

# PERSONAL CONSUMPTION AND CLIMATE CHANGE

Images and Objects  
ACTIVE METHODOLOGY  
TOOLKIT 2



## Personal Consumption and Climate Change

Images and Objects

Active Methodology Toolkit 2

First published in 2011 by

PERL – Partnership for Education and Research about Responsible Living

Hedmark University College, Hamar, Norway

<http://www.perlprojects.org/>

ISBN 978-82-7671-811-9



Education and Culture DG

Lifelong Learning Programme

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



This resource is part funded by the Department of Education and Skills, Ireland, as part of its contribution to the UN Decade of Education for Sustainable Development 2005- 2014.

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**Photographs:**

All of the photographs in this toolkit have been taken by different members of PERL Work Group 4a (Active Learning Methodologies). Individual members are acknowledged on each photograph.

**Acknowledgements:**

PERL Work Group 4a (Active Learning Methodologies) would like to thank Victoria W. Thoresen, PERL Project Leader, and Associate Professor, Hedmark University College, Norway, for her support in the development of this resource.

**Supported by:**



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# INTRODUCTION

The Partnership for Education and Research about Responsible Living (PERL) is a partnership of educators, researchers and practitioners from more than 120 institutions in over 50 countries. The partners of PERL include universities, research institutes, international organisations, national and local civil society organisations and some small and medium enterprises.

PERL is based on six years of work previously carried out by the Consumer Citizenship Network (CCN). PERL aims to advance education for responsible living by focusing on consumer citizenship, education for sustainable consumption, social innovation and sustainable lifestyles.

PERL deals with:

- research and debate on responsible living
- creating teaching methods and materials
- encouraging and giving visibility to social innovation
- providing recommendations based on its experience
- influencing policy.

This resource entitled 'Personal Consumption and Climate Change: Active Methodology Toolkit 2' is the result of contributions, reflections and development work carried out by the PERL Work Group 4a (Active Learning Methodologies). The toolkit is part of a series of 'toolkits' on the theme of sustainable development and responsible living.

The toolkit is designed to support and encourage teachers, tutors and lecturers to integrate some of the concepts of sustainable development into teaching and learning. It focuses in particular on using photographs and a range of active teaching and learning approaches and strategies to explore the themes of:

- personal consumption
- climate change
- responsible living.

## STRUCTURE OF THE TOOLKIT

The toolkit is divided into four main sections:

- an introduction to three areas of focus within sustainable development: personal consumption, climate change and responsible living
- an introduction to active teaching and learning methodology, including the promotion of questioning, critical thinking and action
- a description of a selection of practical teaching and learning activities to support the themes of the toolkit
- a bank of photographs to support the activities of this toolkit and others in the series.

The activities and images selected for the toolkit use examples primarily from industrialised countries. Alternative images, more appropriate to other parts of the world can be substituted.



# PERSONAL CONSUMPTION AND CLIMATE CHANGE

## PERSONAL CONSUMPTION

Personal consumption is the process by which goods and services are put to use by individuals.

Sustainable consumption considers issues that go beyond us as individuals when we shop for goods and services and includes both the ecological impact of what we buy, such as climate change and resource usage, as well as the equity, human rights and political dimensions of sustainability in the production and consumption process.

The Sustainable Consumption Institute (University of Manchester) suggests that we look at four aspects of a purchase when evaluating sustainable consumption:

- the production of the item
- transport and retailing
- usage
- disposal.

Lifestyle includes all aspects of the way we live our lives, such as choices related to food, clothing, personal hygiene, home design, travel, and leisure time. These choices allow us to fulfill our needs and aspirations and signal our social position to others. Since many of the signals are mediated by goods and services used, lifestyles are closely linked to resource flows in society.

A deeper and broader interpretation of sustainable lifestyles is responsible living. Here the emphasis is not only on knowledge and applying knowledge conscientiously for the betterment of our own quality of life without jeopardizing that of others, but actually being proactive in bettering the quality of lives of others directly or indirectly.

We need to adopt values and attitudes and develop skills to seek informed choices and actions. It is crucial that in our choices and actions we do not jeopardize the needs of both current and future generations and populations around the globe. In seeking to be responsible, an awareness of the needs of others, an appreciation of diverse viewpoints and ways of life, and a critical analysis of the best use of resources are all fundamental for success.

## CLIMATE CHANGE

The most general definition of climate change is a change of the climate system when considered over periods of decades or longer, regardless of cause (Houghton, J.T., ed. 2001).

Sometimes the term is used to refer specifically to climate change caused by human activity.

The United Nations Framework Convention on Climate Change (1994) defines climate change as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”

Factors that can shape climate include such processes as variations in solar radiation, deviations in the earth’s orbit, volcanisms, alterations to ocean processes such as thermohaline circulation and changes in greenhouse gas concentrations. The scientific consensus on climate change is that human activity contributed to the rapid increase in global average temperatures over the past several decades (IPCC 2007).

Each day thousands of land and ocean temperature measurements are recorded around the world from climate reference stations, weather stations and ships. This data has been compiled over several decades. A great deal of evidence supports the conclusion that human actions are affecting the recent global warming. This conclusion is based on the basic physical understanding of how greenhouse gases trap heat, how the climate system responds to increases in greenhouse gases, and how other human and natural factors influence climate (NOAA, 2009).

Among the most frequently mentioned influential anthropogenic factors on climate change are carbon dioxide levels due to emissions from burning fossil fuels, aerosols in the atmosphere, cement manufacture, unsustainable land use, ozone depletion, animal agriculture and deforestation. In some cases, human activities that change the environment and influence the climate are direct and definite, for example, the effects of irrigation on local humidity or deforestation on emissions and microclimate; while in other cases the cause-effect links are less clear or difficult to predict.

# EDUCATION FOR RESPONSIBLE LIVING

## BACKGROUND

Education about climate change and raising awareness about environmental concerns can encourage students to question the way they think, the values they hold and the decisions they make in the context of sustainable development.

Bird et al (2008) suggests some key messages:

- climate change is a global problem, yet each of us has the power to make a difference
- even small changes in our behaviour can help prevent greenhouse emissions without affecting our quality of life
- actions to address climate change need to be taken at all levels and by everyone.

A willingness to source correct information, appreciate the perspectives of others, reflect on the outcomes and impact of our actions, and embrace change is required in order for us to modify our way of living and reflect a responsible approach to everyday life decisions that foster sustainability.

The ultimate goal is for students to be open to change, to act co-operatively, to think, and to discuss and draw conclusions about different every day activities in a holistic, critical and creative way for the betterment of all humans.

Education for responsible living is best supported by a transformative approach to teaching and learning that involves using student centred and constructivist teaching and learning methodologies. The role of the educator is to facilitate learning by providing guidance on appropriate sources and resources, as well as motivating students to construct their own learning by identifying and evaluating their understanding, values, beliefs and behaviours and taking action accordingly. Students are then empowered to adopt a more responsible style of living and create a better and more sustainable world.

Skills required for responsible living include:

- critical thinking
- complex thinking
- weighing evidence
- presenting reasoned argument
- goal-setting
- seeking alternative solutions
- adapting to change
- advocating for change.



## ACTIVE LEARNING AND TEACHING METHODOLOGIES

Transmissive teaching methods involve a formal teacher-centred approach; for example, an informative talk with an expert passing on content without actively involving the learners. In contrast, transformative approaches offer more opportunities for interaction between educators and learners, learners themselves and learners and the topic studied and help students to actively construct their own understanding, meaning and values.

	<b>TRANSMISSIVE TEACHING</b>	<b>TRANSFORMATIVE TEACHING</b>
	<b>From passive ...</b>	<b>To active ...</b>
<b>Role of Teacher/ Lecturer</b>	<ul style="list-style-type: none"> <li>• Teaching is the main focus</li> <li>• Teacher asks most of the questions</li> <li>• Teacher transmits knowledge</li> <li>• Teacher sets rules</li> <li>• Subject-specific approach taken</li> </ul>	<ul style="list-style-type: none"> <li>• Learning is the main focus</li> <li>• Teacher encourages student questioning</li> <li>• Teacher facilitates knowledge creation</li> <li>• Teacher provides guidelines</li> <li>• Holistic approach taken</li> </ul>
<b>Role of Students</b>	<ul style="list-style-type: none"> <li>• Students are passive learners</li> <li>• Students are mainly asked to answer questions</li> <li>• Students learn from the teacher alone</li> <li>• Students fear mistakes</li> <li>• Students compete with each other</li> </ul>	<ul style="list-style-type: none"> <li>• Students are active learners</li> <li>• Students are both asking and answering questions</li> <li>• Students learn from each other</li> <li>• Students learn from their mistakes</li> <li>• Students work collaboratively together</li> </ul>
<b>Role of Environment</b>	<ul style="list-style-type: none"> <li>• Set layout classroom</li> <li>• Competitive environment</li> <li>• Teacher-centred classroom</li> <li>• Formal environment</li> </ul>	<ul style="list-style-type: none"> <li>• Informal/flexible layout classroom</li> <li>• Collaborative environment</li> <li>• Learner-centred classroom</li> <li>• High energy active environment</li> </ul>

## CRITICAL THINKING AND ACTION

Critical thinking is a skill that is developed by students under the guidance of teachers, where teachers use a variety of student centered, and constructivist teaching and learning methodologies. Critical thinking is not a desire to see things in a negative perspective; it is an attempt to see and understand from multiple perspectives. Students are encouraged to explore their world through critical questions based on taken for granted assumptions. The starting point may be naive or realistic. The world is as it first appears, but through conversations and critical questions, students can discover that others see the world differently and that there may be many issues that are interlinked.

Questions that can be used to encourage critical thinking are: **What? Why? How?** The questions can be asked at different levels but are based on:

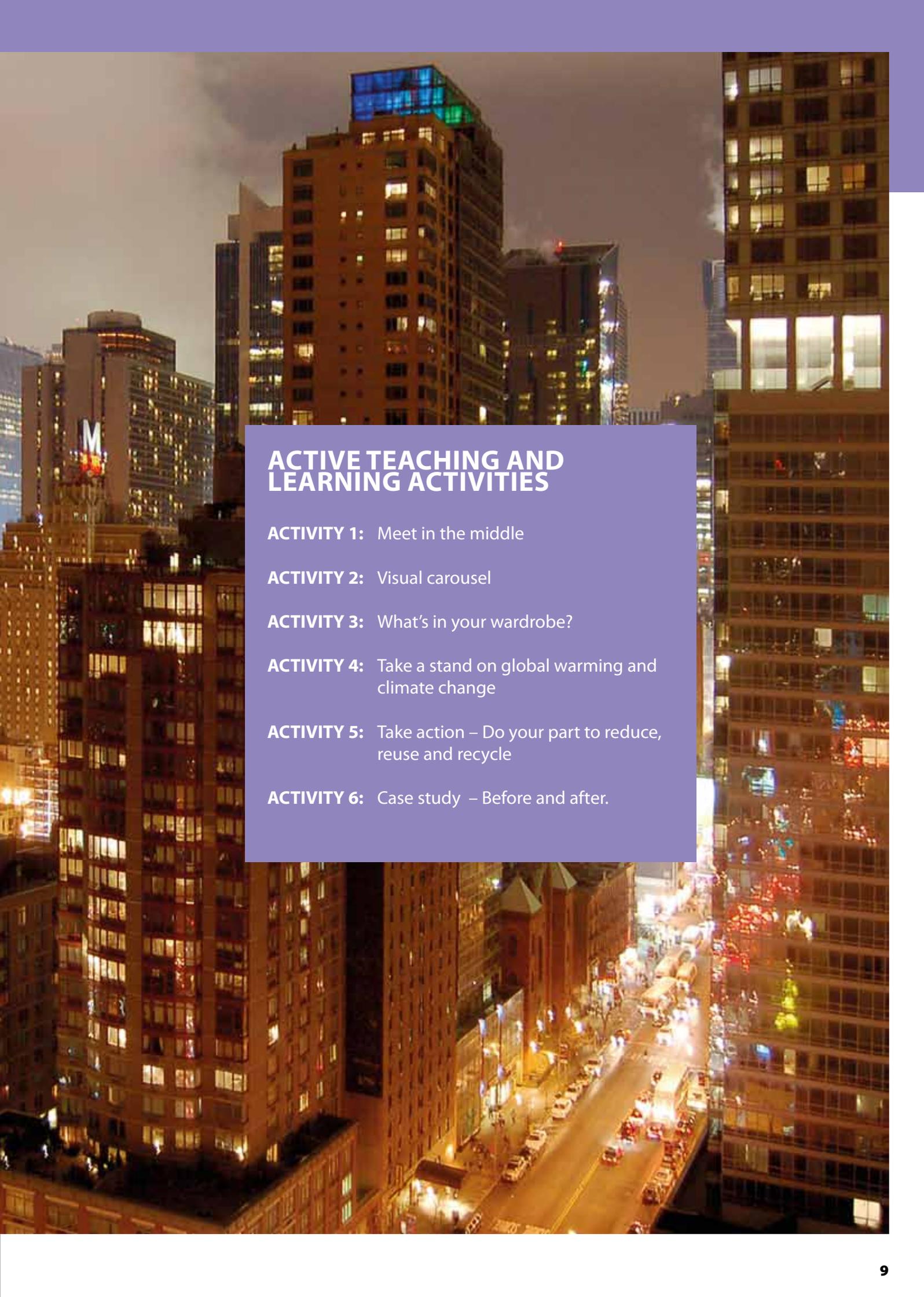
- **WHAT** – that is, data or information
- **WHY** – that is, reasoned explanations
- **HOW** – that is, action.

Examples of questions that can be asked to promote critical thinking to explore a topic and to take action are:

- **WHAT** is the problem?
- **WHY** is it a problem? How do I/we see it as a problem? Do others see it as a problem? How do they see it?
- **HOW** do I want the problem to be solved? What is my/our vision or dream? How do I/we want to take action? Can I/we take this action?

Students cannot be confined to critical thinking and not do anything with the problems or issues they are exploring. They must also have the opportunity to experience acting and reflecting on their actions both alone and with others. This means that the teacher must provide problems or issues where students can actually take action, where they can be responsible for an actual change. Within the activities in the toolkit there is a strong emphasis on questioning to support critical thinking and taking action.





## ACTIVE TEACHING AND LEARNING ACTIVITIES

**ACTIVITY 1:** Meet in the middle

**ACTIVITY 2:** Visual carousel

**ACTIVITY 3:** What's in your wardrobe?

**ACTIVITY 4:** Take a stand on global warming and climate change

**ACTIVITY 5:** Take action – Do your part to reduce, reuse and recycle

**ACTIVITY 6:** Case study – Before and after.

## MEET IN THE MIDDLE

### Objectives

This activity prepares students to work together to find a deeper understanding of some of the problems represented by selected images. It involves discussion, critical thinking and encourages students to form their own questions. The teacher prepares an assignment dealing with personal consumption and global change and students “meet in the middle” to discuss.

### Materials Needed

- Photographs: each group can receive the same image or different images
- Worksheet with sections (see an example of a completed worksheet p. 11 and blank worksheet p.12)
- Pens /pencils

### Preparation

- The classroom should be organised for group work
- The teacher selects an image for each group and provides them with a photocopy of the worksheet in A3 or bigger.

### How the Activity Works

#### *Example 1: Gathering Thoughts and Ideas*

1. Students are divided into groups of four.
2. Each group receives a photograph, pencils and the worksheet.
3. Each group member identifies which one of the four boxes on the worksheet they will use to record their ideas. (The middle box is left empty for the moment).
4. Each member of the group examines and reflects on the image and any other information provided by the teacher on the topic.
5. Each member records in their box their ideas and thoughts based on the image and the topic being investigated.
6. Next, group members take turns in sharing and explaining their ideas and thoughts to other members of their group. A discussion takes place.
7. The group then agrees and selects up to four of the ideas they have discussed and records them in the middle box on the worksheet.

8. When this stage has been completed each group presents their ideas to the other groups.
9. Following this students evaluate and reflect on the session. The teacher can pose questions to prompt discussion such as:
  - What did you learn about the topic / theme?
  - Was there anything that surprised you?
  - How did the responses of the different groups compare?
  - Is there anything that you would like to find out more about?
  - What personal lifestyle changes will you consider related to the topic / theme?

#### *Example 2: Forming Questions (suitable for older students)*

1. Students are divided into groups of four.
2. Each group receives a photograph, pencils and the worksheet.
3. Each group member identifies which one of the four boxes on the worksheet they will use to record their questions. (The middle box is left empty for the moment).
4. Each member of the group examines and reflects on the image and any other information provided by the teacher on the topic. They write into their box any questions that they have that have been prompted by the image.
5. Next, all group members take turns sharing their questions with each other. A discussion takes place.
6. The group then agrees and selects up to four of their questions and records them in the middle box on the worksheet.
7. When this stage has been completed each group presents their questions to the other groups.
8. The teacher invites the students to discuss how they will find answers to these questions.
9. Students form a plan of action and agree who will find out what and how and when they will report back their findings to each other.
10. At the end of the activity students are invited to evaluate and reflect on the session by posing questions such as those in example 1 (step 9).

## Forming Questions about Food

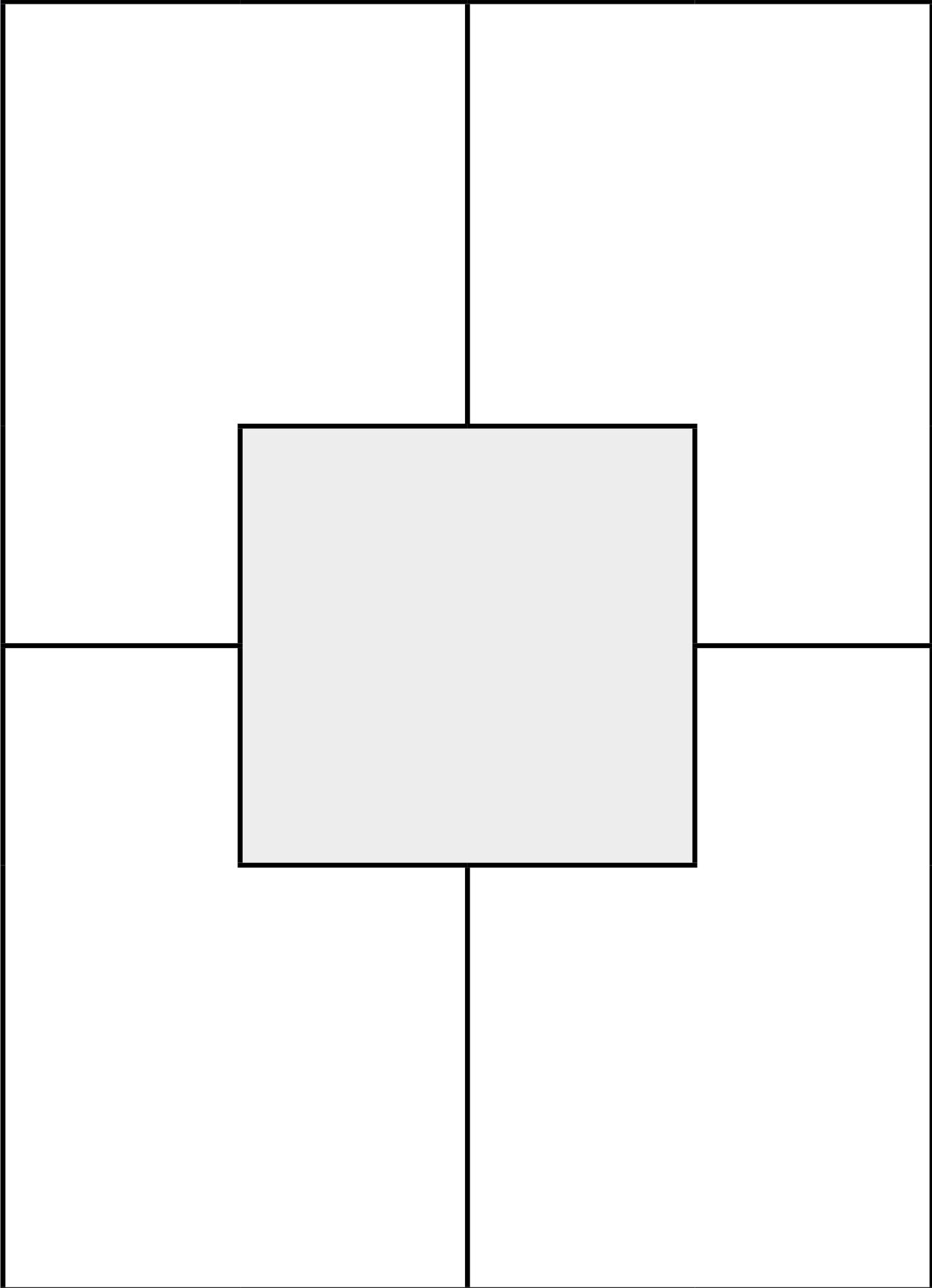


Example of an image for the activity.

Sample of a completed worksheet for example 2 (forming questions).

<p>How much electricity does an open freezer use each day?</p>	<p>If I buy chicken legs, how can I tell if the producer implemented ethical standards when breeding the chickens?</p>	
<p>How would you know if the food in the freezer is organic?</p>	<ol style="list-style-type: none"> <li>1. How can I tell if a product really comes from my country or if it has only been packaged in my country?</li> <li>2. Why do we need so much packaging?</li> <li>3. How do I know if the animal feed was genetically modified?</li> <li>4. How much electricity does an open freezer use each day?</li> </ol>	<p>How can I tell if a product really comes from my country or if it has only been packaged in my country?</p>
<p>Why do we need so much packaging?</p>		<p>Why is the freezer open?</p>
<p>How do I know if the animal feed was genetically modified? How do I know if it is possible to recycle the packaging?</p>	<p>How do I know the origin of the ingredients (e.g. the cheese in the pasta)?</p>	

Blank Worksheet: Meet in the Middle



## VISUAL CAROUSEL

### Objectives

This structured activity is designed to collect student responses to an idea, issue or scenario that is represented in a photograph. Student responses to the image are encouraged and stimulated through a range of prepared questions to promote critical thinking such as What? Why? and How? The activity provides the opportunity to review the responses of others, reflect on the learning and outcomes of the activity, and examine possible lifestyle changes.

### Materials Needed

- Large sheets of paper: e.g. flip chart pages (one page for each group of four students)
- Glue
- Coloured markers (a different colour for each group of four students)
- Copies of photographs (related to the theme you would like students to explore – one photograph for each group of four students)

### Preparation

- Glue each photograph onto a large sheet of paper
- Prepare a set of questions related to the theme of the photograph. Questions should encourage students to reflect on challenges, issues etc. related to the theme
- Write a different set of questions on each sheet

### How the Activity Works

1. Divide students into groups of four.
2. Provide each group with a different coloured marker and one of the large prepared sheets: i.e. with a photograph attached and a question written on it.
3. Invite each group to take a few minutes to look at the photograph, read the questions, brainstorm possible answers and write some thoughts and responses on their sheet.

4. After the allocated time invite each group to pass their sheet onto a different group. Each group then reads the new questions and the responses from the previous group before adding their own responses. They can also, if they agree with statements already recorded on the sheet, place a tick beside the statement. If they disagree with a statement they can place an X beside it.
5. Sheets continue rotating from group to group with each group adding their own ideas and responses using their own coloured marker so that their contributions can be identified later.
6. When all of the sheets have been circulated, review and discuss the responses with the students.
7. Invite students to evaluate and reflect on the session by posing questions such as:
  - What did you learn about the topic / theme?
  - Was there anything that surprised you?
  - How did the responses of the different groups compare?
  - What other questions could you have been asked to discuss related to the theme?
  - Is there anything that you would like to find out more about?
  - What personal lifestyle changes will you consider related to the topic / theme?

On page 14 is an example of questions on transportation that you might include on a set of six flip chart pages as part of a Visual Carousel activity. You can use photographs representing the theme of transportation from the photograph bank or use your own photographs.

While the activity is designed around using a different photograph on each flip chart page, it is also possible to use the same photograph on each page if a suitable photograph is available.

## Visual Carousel: Sample Questions about Transportation



What modes of transport are shown in this photograph?

What other forms of transport are available?

Which forms of transport do you think are the most sustainable?



What types of energy are being used by the transportation shown in this photograph?

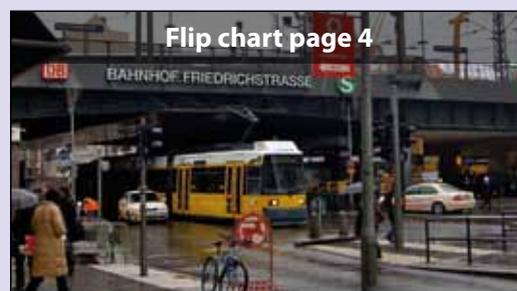
What other types of energy are used by forms of transportation not shown in this photograph?

Which types of energy deplete our natural resources?



What types of pollution are caused by transportation?

Which types of transportation cause less air and water pollution?



What infrastructure do you see in this photograph that might encourage people to travel in a more sustainable way? For example, do you see any bus lanes, cycle lanes, etc?

What other types of infrastructure help to promote sustainable travel?



What type of goods do you think are being transported by the ships in this photograph?

Where do you think the goods might have travelled from?

What factors should you consider when purchasing goods that have been imported?



Why do so many of us live a car intensive lifestyle?

What is the impact of this lifestyle?

What can you / others do about this issue?

## WHAT'S IN YOUR WARDROBE?

### Objectives

This activity helps students to reflect on different aspects of their clothing and how this links to sustainability. It involves discussion, complex thinking and explores how decisions related to our clothing can impact on global changes.

### Materials Needed

- Copy of worksheet: 'Wardrobe Survey' for each student
- Copy of 'Themes and Questions on Clothing' (p.17) for each group

### Preparations

- Organise the classroom for group work
- Provide students with a photocopy of the worksheet for wardrobe review
- The teacher prepares images and a set of questions for each theme

### How the Activity Works

1. Invite students to carry out a wardrobe review and estimate how many items of clothing they think they have. Ask students to record their estimate in Step 1 of the worksheet (p.16). A space is also available to add in a total for the class group if wished.
2. For the next class, invite students to check their wardrobe and count how many items of clothing they actually have and record the numbers in the Step 2 section of the worksheet. A space is also available to add in a total for the class group if wished.
3. Discuss the findings from the survey.
  - Was there much of a difference between the amount of clothing that you thought you had and what you actually have? Were you surprised by this?
  - What about the class totals?
4. Next, divide students into 5 groups to explore clothing themes such as:
  - Consumer behaviour
  - Reusing/recycling/repairing
  - Value for money
  - Manufacture of clothing
  - Energy

Provide each group with one of the theme titles, a

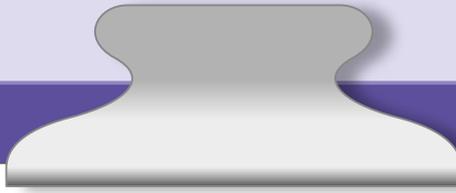
photograph related to the theme and a set of questions.

5. Instruct the groups to respond to the questions and record their answers and ideas on a flip chart sheet.
6. Invite each group to report their findings to the class.
7. Invite students to evaluate and reflect on the session by posing questions such as:
  - What did you learn about the topic/theme?
  - Was there anything that surprised you?
  - How did the responses of the different groups compare?
  - Is there anything that you would like to find out more about?
  - What makes clothes sustainable? What is sustainable fashion?
  - What personal lifestyle changes will you consider related to the topic/theme?

Wardrobe.



## Worksheet: Wardrobe Survey



<b>Step 1.</b> Guess how many items of clothing you have in your wardrobe.			<b>Step 2.</b> Check your wardrobe and count how many items of clothing you actually have.		
Type of clothing	Your estimate	Total class estimate	Type of clothing	Your number	Total class number
Tops (sweater / T-shirt / shirt / blouse)			Tops (sweater / T-shirt / shirt / blouse)		
Dresses			Dresses		
Skirt / trousers			Skirt / trousers		
Coat / jacket			Coat / jacket		
Shoes / boots			Shoes / boots		
Underwear			Underwear		
Socks / tights			Socks / tights		
Other			Other		
Totals					

### 1. Consumer Behaviour

- How many clothes do you usually use per week?
- How many of your clothes have you not used in the last six months?
- Do you need all of the clothes that you have in your wardrobe. Why?
- What could you do with clothes you don't need?
- How long is a new sweater new to you?
- Is it true that clothes say a lot about a person?

### 2. Reusing/Recycling/Repairing

- Where can you find a second-hand store or market in your area?
- Would you repair your favourite sweater if it got torn? Why? / Why not?
- How can we make clothes we like last for a long time?
- Do you repair your shoes or boots when the heels become worn? Why? / Why not?

### 3. Value for Money

- You buy a red shirt for 15 Euros and you don't think it's too expensive, but then in one year you notice it in the bottom drawer and you remember you have only used it twice. Has it been an expensive buy or not? Why?
- What about your favourite clothes? Were they expensive compared to the amount of use that you got from them?

### 4. Manufacture of Clothing

- Does it matter what fabrics yours clothes are made of? Why?
- Do you mind if your clothes are made out of polyester? Why?
- Do you look at labels when you buy clothes? What information do you look for?
- Does it matter where the clothes were made and by whom? Why?

### 5. Energy

- What is the cost of electricity to wash one load of clothes in the washing machine?
- What is the cost of electricity to dry one load of clothes in the dryer?
- Why is it forbidden in some communities to put clothes on a line to dry?
- What are the advantages and disadvantages of putting clothes to dry on a clothes line outdoors?

## TAKE A STAND ON GLOBAL WARMING AND CLIMATE CHANGE

### Objectives

This activity supports student awareness of the human impact on global warming and climate change. It helps students to understand the interests of different social groups and creates awareness of the complicated issues that are involved in decision-making. It encourages democratic awareness amongst students and is a suitable activity for older students.

### Materials Needed

- A photocopy of the worksheet (p.19) for each student
- Paper and pencils for each group to record notes

### Preparation

Divide the class into five groups. Each group takes on a different role that represents a specific social group in society. These include:

- Consumers
- Owners of industrial factories
- Shop owners
- Government
- Environmentalists

### How the Activity Works

1. All members of the groups are provided with a copy of the worksheet (p.19). The focus of the worksheet is on global warming and climate change. The role of each group is to agree on a solution that will contribute to slowing down the warming up of the planet, given that carbon dioxide and other emissions from individuals and industries are contributing to global warming.
2. Each group takes on the role of a specific social group by looking at and representing the interests and priorities of the people that the group represents. The activity has two steps:

#### Step One:

Each group works separately and explores the interests and priorities of the social group they represent.

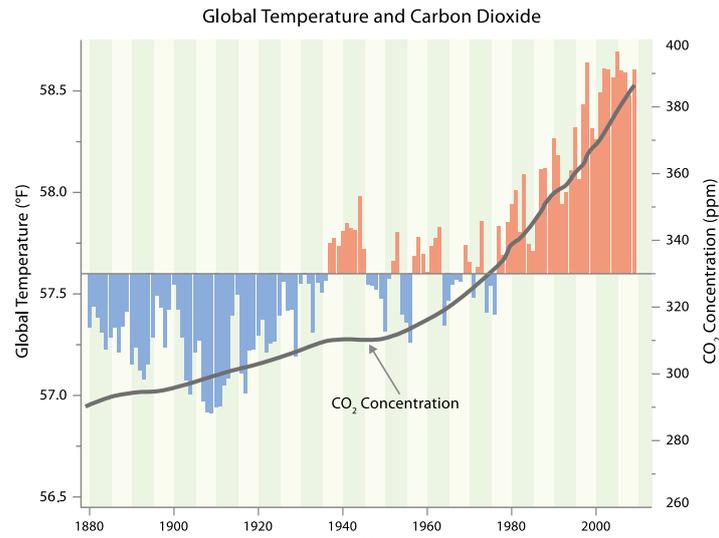
- a. All members of the group read the worksheet and answer the common questions on the worksheet (Section A). This should take approximately 10 minutes.
- b. Then each group discusses the interests of the social group they represent and comes up with answers to the specific questions for their group (Section B). This should take approximately 15 – 20 minutes.

#### Step Two:

All of the groups come together for a plenary meeting. Students select one person to lead the meeting and one person to be a secretary to the meeting. The group leader's role is to chair the meeting so that only one person speaks at a time and everyone gets an opportunity to speak. The secretary's role is to write down the points that are being made during the meeting. This can take from 30–60 minutes.

- a. At the beginning of the meeting each group reports on the interests of their social group.
- b. The group discusses the problem of climate change and tries to come up with a solution to help to slow down global warming, that they can all agree on.

## Worksheet: Take a Stand on Global Warming and Climate Change



### **A. Common questions for all groups:**

- What information does the graph above give us?
- How is CO<sub>2</sub> produced?
- Do we need to worry about this development? Why? Why not?

### **B. Selective questions for each group:**

#### **1. Consumers:**

- As consumers, does your consumption affect global warming and climate change? How?
- What could you do as consumers to help to slow down global warming?
- How will acting responsibly to the problem of global warming impact on your lifestyle?

#### **2. Owners of Industrial Factories:**

- As owners of industrial factories, do your production methods have any impact on global warming and climate change? How?
- What could you do as owners of industrial factories to help to slow down global warming?
- How will acting responsibly to the problem of global warming affect your industry?

#### **3. Shop Owners:**

- As shop owners, is your selection of goods contributing to global warming and climate change in any way? How?
- How can you change your selection of goods to help slow down global warming?
- What impact will this change have on your business?

#### **4. Government:**

- What are your interests as members of government in global warming and climate change?
- Why is your role in government in relation to global warming and climate change important?
- How could government act more responsibly to the problem of global warming?

#### **5. Environmentalists:**

- What are your interests as environmentalists in global warming and climate change?
- As environmentalists, why is your role regarding the problem of global warming important?
- How could you respond to the problem of global warming?

## TAKE ACTION – DO YOUR PART TO REDUCE, REUSE AND RECYCLE

### Objectives

This activity helps students to explore ideas on how to Reduce, Reuse, and Recycle. It involves researching information, working with others, thinking, decision-making, prioritising, planning, taking action and evaluating.

### Materials Needed

- A copy of the worksheet (p.21)
- Pens / pencils
- Internet and other sources of information

### Preparation

- Arrange the classroom for group work
- Provide students with internet access or another reference database to conduct research

### How the Activity Works

This activity can be carried out over several weeks as it is likely that some of the steps may need extra time outside of class time.

#### Step 1: Search for information on the internet

1. Divide students into groups of two and invite each group to use the internet to search for answers to one or more of the questions in Step 1 of the worksheet. Between the whole class all of the questions should be researched and answered.
2. Invite groups to report their findings to the whole class and discuss.

#### Step 2: Carry out a survey

3. Invite students to design a form or log to help them to keep track of how much paper is being used by themselves, by their family and by their school either daily or weekly. Students can be divided into groups and each group can focus on themselves, family or school.
4. Invite students to also identify what the paper is being used for and how much of it is discarded in a day / week.
5. Invite students to make a poster displaying their findings.

#### Step 3: Generate ideas

6. Divide students into groups of four and invite them to look at the three photographs on the worksheet and identify the links between the photographs. Invite students to share their links with the rest of the class and discuss similarities and differences.
7. Next invite the groups to brainstorm ideas on how they might reduce / reuse / recycle paper. Each group can focus on either themselves, their family or their school. Between the groups all three should be covered. Invite students to share their ideas with the rest of the class.

#### Step 4: Plan and make some changes

8. In small groups invite students to 'Make a Plan' as described in Step 4 on the worksheet and decide what could be done differently in relation to paper usage. In particular, students should focus on their own personal role in the plan.
9. Give students a period of time to 'Take Action' and carry out part of their personal role in the plan.
10. On a specified date invite students to 'Review the Plan' and evaluate the progress that they have made and the impact of their actions.
11. Invite students to discuss how their actions for the future might be improved.
12. Agree with students a campaign for publicising Step 4.

## Worksheet: Take Action – Do your part to reduce, reuse and recycle

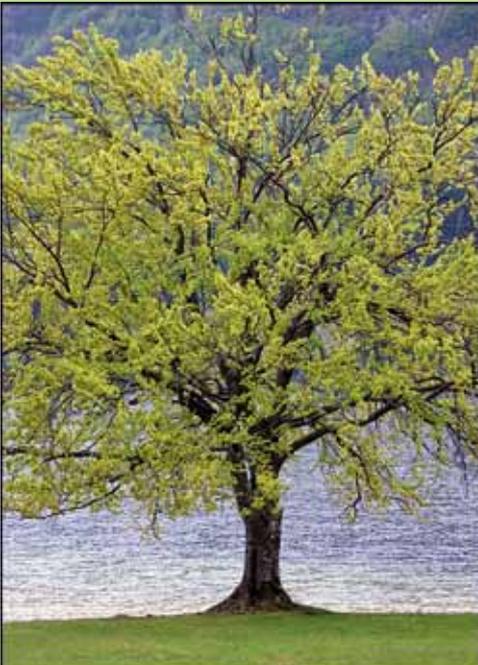
### Step 1: Search for information on the internet

- Where does paper come from?
- How much paper can be made from one tree?
- How long does it take a new tree to grow before it can be used to make paper?
- Estimate how much paper is used in your town / country
- What goods are made from paper?

### Step 2: Carry out a survey

Design a form / log to collect data to help to answer some of the following:

- How much paper do you use in a day / week?
- How much paper does your family use in a day / week?
- How much paper does your school use in a day / week?
- What is all of this paper used for?
- How much paper do you / your family / your school discard in a day / week?



### Step 3: Generate ideas

- What is the link between the three pictures?
- How might you reduce the amount of paper you / your family / your school uses?
- How might you reuse some of the paper you / your family / your school uses?
- What paper could you reuse?
- What paper could you recycle?

### Step 4: Plan and make some changes

- Make a Plan – Decide what could be done differently in relation to paper usage and how it might be done
- What might your role be in the plan?
- Take Action – Carry out your role in the plan
- Review the Plan – Evaluate what you have done, think about the impact your action has had and decide how you might do it better the next time.

## CASE STUDY – “BEFORE AND AFTER”

### Objectives

This activity helps students to reflect on different aspects of day to day life and how this links to sustainability. It involves complex thinking and putting oneself in the role of another person.

### Materials Needed

- Worksheet with image and questions (one for each student or one per group)
- Paper / Pencils

### Preparations

- Arrange the classroom for role-play

### How the Activity Works

1. In a case study, the teacher provides either a real or imaginary context along with a range of relevant characters / roles. Sometimes a photo can be used to help to provide the context.
2. Referring to the Worksheet : Case study – “Before and after”, encourage students to think about the context, characters, and / or roles, and then with climate change in mind to either:
  - (a) in small groups improvise dramatic interactions amongst the characters using the ‘before and after’ questions as prompts.
  - (b) as individuals or small groups write the script for a short role play using the ‘before and after’ questions as prompts.
3. After the activity has been carried out invite the students to debrief by discussing the experience and what they learnt.

Questions might include:

- How did you feel during the role play?
- What did you find easy / challenging?
- What did you like / dislike?
- Did anything happen that surprised you?
- What did you learn about yourself / about climate change?
- Has this activity prompted you to take any kind of action?



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### Context

Tina and her boyfriend Gary have met up on a Saturday morning during summer to take Tina's dog called Pointer for a walk. After a long walk around the old part of town, they decide to have a rest and buy a snack to eat. Both Tina and Gary have been learning a lot at school about climate change, especially its impact on humans and the environment and what we can do to help reduce this impact.

### Activity

Imagine that you are Tina or Gary. Act out what you said and did before and during your walk and whilst you were eating your snack. Keep in mind climate change.

Here are some “before and after” questions to help you:

- Why did you decide to go for a walk?
- How did you prepare for your walk? Why?
  - What clothes did you wear?
  - What did you take with you?
- What did you do as you were walking along? Why?
- What did you buy as a snack? Why?
- What did you do with the waste?
- How did you take care of Pointer during the walk and your snack?
- How did you feel when you got home?
- What would you do better next time?

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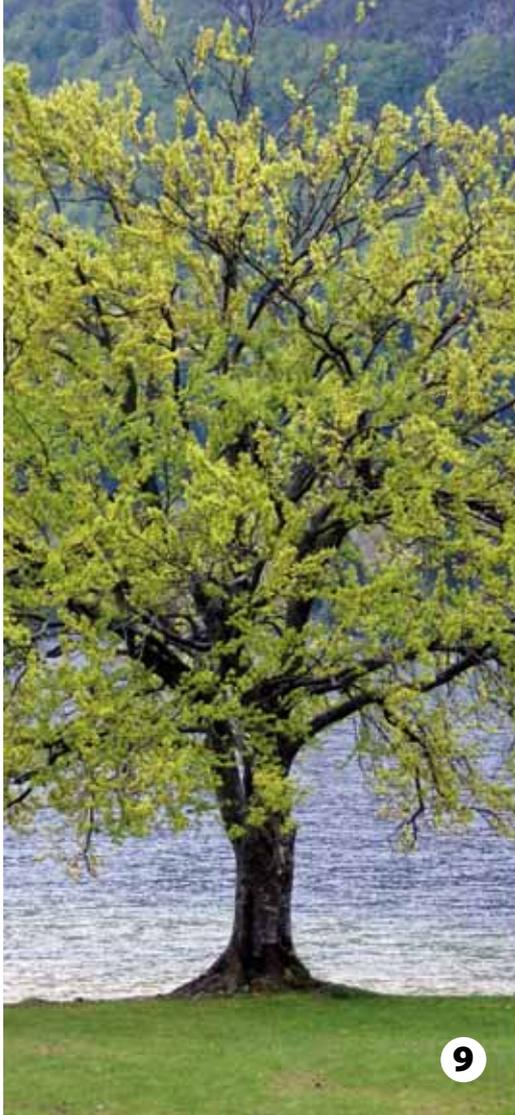


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# EXPLANATIONS OF THE PHOTOGRAPHS

## Photograph 1: “Chicken in Plastic”

This photograph was taken in a supermarket in Iceland. Chicken meat on a plastic tray is wrapped in plastic packaging. For each pack of chicken the plastic tray and wrapping are thrown away. This creates a lot of plastic waste which is mounting up on our planet. The fridge is open, using more energy than if it was closed. This creates unnecessary use and waste of energy.  
Photographer: Sjöfn Guðmundsdóttir

## Photograph 2: “Silom Road”

This photograph was taken in Bangkok, Thailand. A heavily congested road located in the heart of the central business district in Bangkok. It might evoke reflection and discussion about issues such as: fuel importation and consumption, burning of fossil fuels, carbon emissions and climate change, and the need for sustainable ways of transportation.  
Photographer: Nuno Melo

## Photograph 3: “Methane for Cars”

This photograph was taken in Kopavogur, Iceland. A big jeep that used to burn a high quantity of petrol has been converted so that it now burns methane. Instead of adding to the green house effect by burning fossil fuels, the car is now burning methane which is produced by processing garbage. As a result the car is now contributing to decreasing the green house effect.  
Photographer: Sjöfn Guðmundsdóttir

## Photograph 4: “Airplane”

This photograph was taken in Istria, Croatia. Airplanes create several types of air pollution. These occur at the airport during fueling, take off, landing and while the planes are in flight. According to the Center for Climate Change and Environmental Forecasting, CO<sub>2</sub> constitutes roughly 70% of a planes engine emissions, amongst other harmful emissions and particulates.  
Photographer: Gregor Torkar

## Photograph 5: “Berlin Transport”

This photograph was taken in Friedrichstraße in the Mitte district of Berlin. The image, with the Friedrichstraße train station in the background, shows different forms of transportation: pedestrian, bicycle, tram, train and car, and can be used to facilitate discussion about the need to promote sustainable and healthy forms of transportation and reduce harmful emissions.  
Photographer: Nuno Melo

## Photograph 6: “Port”

This photograph was taken in Koper, Slovenia. The port of Koper is a multi-purpose port, equipped and prepared for handling and warehousing all types of goods. This international port is connected to all parts of the world. The port handles a variety of cargo including general cargo, vehicles, cereals, timber, petrol and liquid cargo, which are transported by trains and trucks to countries in Western and Central Europe. The most intensive cargo throughput growth was recorded before the economic crisis in 2008, after which consumption moderated.  
Photographer: Gregor Torkar

## Photograph 7: “Cars in Reykjavik”

This photograph was taken in the centre of Reykjavik in Iceland. It shows a car intensive lifestyle. In Iceland people don't have trains and bus lines are very rare, therefore, cars are necessary for everyday life on the island. The image was selected in order to encourage the discussion on sustainable transport, such as car sharing, green vehicles, urban transport system etc.  
Photographer: Gregor Torkar

## Photograph 8: “Are you a ‘smart’ dresser?”

This photograph was taken in Dublin, Ireland. It shows a wardrobe overflowing with clothes and shoes. As consumers we can be ‘smart’ and act in a more sustainable way by changing just a few things about the way we purchase, launder and wear out clothes.  
Photographer: Miriam O’Donoghue

## Photograph 9: “The Tree”

This photograph was taken in Bohinj, Slovenia. Trees are plants with hard, fibrous tissue called wood. People have used wood for centuries for many purposes: as a fuel or as a construction material for making houses, tools, weapons, furniture, packaging, artworks and paper. The tree on the shore of Lake Bohinj represents the timber that is used as a resource for the paper industry.  
Photographer: Gregor Torkar

## Photograph 10: “Overflowing Waste Paper Bin”

This photograph was taken in a School Office in Dublin, Ireland. Paper is overflowing from a waste paper bin in a school office. The bin contains mainly waste paper from computer printouts, photocopying and postage. The photograph highlights the need to consider reducing paper usage and reusing paper in the office or at home.  
Photographer: Finola Butler

## Photograph 11: “Recycling Container”

This photograph was taken in Dublin, Ireland. It shows one of the many recycling bins that can be found in recycling centres in Dublin. The bin contains heavy paper and cardboard. ‘Each tonne of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4,000 kilowatts of energy and 7,000 gallons of water’.  
Source: <http://www.recyclemore.ie>  
Photographer: Finola Butler

## Photograph 12: “Walkies and a snack”

This photograph was taken in Camogli, Italy. Teenagers share a freshly baked traditional snack from a local bakery. Its healthier and more environmentally friendly than a heavily processed foodstuff as there is less use of preservatives, fuel for transportation and it helps to sustain the local economy. The teenagers have been for a walk with their dog around the old town centre which is less hazardous to the environment as it is pollution-free. Rather than seek an air-conditioned indoor cafe, they sit in the shade to cool themselves off. The walk and snack helps them appreciate their local heritage.  
Photographer: Suzanne Piscopo

