

ENERGY DETECTIVES

Authors:

Stefan Haering and Christiane Bolte-Costabiei

SUMMARY

Students in both classes will form cross-class groups and search for “energy guzzlers” and unnecessary energy use in their daily lives. They will document these excessive uses of energy and discuss them with each other online (or asynchronously). Afterwards, they will plan small campaigns to make others aware about the topic of energy efficiency.

GOALS

Students will learn what “energy guzzlers” there are in their own surroundings.

Students can plan campaigns about reducing energy use.

LANGUAGE GOALS

Students can make a list of things that are especially important to pay attention to regarding energy use.

Students can discuss how people can avoid unnecessary energy use.

Students can create an action plan.

DURATION

3-4 Weeks

LANGUAGE

English

MATERIALS

Worksheet for all Students:

Exchange Task:

ENERGY DETECTIVES

DESCRIPTION

Teachers will introduce the project with the research provided on the worksheet. Then, students will record areas in which energy is used in their daily lives (e.g., in the kitchen, at school, etc.), within their own classes. Students will then form groups across classes.

Each group will choose an area to investigate, and document their investigation with pictures. For example, one group might be responsible for calculating how much TV they watch in a week, and calculate how much that costs.

Students will meet throughout the research process to exchange their results. They will compile their findings and present them online.

After all groups have read the others' results, the partner classes will meet up, ideally synchronously online. They will plan campaigns for people in their area that deal with bringing awareness to energy efficiency. The campaigns can, for example, take place at their own school or in their community. After the campaigns have been carried out, the partner classes will exchange once again and report on how their campaigns went, and if they have observed any results that show that their campaign was successful.

TEACHER PREPARATION

Teachers will consider a topic introduction. For example, they can complete the research and activities presented on the worksheet.

Introduction with an ecological footprint and country comparison:



https://www.umweltbildung.enu.at/images/doku/oekologischer_fuabdruck_quiz_enu.pdf



<https://plattform-footprint.de/quiz/>



<https://projectgreenschools.org/energy>



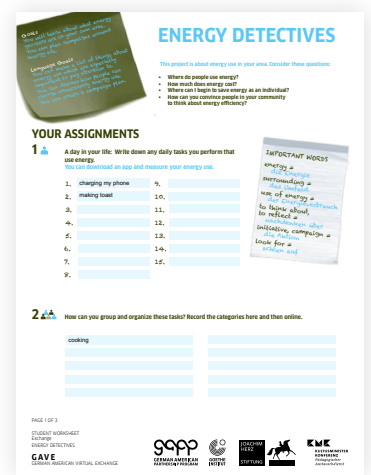
<https://www.footprintnetwork.org/>



https://data.footprintnetwork.org/?_ga=2.159000186.1767761139.1598997108-1004342570.1598997108#/



<https://en.unesco.org/greencitizens/stories/eco-schools-programme>



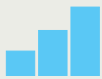
MEDIUMS

Teachers will use the established communication channels between themselves and their students.

They will choose the tool where the results of the investigation about energy use can be reported. The tool must allow students to upload pictures and write collaboratively, e.g., Wiki, Blog, Sway, or others.

Students will use an online conferencing tool to meet with one another.

DIFFICULTY



TEACHER PREPARATION *continued*



<https://www.umweltgemeinde.at/energy-checker-methoden-zum-thema>



<https://www.ecoschools.global/>



<https://www.wissenleben.de/wissen/informationen-f%C3%BCr-die-schule/projekte/>



<https://www.klimanet.baden-wuerttemberg.de/ideen-und-aktionen-fur-den-unterricht>

Teachers will divide the students into groups or allow them to do it themselves.

They choose the tool within which the documentation will take place.

They look for a medium within which students can document their findings.

They choose a conference tool.

They choose apps where students can conduct measurements, for example:



<https://www.electricchoice.com/blog/green-apps-track-energy-usage/>

They support the groups in carrying out the campaigns.

They initiate and motivate the inter-class exchange.

Material

See the Document *OVERVIEW ABOUT APPS AND APPLICATIONS*.

CLASS INTRODUCTION

Teachers will send their students information about the process, duration, and content of the project. Teachers will explain the task to the students.

Material

Worksheet for All Students: Exchange Task *ENERGY DETECTIVES*

EXCHANGE

Students will start by conducting research on their own energy use, as described on the worksheet. Teachers can help them complete this and can also start introducing the topic to the classroom with additional ideas or website content.

The students will carry out their own research or surveys in their community, for example, by asking their neighbors questions about their energy use.

Within their own class, they will list areas where energy is used (e.g., when cooking, at school, etc.). After the students have finished collecting the data within their own class, the teachers can compile the information in a single location accessible to both classes.

After this, teachers will create cross-class groups. The teachers will decide if the groups can decide on an area of energy use to focus on or if they will have an area assigned to them.

Then, students will research their areas of energy use and document everything in writing and pictures. Students will document their findings in the tool selected by their teachers.

While researching, the students will periodically meet with their group and discuss their findings. Teachers should ensure groups meet regularly and provide support when needed.

Each group will document their results online.

After all the groups have read the results of the other groups online, the partner classes will meet, when possible in an online synchronous session. Here, they will create campaigns to bring awareness to the topic of energy efficiency within their communities.

A few weeks after the actions have been implemented, the partner classes will meet again to discuss their results. Before the final discussion, they will have attempted to measure the success of their campaign, for example using surveys.

REFLECTION

Online or in the classroom, students will reflect on:

- how the students cooperated with peers in their class,
- what they liked about the project,
- what was special about working on it together with their partner school,
- which sustainability-related causes they may like to pursue at a later time.

For this reflection, there are key questions available.

See the document *REFLECTION QUESTIONS FOR STUDENTS*.