hotter) –<br>What is the way out of this circle? - Turn the heating completely off when you open the window. | | |
| 5. | Saving the results | Ask for the results of the measuring and counting (you may write them at the black board)<br>The pupils fill in the worksheet (appendix 2) | To save the results for later | |