

# TEACHING FOR SUSTAINABLE DEVELOPMENT

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## **INTRODUCTION**

This teaching material has been developed to support teacher educators to introduce Education for Sustainable Development to student teachers. It contains proposed session outlines, materials needed, explanations of how to do the activities and some background material necessary to run the activities.

The 6 sessions are based on a module with CICE student teachers which ran from January to March 2009. The module was organised by CICE lecturer Rosalind Duke and facilitated by Rosalind Duke and Eimear McNally. A guest speaker, Davie Philip of Cultivate, came in to do one session. The students came to the module voluntarily after college. The module was self-assessed and the feedback from students was used to adapt the sessions to this format.

Where possible, weblinks are included to useful material online. Sources of information and further resources are listed in Section IV at the end of the document.

## **TABLE OF CONTENTS**

- I Aims of this Module
- II Module Outline
- III Sessions
- IV Background information and materials for each session
- V Further resources and recommended reading

# I. AIMS OF THIS MODULE

- To introduce the concept of sustainable development
- To explore some of the principles underpinning sustainable development
- To make connections between development and environment
- To model and practice non-formal learning methods
- To consider the meaning of Education for Sustainable Development and its implications for primary schools in Ireland

# II. MODULE OUTLINE

The module is divided into six consecutive sessions. Each session takes about 2 hours depending on the number of participants and whether you want to include other exercises like energisers. Each session is outlined in Section III.

## **SESSIONS:**

### **1. Introduction**

- Principles of interdependence and interconnection (Web of Life)
- KWL chart: exploring what we already know
- Introducing ecological principles
- Definitions and debate around the concept of ‘sustainability’

### **2. Linking environment and development**

- Compiling the group’s existing knowledge of a key environmental issue: deforestation
- Uncovering the web: Linking economic, political, social and environmental factors using a case study of deforestation in the Philippines
- Role play: engaging in environmental decision making

### **3. Climate Change**

- The science of climate change
- Creating positive responses to the challenge of Climate Change

### **4. Community**

- Exploring principles of community and cooperation in the context of a future with less energy
- Case Study: The Eco-Village at Cloughjordan

### **5. Peak Oil**

- Learning Market: 4 different ways to learn about Peak Oil
- Teaching each other about Peak Oil
- Presentation of Transition Towns video

### **6. Education**

- What is education for? Paired conversation followed by group brainstorming
- What is Education for Sustainable Development? Presentation
- ESD in practice: using this module to find examples of ESD in teaching practice
- Embedding sustainability into the primary school curriculum: considering the future

## **III. SESSIONS**

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### **SESSION 1: INTRODUCTION**

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*The aims of this session are:*

- To establish good group dynamics whereby participants will feel 'safe' to challenge each other and themselves, and will be open to new educational experiences
- To introduce the concept of Sustainable Development
- To explore the meaning of sustainability
- To learn about the core principles of sustainability
- To increase participants' knowledge about ecological systems thinking

- To begin modelling approaches and methodologies which enhance learning about Education for Sustainable Development (ESD)

### *Outline of Session*

1. Principles of interdependence and interconnection (Web of Life)
2. KWL chart: exploring what we already know
3. Introducing ecological principles
4. Definitions and debate around the term ‘sustainability’

### *Materials Needed*

- List of [elements](#) of native woodland (or pond or other habitat), with names of these elements on stickers
- Some basic knowledge about these habitats and the species which live there (included in [Section IV](#))
- Ball(s) of wool (one for every 10–12 participants)
- Powerpoint/flipchart/handout of Ecological [Principles](#)
- [Declaration of Interdependence](#)
- Flipchart paper, markers and post-it notes

## **Introduction**

Introduce the course (if appropriate), briefly outlining the general aims and the areas that each session will deal with.

## **Suggested warm-up activity**

With the group in a circle, sitting or standing, ask them to give their name and to mention one thing (natural element if they can) which they need to survive and which alliterates with their name, e.g. my name is Wendy and I need water.

## **ACTIVITIES**

### **Activity 1: Web of Life**

1. Participants stand in a circle (10–12 works best; divide your group if there are more than 15 participants).
2. Give each participant a sticker with the name of one habitat element.

3. A ball of wool or string is then passed from one participant to another according to where each person sees a connection or relationship between their element and another.
4. As each person passes it on, they should identify that connection/relationship. Each person holds the strand of wool (in one hand) each time it passes to them so that a web forms as the wool passes back and forth across the group.
5. When everyone has run out of connections, ask them to pull the web taut. Ask them to place their free hand on top of the web to feel its strength and elasticity. They can also test how pulling on one side of the web affects it, or what happens if one 'element' (and then more) drops their strands. The web will be seen to be strong and resilient, but also potentially fragile. Any intervention will have complex effects on the various elements and therefore on the strength of the whole web. *It is the diversity of relationships that make the web strong*; the more elements involved, the stronger the web will be.
6. To finish, note that some elements hold more strands than others and that these are key elements in the ecosystem. Ask the 'elements' to let go of their strands one by one, noting and discussing some of the knock-on effects for other species/elements, until the web collapses. Consider habitats that have 'collapsed', or where removal of one key element has had wider-than-anticipated effects.
7. This exercise can be done with all age groups, even quite young children. Modify the choice of habitat and elements accordingly, as well as the commentary and the learning you draw from the exercise.
8. Point out that the activity could be done in relation to many different eco-systems and also human social systems (a town, for example, as below in Session 4).
9. Jared Diamond's book *Collapse* is an interesting reference point for this activity (see [Section V](#)).

(Adapted from Hopkins (2008) *The Transition Handbook*.)

## Activity 2: KWL Chart

Give each participant a KWL chart showing three columns: Knowledge you already have, knowledge you Want to learn, and Learning you have achieved. (Alternatively, ask them to draw this chart themselves.) Ask them to fill in the first two columns. After they have done this, engage in a quick ‘round Robin’ asking each participant to add one or two items of knowledge. This helps ascertain and share the knowledge the group already has. The same can be done for what they would like to know. This exercise encourages the participants to activate their knowledge and to consider what they would like to learn. It also forms a learning needs analysis for future planning. The third column should be filled in each week as a learning record for the participants.

<b>K</b>	<b>W</b>	<b>L</b>
<b><u>K</u>nowledge I have</b>	<b>What I <u>W</u>ant to Learn</b>	<b>What <u>L</u>earning I have achieved</b>

## Activity 3: Ecological Principles

1. Ask the group to talk for a few minutes in ‘buzz groups’ about the question: What is Sustainability? (Buzz groups are small, informal groups, formed in clusters of two or three where people are sitting, for a brief discussion.)
2. Take feedback from the group. If not mentioned, refer to the kind of ecological systems they explored in the web of life activity.
3. Ask the group if they have ever come across the term ‘ecology’ in science classes. As an introduction to the principles of ecology you can explain that ecology comes from *oikos* and *logia*, the Greek words for ‘home’ and ‘the study of’ (respectively). So, ecology is the study of our home, planet Earth.
4. Divide the group into five sub-groups. Give each group one of the following principles: **Networks**, **Cycles**, **Balance**, **Development** and **Flows**. Ask them to discuss and form a brief account of the importance of their principle (see [Section IV](#) for background information).
5. Each group should present the account they have written of their principle.

6. In his book (see [Section V](#)) Alan Peacock lists two further principles, that refer to humanity's relationship with nature, **Ethics** and **Eco-Design**. Open a discussion on these principles, linking them to human activities and contexts. Questions on Ethics might include:

- what our responsibility is to other species, to the earth itself and to future generations of humans?
- what is fair in the context of survival of species and of the earth?

The question on Eco-design might be: How do we become eco-literate? How do we bring ecological principles into all we do: how we build, what we eat and how we provide it, transport, energy etc?

(Adapted from Peacock (2004) *Eco-Literacy for Primary Schools*)

#### **Activity 4: What is sustainability?**

Facilitate a group discussion to bring together the learning outcomes of the previous activities.

If sustainability is the aim, what is it that they would want to sustain? Ask each participant to contribute one item at a time and list these on a flipchart to keep on the wall. (This can be added to as the course continues.)

#### **Closing**

- Ask the students to fill in the third column of their KWL chart.
- When they have finished this, read the [Declaration of Interdependence](#) (around the group if appropriate).
- **Evaluation.** Have the activities listed on a flipchart. Ask each participant, before they leave, to put a symbol beside the activity/ies they found most useful. Post-its can be made available for comments.

A useful website to suggest for follow-up to this session is: [www.ecoliteracy.org](http://www.ecoliteracy.org)

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## **SESSION 2: LINKING ENVIRONMENT AND DEVELOPMENT**

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*The aims of this session are:*

- To link environment and development by exploring the global implications of weakening ecological webs
- To study the phenomenon of deforestation (as an example of non-systems thinking): its causes and effects
- To examine a case study of deforestation in the Philippines
- To consider the web of factors leading to activities which cause deforestation
- To reflect on the different roles involved in the making of decisions about activities with significant environmental impacts (such as logging, mining etc)

*Outline of Session*

1. Compiling the group's existing knowledge of a key environmental issue: deforestation
2. Uncovering the web: Linking economic, political, social and environmental factors using a case study of deforestation in the Philippines
3. Role play: engaging in environmental decision making

*Materials Needed:*

- Case study
- Flipchart and markers
- Role Play activity

### **Suggested Warm-up activity**

(Elephant, giraffe, toaster (Chambers (2002) *Participatory Workshops*, p.35)

Stand in a circle. Demonstrate how to form an elephant, a giraffe and a toaster. Each requires three people. For the elephant the middle person raises an arm for a trunk, while those on either side raise their elbows for ears. For the giraffe the middle person puts an arm up in the air and those on either side put one leg forward. For the toaster those on either side join hands around the person in the middle who jumps up and down like toast popping.

The facilitator stands in the middle of the circle. Turn around and point at someone and say one of the three positions, The person pointed to is the 'middle person' and s/he with the person on either side form the

position indicated. If anyone hesitates or gets it wrong, they take the place in the middle of the circle. Continue till the game can move at speed and people are laughing. (Tip: invent your own variations to suit your context or conditions.)

## **Introduction**

Review last week's session briefly, reminding the group of the close-knit ecological web of the woodland (or other habitat).

## **ACTIVITIES**

### **Activity 1: Focusing on Deforestation**

In small groups, participants note what they already know about deforestation, its **causes** and **effects**, on both the large and the small scale. Put up two flipchart pages labelled 'causes' and 'effects'. As groups are ready, they add brief notes (these can be large or small scale) under the two headings and taking care not to repeat information already noted.

These notes might include **causes** such as:

- Global increased requirement for wood for paper, furniture, etc.
- Wood used for fires and for cooking
- Unsustainable logging practices
- War

**Effects** might include:

- Loss of habitats
- Loss of livelihoods for people who depend on the forest
- Soil erosion
- Loss of moisture-retaining properties in soil
- Drought flooding due to siltation
- Climate change
- Privatisation of forests and lack of access for local people for recreational purposes

General information might include a brief input on the [Chipko](#) movement: tree hugging.

## Activity 2: Case Study of deforestation

Read the [case study](#) with the group. In groups ask them to discuss the questions below.

1. Can you trace the link between poverty and environmental degradation in this case study?
2. What wider parameters might we look at in order to understand this linkage more fully?
3. Who is to blame for increasing deforestation?

Ask for feedback on these questions. Draw out the web of economic, social and political factors involved at local and global levels which impacted on this environmental issue. Reflect on the complex nature of the issue of deforestation, and on how good environmental practice and ultimately sustainable development depend on local and global understanding of wider ecological principles.

Create a web chart, linking economic, social, political and environmental factors affecting this case study. At the centre of your web, put a question which will help start discussion and brainstorming of the links, for example:

‘When the forests disappear, who is to blame?’ or ‘How are poverty and deforestation linked, locally and globally?’

See [Section IV](#) for some suggested linking factors.

## Activity 3: Role Play

**Madagascar Fact: The population of Madagascar is 18 million. 70% of the people live on less than \$1 dollar a day.**

1. Make some copies of the article on [Madagascar](#) and the different roles.
2. Give time to participants to read the article and all the roles.
3. Assign roles to each participant.
4. Give participants 5–10 minutes to prepare their defence of their role.
5. Facilitate a debate with the group.
6. Before ending the activity summarise the key points of the debate and commend the participants on their contributions.

(All the information presented here is taken from Irish Aid (2006) *Our World, Our Future, A Teaching Resource for Senior Primary Geography*, p65.)

## Closing

Read the poem below (from Irish Aid (2006) *Our World, Our Future*, p72).

### PRAYER OF THE TREE

On cold nights I am the heat of your hearth.  
I screen you from the sun with friendly shade.  
I give people fruits and flowers.  
As you thirst, my fruits refresh you.  
I am the beam that holds your house,  
The board of your table, the bed that you lie on  
The timber that builds your boat  
And from which you get furniture.  
I am the hands of your hoe,  
And the door of your homestead.  
The wood of your cradle and the shell of your coffin.

*by Samuel Alodina, a poet from Ghana*

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## SESSION 3: CLIMATE CHANGE

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### *Aims*

- To explore the science of climate change
- To increase participants knowledge and understanding of the commonly-used terms and figures used in discussions about climate change
- To highlight the major challenges involved in combating climate change
- To highlight climate change as a global justice issue
- To brainstorm positive responses to the challenges of climate change.

### *Session Outline*

- Energiser
- Powerpoint presentation
- Group discussion
- Mind-map drawing

### *Materials Needed*

- Powerpoint presentation, 'Climate Change: The Numbers'
- Numbers from the presentation written on separate scraps of paper
- Flipchart paper
- Markers and/or crayons
- Blu-tac
- Post-it notes
- Laptop and data projector
- Broadband connection (for closing activity only)
- For Alternative World Café Activity you will need tables, chairs, paper tablecloths, crayons, post-its, flipchart paper, markers- and coffee!

## **ACTIVITIES**

### **Suggested Warm-Up exercise: Outrageous Lies**

There is a lot of misinformation about climate change in the media, sometimes even there are outrageous lies! This exercise encourages participants to think creatively and will warm them up to contribute their guesses to the slide show.

- Divide the participants into smaller groups of 4–5
- Give them each a mundane object such as a stick, a glass, a piece of chalk.
- Each person in the group must talk about the object for one full minute before passing it to the next person.
- When this is finished, bring the whole group back together.
- Have a selection of objects, including the ones used in the smaller groups.
- Invite the participants to pick any one object and tell an outrageous lie about it. They may be slow to start but once they get going they will have fun linking their lies about the objects together.
- Keep going until you feel the group have warmed up.

Adapted from Hopkins (2008) *The Transition Handbook*, p. 119

### **Activity 1: Climate Change: the Numbers (click [here](#) for a link to the presentation)**

The presentation is intended to make the science of climate change more accessible and understandable. It comprises a series of numbers that have a specific relevance to climate change. It begins with an image of a confused-looking George Bush, signifying the confusion that many of us feel when confronted with the jargon and statistics of climate science. This confusion can lead to inaction so it is important to have a basic scientific understanding of climate change. Our learning should also be accompanied by a critical appraisal of the sources of information on the issues.

1. Hand out the scraps of paper with the numbers written on them to participants. (Make 2 or 3 copies of each number if your group is larger.) Explain that the presentation will be based on all the numbers that the participants have. They could be measurements of time, of greenhouse gases, they could be dates or deadlines. The purpose of this is to involve the participants in the presentation and to make the facts more memorable.
2. Ask them to think about the special number they have received. What might it signify? How might it be relevant to climate change?
3. The slides move from historical reasons for climate change through to current challenges, carbon emission limits and deadlines. As you go through the slides ask for suggestions for what each number might be. (They will probably have no idea at first but gain in confidence as the presentation proceeds.)
4. The presentation finishes with a different US President- Barack Obama- and his positive 'yes we can' mantra. This leads to the next activity.
5. Before moving to the next activity finish the presentation by asking for feedback from participants. What facts did they know before? What was new? What was most surprising/ troubling/outraging?

### **Activity 2: Brainstorm in groups**

It is important not to feel overwhelmed by the enormity of the challenge of climate change. ESD empowers learners to take action on issues they feel are important.

1. Ask the group to form smaller groups of 3–4.

2. Give each group a flipchart page, markers or crayons.
3. Ask each group to create a mind-map the theme of 'Yes we can!' or positive responses to the challenge of climate change. Ask them to think about what changes they can make to their own lives to respond to the issues about which they have just learned.
4. When they are finished ask each group to feedback to the whole group and post the mind-maps on the wall as a continual reminder.

### **Activity 2: Alternative Activity**

Mini World Café conversation on adaptation for and mitigation against climate change. (This will take at least an hour and a half.)

The aim of World Café is to make the most of the collective knowledge and ideas of the people in the group. The group talk at their tables about the issue, responding to one or two well-thought-out questions.

1. Form groups of four.
2. Rearrange the tables in the room to create table clusters, as in a café.
3. Place a flipchart paper on each table along with some markers and crayons and post-it notes.
4. Briefly explain the [World Café](#) concept.
5. Ask for one person in each group to volunteer to be a **table host**. A table host stays at their table and welcomes new people to it. The other members of the group are **ambassadors** and will move from table to table.
6. Before starting clarify the question with the group to make sure everyone understands it. Have a question prepared that is relevant to your group. E.g. How can we as 3rd year students in X College raise awareness among our peers of climate change? What are the first steps we must take to make a change? How do we proceed from here?
7. When everyone is clear about the question and the process, begin the first 20 minutes of conversation. Give the group notice 5 minutes from the end of the first round. Give them 5 minutes break and then start the second round.
8. After every round the ambassadors are asked to leave their conversation and move to any other table to join in the discussion there or start a new discussion.
9. All the time the ambassadors and/or table hosts must record the conversations on the flip chart paper. Key ideas or

moments of inspiration can be captured on the post it notes and stuck on the wall for everyone to see.

10. Do this 3 times if possible. In the 3rd round ask the groups, whatever table they are at, to summarise the discussion at that table into some key points. These will be posted on the wall and fed back to the whole group.
11. Give 15 minutes at the end for this feedback and discussion.
12. If possible pick out points from the feedback that could become actions. Assign responsibility for those actions to group members.

### **Closing Activity**

Rob Hopkins' Transition Handbook on You Tube, available here:

<http://www.youtube.com/watch?v=kGHRWptCvgo>

- Show the video clip for the group
- It lasts for under 6 minutes, but if short of time start at 2mins 30seconds.
- Ask the participants to note down terms and ideas they want to find out more about and offer to help them find information on it.

(This clip also works well for the session on Peak Oil.)

### **Useful websites for this session**

United Nations Climate Change Conference Dec 2009:

<http://en.cop15.dk/>

Ireland's Coalition of NGOs campaigning for greater action on climate change: <http://www.stopclimatechaos.ie/>

All about the World Café: <http://www.theworldcafe.com/index.htm>

Scottish education site on climate change:

<http://www.ltscotland.org.uk/sustainabledevelopment/climatechange/>

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## SESSION 4: COMMUNITY

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### *Aims*

- To explore principles of community and cooperation in the context of a future with less energy
- Case Study: The Eco-Village at Cloughjordan

Note: For this session Davie Philip from Cultvate was invited to speak to the group. He presented sections of the TV show “Powerdown”. He also gave a detailed presentation on Cloughjordan Eco-Village.

Episode 8 of Powerdown TV (Energy Descent Pathways) can be viewed online here: <http://transitionculture.org/shop/the-powerdown-show/>

You can purchase the Powerdown DVDs from Cultivate Living and Learning Centre here: [http://www.cultivate.ie/learning/powerdown/powerdown\\_dvd.html](http://www.cultivate.ie/learning/powerdown/powerdown_dvd.html)

A six-minute video about the Village at Cloughjordan can be found here: <http://www.youtube.com/watch?v=BLiziwsrkYw>

And more information on The Village can be found on their website here: [www.thevillage.ie](http://www.thevillage.ie)

Below is a suggested alternative activity, using the resources listed above if you don't have a guest speaker.

### *Materials needed*

- See above
- Data Projector
- Laptop (with high speed internet access if you want to watch You Tube videos)
- Art materials for collage; old newspapers, magazines, glue sticks, card, coloured markers
- Ball of wool

### **Activity 1: Web of Life: Social Ecology**

1. Ask each participant to think about a fictional small town in Ireland: lets call it Bailetown. What are the physical features of this small town? Ask for specific examples from both the built and natural environment. (These might include roads, a pub, a church, a housing estate, a school, a health clinic, a farm, a forest).
2. As the suggestions come, write them on post-it notes and stick up on the wall/ board.

3. When you have a varied selection (as least as many as there are people in the group) ask the participants to stand in a circle. Give each person a feature (or two).
4. As in session 1, use the ball of wool to create a web of connections with the elements of the community. Ask the participants to think about the relationships that could possibly exist in this fictional town.
5. When the web has been created, ask the participants to reflect on the comparison between ecological communities and human communities. Is it a useful analogy? What can we learn from natural systems? Can human social systems become more effective by modelling the principles of ecology? (Recall Session 2) How so? Is this practical?
6. Remind the group of David Suzuki's [Declaration of Interdependence](#) from Session 1.

## **Activity 2**

### **Part 1: The challenges for communities in the future: Energy Descent**

1. Show **Powerdown**, episode 8.
2. Explore the term 'energy descent' with the group.
3. Afterwards lead a discussion on the implications of energy descent for Bailetown. What parts of the community will be affected? How can the community respond to that?

### **Part 2: An example of a community response to energy Descent: The Village**

1. Show the video about the Village
2. During the video participants can note down ideas that Bailetown could use for itself.
3. Lead the group into a discussion about positive responses to the challenge of energy descent.
4. Create a flipchart drawing of the group's ideas.

## **Closing**

1. As a creative reflection on the content of the session, ask the participants to individually create a collage of Bailetown as it might look if it began to respond to the challenge of energy descent.
2. If there is time at the end do a group presentation of the

collages and ask participants to explain their ideas.

3. Encourage participants to also use the KWL chart to reflect on their learning from this session.

### **Useful Websites for this session:**

As above, and:

According to Wiki: [http://en.wikipedia.org/wiki/Energy\\_descent](http://en.wikipedia.org/wiki/Energy_descent)

The Original Energy Descent Plan: <http://transitionculture.org/wp-content/uploads/kinsaleenergydescentactionplan.pdf>

Eat the Suburbs!: <http://www.eatthesuburbs.org/edap-primer/>

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## **SESSION 5: PEAK OIL**

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### *Aims*

- To explore the concept of Peak Oil
- To experience various learning methods
- To learn about positive responses to the challenge of Peak Oil

### *Session Outline*

- Learning Market- 4 different ways to learn about Peak Oil
- Teaching each other about Peak Oil
- Presentation of Transition Towns video.

### *Materials Needed*

- Flipchart paper
- Markers
- Blu tac
- Laptop (with high speed internet access)
- Data Projector
- Materials for [learning market](#)

### **Introduction/Warm-up**

Energiser: Tangled Hands

Standing in a circle, ask everyone to raise their hands above their heads. Ask them to walk towards each other into the centre of the circle as far as they can go. Then ask them to close their eyes, reach out their hands

and grab another's hand, so that everyone is holding hands. The task of the group is to untangle itself back to a perfect circle, silently, without breaking hands.

It might be interesting to ask the group to consider how it was able to organise itself to complete the task, without words and without one clear leader.

## ACTIVITIES

### Activity 1: Peak Oil Learning (free) market

1. Ask group to help set the space up
2. Create 4 easily accessible activity spaces.
3. Divide the group into 3 or 4 small groups (max 4 pp in each group).
4. Explain that each group has the following task: They *will teach each other what Peak Oil is* and what the consequences (positive and negative) are for us (us being the group in the room). First they need to learn a bit more about Peak Oil. They have 40 mins to do that. Then they will have 10 mins to prepare their feedback to the group which should last about 3 mins each. They can be as creative as they like in the way they present their feedback: a short play, a mime, a picture or a talk, whatever they want.
5. Describe the 4 activities that will take place in each space, as shown in the diagram below.

<p>1. VIDEOS/WEBSITES ABOUT PEAK OIL ON YOUTUBE (Set up in advance on the computer)</p>	<p>2. A CONVERSATION WITH SOMEONE WHO KNOWS A LITTLE BIT ABOUT PEAK OIL Also, some books and articles on the topic. (maybe the facilitator)</p>
<p>3. A PROBLEM-SOLVING ACTIVITY (4 squares VISUAL PUZZLE)</p>	<p>4. A CREATIVE WRITING ACTIVITY (WRITE AN ARTICLE FOR HELLO MAGAZINE IN THE YEAR 2059)</p>

6. You could also have a 'Graffiti Wall' (some f/c paper stuck up with markers etc available). This is for QUESTIONS, random IDEAS and the results of completed tasks.
7. The groups can choose to visit any activity at any time. They have 40mins unstructured (hopefully productive) chaos time to use as they decide. The point is that they can choose how they want to learn about Peak Oil. It's a Free Market!
8. After 40mins the facilitator asks the groups to start work on their feedback to the group. They have 10 minutes to prepare a 3 minute feedback.
9. Give each team a fairly strict 3 mins to keep it snappy. Applaud and thank each group as they feedback. Option: record on the Graffiti Wall the feedback as each group delivers it.
10. Debrief if time – discuss the activity as a learning exercise.

**“To learn, read. To know, write. To master, teach.”**

**(Yogi teabag quote)**

### **Activity 2: Storytime: Transition Initiatives**

1. Show 3 min clip of Rob Hopkins describing the Transition Towns movement as a positive example of life after oil
2. Give some useful websites to participants:

<http://transitionculture.org/>

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

<http://transitiontownsireland.ning.com/>

### **Reflection**

1. Group discussion (10mins) leading on from video clip. Allow the participants to lead this discussion as much as possible.
2. Individual reflection: fill in the KWL sheet for today.

### **Closing Activity**

Ask group to do some homework for next week. Think about their answer to this question: *What is education for?*

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## **SESSION 6: EDUCATION**

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### *Session Outline*

- What is Education for? Paired conversation followed by group brainstorming.
- What is Education for Sustainable Development? Presentation.
- ESD in practice – using this module to find examples of ESD in teaching practice.
- Embedding sustainability into the primary school curriculum, considering the future.

### *Materials Needed:*

- Flipchart paper
- Markers
- Blu tac
- Laptop
- Data Projector
- Slide on features of [ESD](#)
- Copies of the module outline with descriptions of activities
- Example of [matrix](#) for demonstration
- Materials for certificate-making activity: coloured (recycled) card, glue sticks, markers, crayons, glitter, scissors, copies of inspirational quotes about education, copies of official title of module, date, college name etc. (see [Section IV](#) for sample)
- Envelopes with questions for evaluation
- Scrap pieces of paper
- Pens

### **Introduction/Warm-up: What is Education for?**

Think and Listen exercise (in pairs) 2 minutes each. One listens and takes notes while the other talks. After 2 minutes they swap.

### **Activity 1: What is Education for? Group Mind-map**

Ask each T&L pair to feed back. Add their points to a growing mind-map on 4 pieces of flipchart paper stuck together. Try to group comments of similar themes together. As you receive the feedback invite other participants to respond to the points.

After everyone has submitted points discuss:

- Points of agreement
- Points of disagreement

- Is education value free? (What does this mean?)
- Is education free of ideology?
- Does our education system in Ireland do what we think education should do?
- Why/why not?
- What kind of things would be most important in a curriculum for sustainability?
- What would a school that was really doing education for sustainability look/sound/feel like?

### **Activity 3: Presenting one way to look at ESD**

1. Present UNESCO's definition (useful – not conclusive!) of ESD – features of good ESD.
2. Emphasise that it is impossible to offer one conclusive definition of SD and ESD – in fact this (arguably) goes against the very ethos of ESD. Rather, it should be continually defined and redefined in a consensual process as we collectively negotiate the path to a more just and sustainable future.
3. Discuss briefly each feature.
4. Ask the participants if they agree or disagree with any of the features.

### **Activity 4: Is this Module ESD? How?**

NOTE: As this was the last session of the module we incorporated an element of review into this activity. This served two purposes: 1, to concretise examples of ESD, putting theory into practice and 2, to help participants review the learning from the whole module. At this point we mentioned some of the theory behind the methodologies. For example we referred to Kolb's and Honey and Mumford's theories of learning styles when reviewing the learning "market" activity on Peak Oil.

1. Divide the group into 3 smaller groups
2. Give each group takes 2 of the features of ESD as presented in the previous activity (each group gets different features)
3. Give the participants a handout with the module outline and a brief description of the activities in each session.
4. Using flipchart paper and markers, ask each group to create a matrix evaluation of the 6 sessions of this module. Identify specific examples from the session where the features were present (or not).

5. After 10 mins put all the matrices together and ask participants to take a minute or two to read the work of the other groups, add to them or request clarification on any point. Discuss Peak Oil Session 4 learning styles.
6. If you wish, you can highlight **knowledge, skills, values** by circling with different colour marker for each.

### **Closing Activity**

To help participants reflect individually on their own learning, invite them to create and decorate their own certificate of participation. Each certificate can consist of:

1. Official title of the course, where it took place, dates
2. An inspirational quote about education of their choosing
3. Their own assessment of the knowledge, skills and values they gained from the module (they might need to use their notes for this)
4. Decoration of their own choosing.

If there is time ask each participant to display their certificate and mention what, for them, were the key learning outcomes.

### **Evaluation**

1. Prepare 3 envelopes in advance and some strips of scrap paper
2. On envelope one write: What was most useful about this module?
3. On envelope two write: What was least useful to you about this module?
4. On envelope three write: What changes would you recommend?
5. Stick these envelopes to the door of the room
6. Before participants leave ask them to write some comments and post them in the relevant envelopes.
7. You could also have a fourth envelope with the question What do you intend to do with what you have learned in this module?

Note: More in-depth evaluation is also recommended.

# IV. BACKGROUND INFORMATION FOR FACILITATORS

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## SESSION 1

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### ELEMENTS OF A WOODLAND HABITAT

#### Oak Tree

- Deciduous hardwood, sheds leaves in autumn
- Fruit is acorn
- Needs sunlight, water and nutrients from soil
- Provides food for mammals (nuts) and habitats for birds and mammals

#### Soil

- Made up of minerals from rocks, decaying organic matter and living organisms such as amoeba, fungi, worms and moles
- a single teaspoonful of soil contains over 4 billion micro-organisms
- Bacteria, a type of micro-organism, are responsible for breaking down and recycling organic matter and turning the nitrogens in this matter into food for plants

#### Humus

- Partially-decomposed organic material, arguably, the most important constituent of soil
- Rich in nutrients, which is essential to the fertility of soil
- The darker the soil, the greater the concentration of organic matter

#### Rainfall

- Forests both depend on and create rainfall
- Moisture is released into the water cycle from the leaves of trees and tree roots absorb excess moisture preventing the soil from washing away

#### Field Mouse

- Nests in leaves, sometimes burrowing underneath the soil, making rooms to store food and have its young
- Sleeps during the day and moves around at night

- Eats ripe corn, peas, berries, nuts and insects
- Hunted by cats, dogs, stoats, foxes and crows

### **Earthworm**

- Help to decompose organic matter in the soil
- Improve vital soil functions such as aeration, water infiltration, and drainage.
- In fertile soils they can number 2 million per hectare or more!

### **Robin**

- Eats berries fruits and worms
- Nests in stone walls, riverbanks or bushes
- Makes its nest from dead leaves, moss and hairs
- Lays 5 or 6 eggs at a time

### **Hedgerow**

- A living fence, a row of trees constantly cut back, a hedge is a woodland edge without a wood
- Hedges increase biodiversity by providing ecological corridors for all types of birds and mammals
- Hedges stabilise soil and prevent erosion

### **Badger**

- Large nocturnal mammal
- Lives socially in a tunnel system called a sett, dug out of the soil with their powerful claws
- They eat small animals such as frogs, mice & hedgehogs; carrion, fruit, cereals & berries in autumn; slugs, beetles and insect larvae; and especially earthworms, which may make up to 50% of their food at one time
- Adult badgers do not have any predators as such, though a fox may take cubs

### **Bluebell**

- Flowers in April/May when the tree canopy has not covered the forest floor
- Pollinated by insects including bees
- Badgers eat bluebell roots, while caterpillars like to eat the flowers

## **Holly Tree**

- Native evergreen shrub/small tree
- Red berries grow only on female holly trees, dispersed by birds
- Tolerant of shade, can grow under larger trees, particularly oak or beech

## **Bramble Bush**

- Low-growing thorny shrub that flowers in spring when the bigger trees are still without leaves
- Produces blackberries that are eaten by mammals and birds who also distribute their seeds

For more on Irish habitats try: <http://www.askaboutireland.ie/reading-room/environment-geography/flora-fauna/Flora-and-fauna/networks-for-life/badgers-and-other-wild-ma/>

< Back to Session 1 >

## **SESSION 1: ECOLOGICAL PRINCIPLES**

### **Networks**

All members of an ecological community are interconnected in a vast and intricate network of relationships, the web of life. They derive their essential properties and, in fact, their very existence from these relationships.

### **Cycles**

The interactions among the members of an ecological community involve the exchange of energy and resources in continual cycles. There is no waste; One species waste is another's food.

### **Balance**

All ecological cycles act as feedback loops, so that the ecological community regulates and organizes itself, maintaining a state of dynamic balance.

### **Development**

The unfolding of life, manifesting as development and learning at the individual level and as evolution at the species level, involves an

interplay of creativity and mutual adaptation in which organisms and environment coevolve.

## **Flows**

All organisms are open systems. They need to feed on a continual flow of energy and resources to stay alive. The constant flow of solar energy sustains life and drives all ecological cycles.

## **Nested Systems**

Throughout nature we find multi-leveled structures of systems nesting within systems. Each of these forms an integrated whole within a boundary while at the same time being a part of a larger whole.

## **Ecoliteracy**

When systems thinking is applied to the study of the multiple relationships that interlink the members of the Earth Household, a few basic principles can be recognized. They may be called principles of ecology, principles of sustainability, or principles of community; or you might even call them the basic facts of life. We need a curriculum that teaches our children these fundamental facts of life:

- that an ecosystem generates no waste, one species' waste being another species' food;
- that matter cycles continually through the web of life;
- that the energy driving these ecological cycles flows from the sun;
- that diversity assures resilience;
- that life, from its beginning more than three billion years ago, did not take over the planet by combat but by cooperation, partnership and networking.
- Teaching this ecological knowledge, which is also ancient wisdom, will be the most important role of education in the next century.

Sources: Capra, Fritjof (1994) Ecology and Community, available online here:

[http://www.ecoliteracy.org/education/principles\\_of\\_ecology.html](http://www.ecoliteracy.org/education/principles_of_ecology.html)

Peacock (2004) Ecoliteracy for Primary Schools

< [Back to Session 1](#) >

## **SESSION 1: DECLARATION OF INTERDEPENDENCE**

### **This we know...**

We are the earth, through the plants and animals that nourish us.

We are the rains and the oceans that flow through our veins.

We are the breath of the forests of the land, and the plants of the sea.

We are human animals, related to all other life as descendants of the firstborn cell.

We share with these kin a common history, written in our genes.

We share a common present, filled with uncertainty.

And we share a common future, as yet untold.

We humans are but one of thirty million species  
weaving the thin layer of life enveloping the world.

The stability of communities of living things depends upon this diversity.

Linked in that web, we are interconnected – using, cleansing, sharing  
and replenishing the fundamental elements of life.

Our home, planet Earth, is finite; all life shares its resources and the  
energy from the sun, and therefore has limits to growth.

For the first time, we have touched those limits.

When we compromise the air, the water, the soil and the variety of life,  
we steal from the endless future to serve the fleeting present.

### **This we believe...**

Humans have become so numerous and our tools so powerful that we  
have driven fellow creatures to extinction, dammed the great rivers,  
torn down ancient forests, poisoned the earth, rain and wind, and  
ripped holes in the sky.

Our science has brought pain as well as joy; our comfort is paid for by  
the suffering of millions.

We are learning from our mistakes, we are mourning our vanished kin,  
and we now build a new politics of hope.

We respect and uphold the absolute need for clean air, water and soil.

We see that economic activities that benefit the few while shrinking the  
inheritance of many are wrong.

And since environmental degradation erodes biological capital forever,  
full ecological and social cost must enter all equations of development.

We are one brief generation in the long march of time; the future is not  
ours to erase.

So where knowledge is limited, we will remember all those who will  
walk after us, and err on the side of caution.

## **This we resolve...**

All this that we know and believe must now become the foundation of the way we live.

At this turning point in our relationship with Earth, we work for an evolution: from dominance to partnership; from fragmentation to connection; from insecurity, to interdependence.

The David Suzuki Foundation

[http://www.davidsuzuki.org/About\\_us/Declaration\\_of\\_Interdependence.asp](http://www.davidsuzuki.org/About_us/Declaration_of_Interdependence.asp)

< [Back to Session 1](#) >

## **SESSION 1: INFORMATION ABOUT THE CHIPKO MOVEMENT**

From their origins as a spontaneous protest against logging abuses in Uttar Pradesh in the Himalayas, thousands of supporters of the Chipko movement, mainly village level women, have won bans on clear felling in an number of regions and influenced natural resource policy in India. The name of the movement comes from a word meaning “embrace”. The women practiced *satagraha* – non-violent resistance, and interposed their bodies between the trees and the contractors’ axes, thus becoming the environmental movement’s first tree huggers.

The forests of India are a critical resource for the subsistence of rural peoples throughout the country, but especially in hill and mountain areas, both because of their direct provision of food, fuel and fodder and because of their role in stabilising soil and water resources. As these forests have been increasingly felled for commerce and industry, Indian villagers have sought to protect their livelihoods through the Gandhian method of satyagraha non-violent resistance. In the 1970s and 1980s this resistance to the destruction of forests spread throughout India and became organised and known as the Chipko Movement.

**The first Chipko action took place spontaneously in April 1973** and over the next five years spread to many districts of the Himalaya in Uttar Pradesh. The Chipko protests in Uttar Pradesh achieved a major victory in 1980 with a 15-year ban on green felling in the Himalayan forests of that state by order of India’s then Prime Minister, Indira Gandhi. Since then the movement has spread to Himachal Pradesh in the North, Kamataka in the South, Rajasthan in the West, Bihar in the East and to the Vindhya in Central India. In addition to the 15-year ban in Uttar Pradesh, the movement has stopped clear felling in the Western Ghats and the Vindhya and generated

pressure for a natural resource policy which is more sensitive to people's needs and ecological requirements....

A feature published by the United Nations Environment Programme reported the Chipko Movement thus: **'In effect the Chipko people are working a socio-economic revolution by winning control of their forest resources from the hands of a distant bureaucracy which is concerned with selling the forest for making urban-oriented products.'**

'The solution of present-day problems lie in the re-establishment of a harmonious relationship between man and nature. To keep this relationship permanent we will have to digest the definition of real development: development is synonymous with culture. When we sublimate nature in a way that we achieve peace, happiness, prosperity and, ultimately, fulfilment along with satisfying our basic needs, we march towards culture.' *Sunderlal Bahuguna*

Read more at: <http://www.iisd.org/50comm/commdb/desc/do7.htm>  
and at <http://nandadevi.prayaga.org/chipko.html>

< Back to Session 1 >

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## SESSION 2

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### CASE STUDY

Ramon Balayon is a typical Filipino slash-and-burn farmer. Each planting season he burns down a further half-hectare of the dwindling rainforest in order to grow root crops and corn. This is how he grows food for his wife and six children and earns a few pesos with which to buy essentials. He is not unaware of the problems of burning down the forest, but his scramble to meet today's needs is his primary concern.

Ramon's father migrated from Mindanao from one of the central islands in the Philippines and through a government programme acquired a 4-hectare farm in a fertile valley. When Ramon married, his father split the farm with him and Ramon worked hard, as peasant farmers have to do, though they are often characterised as lazy and shiftless.

Then, Ramon was advised by technicians from the Department of Agriculture to abandon the mixed farming he and his father had practised and instead to concentrate all his efforts on the new high-

yielding varieties of rice. He was assured that the yield would be substantial and that financially his lot would improve dramatically.

For a number of years things went really well. However first he lost a crop due to a prolonged drought and the following season he lost another crop to pest infestation. These losses threw him into debt. Then, following the rise in the price of oil, the price of fertiliser climbed steadily, followed again by an increase in interest rates. His debt continued to grow and soon he was forced to sell his holding. After paying his debts, there was precious little left and before long, Ramon found himself penniless and forced to move to the hills as a slash-and-burn farmer.

The destruction of the forest is laid at the door of the slash-and-burn farmers. Meanwhile logging concessions reduce the area of forest available to other farmers, who (unlike Ramon who was forced into this way of farming) have practised slash-and-burn as part of a sustainable lifestyle within the forests. Now however the area available to them has been so reduced that they are no longer able to sustain their subsistence patterns of agriculture.

As logging roads are opened up into the forest hinterlands, they make the area accessible to a land-hungry population. Logging companies encourage workers for whom they have no more need to begin slash-and-burn themselves, adding to those trying to make a living by cutting down the forest.

Adapted from Sean McDonagh,  
*To Care for the Earth: A Call for a New Theology*

[< Back to Session 2 >](#)

## **SESSION 2: ECONOMIC, SOCIO-POLITICAL AND ENVIRONMENTAL FACTORS INVOLVED IN DEFORESTATION IN THE PHILIPPINES**

### **Economic factors include:**

Debt, oil prices, the global context of economic problems at local and national level, trade, exporting for foreign currency and cash crops, logging concessions, etc.

### **Socio-Political factors include:**

Landlessness, poverty, low status of peasant farmers, government decisions that do not relate to farmers on the land, the marginalisation of the poor, etc.

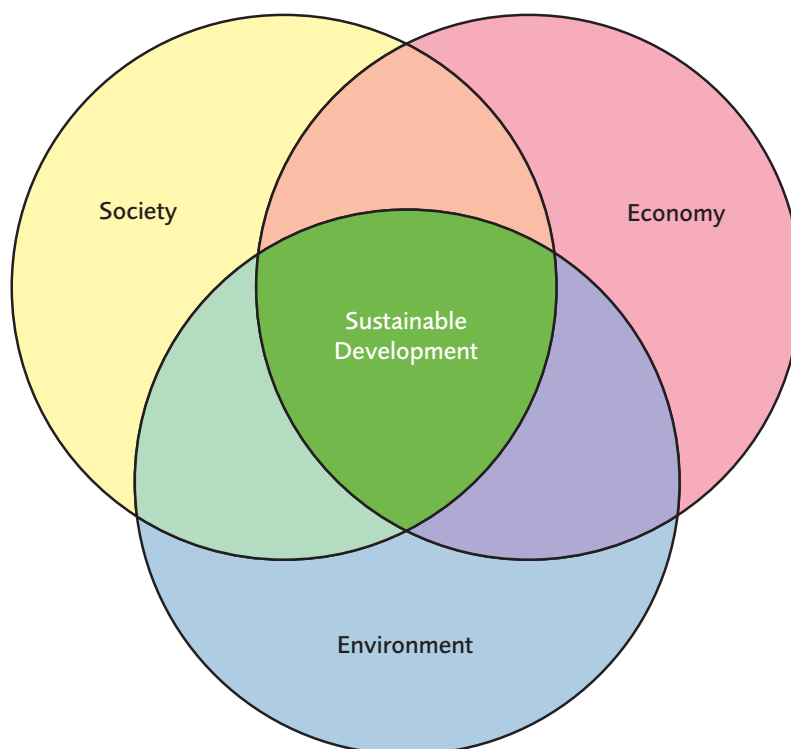
### **Environmental factors include:**

The loss of mixed farming practices which help maintain food security and coping mechanisms; the increased use of artificial fertilizers and pesticides in the cultivation of cash crops; the loss of habitat for native forest dwellers; the loss of forest cover and the consequent increase in carbon dioxide in the atmosphere; the loss of bio-diversity as forest habitats are destroyed, etc.

Try to link each of these issues, and any others that seem relevant to you, to the context and events in the case study. Note them on a flipchart page, drawing lines to link them so as to form a web of interlinking issues and events.

[< Back to Session 2 >](#)

## **SESSION 2: SOCIAL, ECONOMIC AND ENVIRONMENTAL FACTORS IN SUSTAINABLE DEVELOPMENT**



**Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.**

Brundtland Commission, 1987.

[< Back to Session 2 >](#)

## SESSION 2: ROLEPLAY ACTIVITY

*The following article, by Jo Revill, on which the worksheet is based, appeared in The Observer on August 7, 2005:*

One of the world's biggest mining companies has been given permission to open up an enormous mine on the Indian Ocean island of Madagascar which will involve digging up some of the world's most unique forest. Madagascar is noted for its wildlife. Many of its plant and animal species exist nowhere else in the world. Its beauty and coastline are also beginning to make it popular with tourists and its popularity has been further boosted by the film Madagascar, the animated movie which features animals escaping from a New York zoo and ending up on the island. But the company, mining giant Rio Tinto, says environmental damage will be kept to a minimum. It says it will bring wealth to a poor region. Coastal rainforest bordering the Indian Ocean will be dug up in a €635 million project to extract ilmenite. The operation could last for 40 years. There is enormous demand for the white pigment, which is used in paper, paint and plastics.

Madagascar has more groups of rare animals than almost anywhere else on earth. Best known of Madagascar's animals are the lemurs, monkey-like creatures with large eyes, of which there are 32 different species. Other creatures under stress are the ploughshare tortoise, the world's rarest tortoise, of which only a few hundred survive today, and the sideneck turtle.

Rio Tinto assessed the likely damage. As a result, the company decided to set aside a conservation area on land it was previously going to mine, so that some of the plants and species could be protected. It also worked with experts from Kew Gardens, the famous botanical gardens in London, to preserve the seeds of threatened plants. Kew Gardens received sponsorship money from Rio Tinto as part of the deal.

### **Vocabulary:**

*ilmenite* – a mineral used as whitening for paper, plastic and paint

*pigment* – a substance used for colouring things

*Rio Tinto* – a large mining company

*Botanical gardens* – gardens where plants are studied and conserved

Review what you have read and make sure you follow the story. Ask your partners if you are not sure. Then read all the viewpoints on the second page carefully.

### **Role 1: First Environmentalist (Against The Project)**

This is a very sad day and very bad news for the people of Madagascar. Rio Tinto is exploiting natural resources in poorer countries and, once again, it is the local people who will pay the price. There is terrible poverty in Madagascar, but this is not the best way to help. Thousands of foreigners will come in to take the jobs, and there are worries about the spread of diseases such as HIV/AIDS. I fear it's going to destroy one of the most beautiful regions in the world.

### **Role 2: Expert from Kew Botanical Gardens (For the Project)**

We shouldn't criticize the company. We wanted to see the least environmental damage possible from this project. They are giving money to us experts to preserve the plant species. Look what we have done to our own country. If we follow the same rules, shouldn't we be covering our country with oak forest and wild boars? We have an odd view about what is right and wrong.

### **Role 3: Company spokesperson (For)**

We believe we have done everything we can to keep the impact on the environment as small as possible. Ilmenite was going to be mined one way or another. If we did not do it, another company would. Much of the forest in the south has already disappeared because local people have chopped down many of the trees for firewood. We will actually be restoring the forest by planting seeds and trees in areas that have been stripped.

### **Role 4: Second Environmentalist (Against)**

You might have lots of plans for environmental protection, backed by lots of experts, but we are looking at a mine which will operate for 40 years. What are we going to do if, at the end of it all, there are species which become extinct, a forest that is ruined and people who are still poor? Who's going to be held accountable for that? No one! It's the age-old story of large companies getting exactly what they want, whatever the environmental cost.

### **Role 5: Government spokesperson from Madagascar (For)**

You have no right to criticize the company or the government. Look at the type of paper and paint you want. By demanding those goods, you are demanding that we or someone else provides ilmenite. We are providing what you people in the developed world want. This is among the poorest countries on Earth and you want us to protect forests at our own cost and turn up our noses at money that could provide health and education for our children.

Source: Irish Aid (2006) Our World Our Future P.65–66.

[< Back To Session 2 >](#)

## **WORLD CAFÉ – BACKGROUND INFORMATION**

**“Awakening and engaging collective intelligence through conversations about questions that matter.”**

The World Café is an innovative yet simple methodology for hosting conversations about questions that matter. These conversations link and build on each other as people move between groups, cross-pollinate ideas, and discover new insights into the questions or issues that are most important in their life, work, or community. As a process, the World Café can evoke and make visible the collective intelligence of any group, thus increasing people’s capacity for effective action in pursuit of common aims.

**The integrated design principles** have been distilled over the years as a guide to intentionally harnessing the power of conversation for business and social value. When used in combination, they provide useful guidance for anyone seeking creative ways to foster authentic dialogue in which the goal is thinking together and creating actionable knowledge.

**As a living network pattern**, the World Café refers to a living network of conversations that is continually co-evolving as we explore questions that matter with our family, friends, colleagues, and community. The metaphor of the “World as Café” helps us notice these invisible webs of dialogue and personal relationships that enable us to learn, create shared purpose, and shape life-affirming futures together.

In this sense, the World Café is also a growing global community of people, groups, organizations, and networks using World Café principles and processes to evoke collective intelligence and link it to effective action in pursuit of common aims.

For more see: <http://www.theworldcafe.com/index.htm>

[< Back to Session 3 >](#)

## **SUGGESTED MATERIALS FOR THE FREE LEARNING MARKET**

### **1. Websites**

Interactive map of global oil production:

<http://www.lastoilshock.com/map.html>

International compilation of oil-related news:

<http://www.energybulletin.net/>

An article explaining Peak Oil:

<http://transitionculture.org/essential-info/what-is-peak-oil/>

A video of “The Story of Stuff” essential viewing:

<http://www.youtube.com/watch?v=gLBE5QAYXp8&NR=1>

A funny song about Peak Oil:

<http://www.youtube.com/watch?v=KvAiw5P6VEY&feature=related>

### **2. Conversation/Books/Articles**

We used:

*The Transition Handbook* by Rob Hopkins, 2008, Green Books, Totnes.

*Living Through the Energy Crisis* by C.J. Campbell and Graham Strouts, Eagle Print, Skibbereen, Ireland.

### **3. Problem-Solving Activity**

We used a puzzle from Chambers (2002).

Four images that describe Peak Oil in different ways were glued onto 4 squares. The squares were then cut up in different ways into four pieces each. One piece from each square was taken and swapped with another before placing them all in 4 envelopes. The envelopes were placed on the table with a short explanation and each group were invited to take one each. To solve the puzzle the groups would have to negotiate with each other to find and swap their missing pieces.

When the puzzle is completed, the group can then examine the image to see what it tells them about the topic.

### **4. Creative Writing Activity**

A selection of old magazines and newspapers were placed on the table. Copies of sample “Transition Tales” from the Transition Handbook were also placed on the table as an example. A sheet of paper explained the

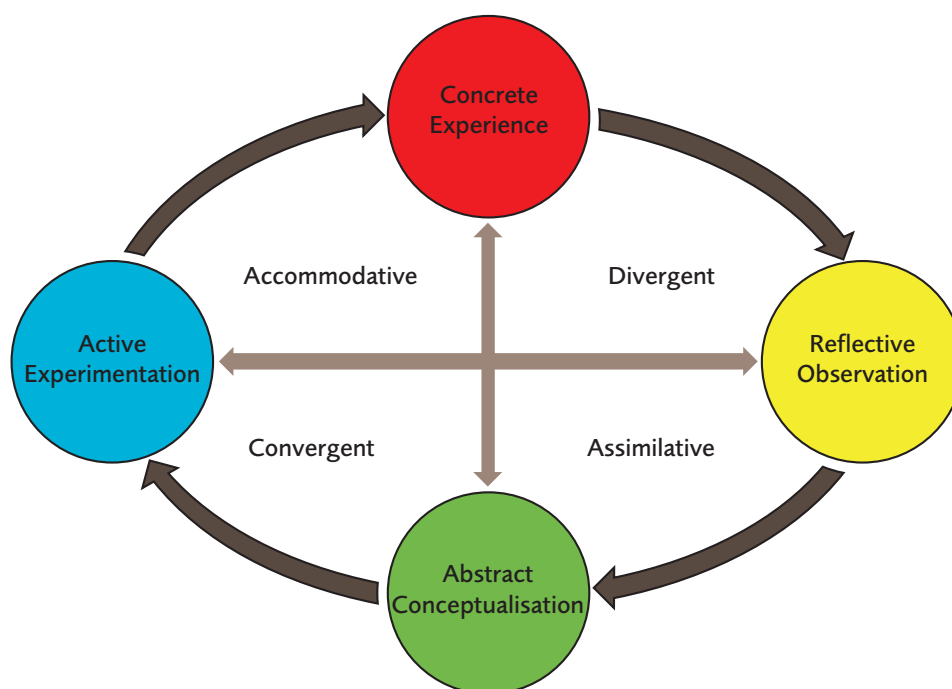
task. The group were asked to imagine it was the year 2059. Peak Oil had occurred and society was now living with less energy than it had 50 years ago. The task was to take an article from the 2009 magazines and newspapers and rewrite it as if it was now 2059. What would have changed? What would the values expressed in the article be? What fundamental differences in ways of life would there be?

### Background Information to the Free Learning Market

The free learning market is meant to present different learning opportunities for participants, in recognition of the fact that people have varying approaches to learning. Kolb and Honey & Mumford have developed theories of learning styles, such as in the diagram below. The activities in the free learning market are meant to loosely reflect these theories.

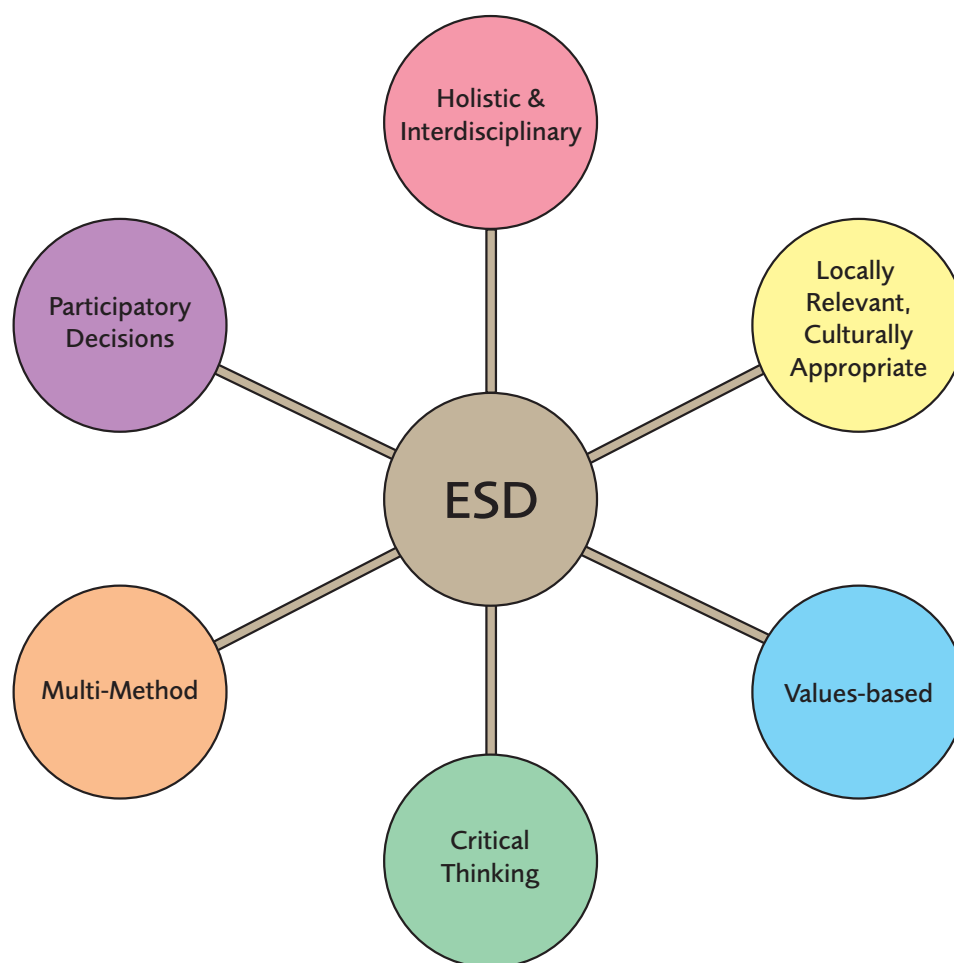
The final section of the activity, where the participants teach each other, is most important in affirming the learning from the various sources.

You can find many websites that explore learning theory, here is one:  
<http://www.learningandteaching.info/learning/experience.htm>



This diagram shows Kolb's Theory of Experiential Learning (outer) and Honey & Mumford's later Typology of Learners (inner), together in one visual description.

< Back to Session 5 >

**ESD is**

- Interdisciplinary and holistic learning rather than subject-based learning
- Values-based learning
- Critical thinking rather than memorizing
- Multi-method approaches: word, art, drama, debate, etc.
- Participatory decision-making
- Locally relevant information, rather than national

For more information see:

[http://portal.unesco.org/education/en/ev.php-URL\\_ID=23279&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/education/en/ev.php-URL_ID=23279&URL_DO=DO_TOPIC&URL_SECTION=201.html)

< Back to Session 6 >

## SESSION 6: SAMPLE MATRIX

Session > ESD Feature v	1. Intro	2. Env & Dev	3. Climate C	4. Community	5. Peak Oil	6. ESD
Interdisciplinary Holistic						
Values-based						
Critical Thinking						
Multi-Method						
Participatory						
Locally Relevant, Culturally Appropriate						

### BACKGROUND INFORMATION: WHAT IS ESD?

#### Vision & Definition of ESD

Education for sustainable development is about learning to:

- respect, value and preserve the achievements of the past;
- appreciate the wonders and the peoples of the Earth;
- live in a world where all people have sufficient food for a healthy and productive life;
- assess, care for and restore the state of our Planet;
- create and enjoy a better, safer, more just world;
- be caring citizens who exercise their rights and responsibilities locally, nationally and globally.

Education for Sustainable Development has four major thrusts:

- Promote and improve basic education
- Reorient existing education programs at all levels to address sustainable development
- Develop public awareness and understanding of sustainability
- Provide training

### **UN Decade of Education for Sustainable Development (2005–2014)**

In December 2002, the United Nations General Assembly adopted resolution 57/254 to put in place a United Nations Decade of Education for Sustainable Development (DESD), spanning from 2005 to 2014, and designated UNESCO to lead the Decade.

The founding value of ESD is respect: respect for others, respect in the present and for future generations, respect for the planet and what it provides to us (resources, fauna and flora). ESD wants to challenge us all to adopt new behaviours and practices to secure our future.

Source: [http://portal.unesco.org/education/en/ev.php-URL\\_ID=27279&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/education/en/ev.php-URL_ID=27279&URL_DO=DO_TOPIC&URL_SECTION=201.html)

< Back to Session 6 >

### **SESSION 6: QUOTES**

A prudent question is one-half of wisdom.

***Francis Bacon***

By three methods we may learn wisdom:

First, by reflection, which is noblest;

Second, by imitation, which is easiest;

and third by experience, which is the bitterest.

***Confucius***

An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you know and what you don't.

***Anatole France***

Education is a better safeguard of liberty than a standing army.

***Edward Everett***

Education is a progressive discovery of our own ignorance.

***Will Durant***

Education is a social process. Education is growth.  
Education is, not a preparation for life; education is life itself.

***John Dewey***

Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.

***Oscar Wilde***

Education is an ornament in prosperity and a refuge in adversity.

***Aristotle***

Education is learning what you didn't even know you didn't know.

***Daniel J. Boorstin***

Education is not preparation for life; education is life itself.

***John Dewey***

Education is not the filling of a pail, but the lighting of a fire.

***William Butler Yeats***

Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.

***John Muir***

Education is what remains after one has forgotten what one has learned in school.

***Albert Einstein***

Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.

***Albert Einstein***

Imagination is more important than knowledge.

***Albert Einstein***

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

***Margaret Mead***

*US anthropologist & popularizer of anthropology (1901–1978)*

[< Back to Session 6 >](#)

## SESSION 6: SAMPLE CERTIFICATE OF PARTICIPATION

*This is to certify that*

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*completed the module in  
Education For Sustainable Development*

*at the  
Church of Ireland College of Education,  
Rathmines, Dublin 6*

*between the dates of  
January 14<sup>th</sup> - February 25<sup>th</sup>, 2009*

*Topics covered in the module:*

- Sustainable Development -*
- Principles of Ecology -*
- Climate Change -*
  - Peak Oil -*
  - Community -*
- Education for Sustainable Development -*

[< Back to Session 6 >](#)

## V. LIST OF USEFUL RESOURCES AND RECOMMENDED READING

### Resource Packs

ECO-UNESCO (2006) *What on Earth Is Sustainable Development?*  
ECO-UNESCO, Dublin.

Tide/ DEC (2000) *Learning Today with Tomorrow in Mind: Sustainable Development Education*, Development Education Centre, Birmingham.

Horgan, Kathleen (1993) *Team Planet: An Action Pack on Our World and Ourselves* (4 vols.) Limerick, Primary School Development Education Project. (This is currently out of print but due to be made available online, contact DICE for further information)

McKeown, Rosalyn, Ph.D (2002) *Education for Sustainable Development Toolkit* (Version 2.0), available to download from:  
<http://www.esdtoolkit.org/>

UNESCO (2006) *Teaching and Learning for a Sustainable Future: A Multimedia Teacher Education Programme* (Version 4.0), available online and to download only at: <http://www.unesco.org/education/tlsf/>

### Books

Arthus-Bertrand, Yann (2003) *The Future of the Earth: An Introduction to Sustainable Development for Children*, Harry N. Abrams Inc., New York City.

Campbell, C.J. and Strouts, Graham (2007) *Living through the Energy Crisis: Preparing for a Low-Energy World*, Eagle Print, Cork.

Capra, Fritjof (1996) *The Web of Life*, Flamingo, London.

Capra, Fritjof (2003) *The Hidden Connections*, Flamingo, London.

Chambers, Robert (2002) *Participatory Workshops: A Sourcebook of 21 Sets of Ideas & Activities*, Sterling, Va.: Earthscan Publications Ltd.

Cornell, Joseph (1999) *Sharing Nature With Children: 20th Anniversary Edition*, Dawn Publications, Nevada, USA.

Cornell, Joseph (1989) *Sharing Nature With Children: Volume II*, Dawn Publications, Nevada, USA.

- Diamond, Jared (2005) *Collapse: How Societies Choose to Fail or Succeed*, Viking Press, USA.
- Goldring, Andrew (2000) *Permaculture: Teacher's Guide*, WWF-UK in association with Permaculture Association (UK) and Permanent Publications, London.
- Greig, Sue et al (1987) *Earthrights: Education as if the Planet Really Mattered*, WWF and Kogan Page, London.
- Hinrichsen, Don (1992) *Our Common Future A Reader's Guide – The 'Brundtland Report' Explained*, Earthscan.
- Holmgren, David (2002) *Permaculture: Principles and Pathways beyond Sustainability*, Holmgren Design Services, Hepburn, VA, Australia.
- Hopkins, Rob (2008) *The Transition Handbook: From Oil Dependency to Local Resilience*, Green Books, Totnes.
- Richard Louv (2005) *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder*, Algonquin Books of Chapel Hill
- Meadows, Donella et al (2004) *Limits to Growth: The 30-year Update*, Earthscan, UK.
- Peace Child International (2002) *Sustainable Human Development: A Young People's Introduction*, Evans Brothers Limited, London.
- Peacock, Alan (2004) *Eco-Literacy for Primary Schools*, Trentham Books, Stoke on Trent.
- Smith, David J., and Armstrong, Sheila (2003) *If the World Were A Village*, A&C Black, London.
- Sterling, Stephen (2001) *Sustainable Education: Revisioning Learning and Change*, Green Books, Totnes.
- United Nations Environment Programme (1999) *Pachamama: Our Earth – Our Future*, Evans Brothers Ltd, London.
- World Watch Institute (Annual) *State of the World Report*, Worldwatch Institute, Washington. Some chapters available to download at: <http://www.worldwatch.org/node/5982>

## Websites (other than those listed in the Session Outlines)

Comhar; Ireland's Sustainable Development Council

<http://www.comharsdc.ie/>

Eathday Network: A US-based site for educators, contains lesson plans to introduce sustainability to young people. Also contains online ecological footprint quiz for kids. <http://www.earthday.net/bobbybigfoot>

Other Eco-foot websites with 'calculators' are:

[www.antaisce.org/natural-environment/ecological-footprint](http://www.antaisce.org/natural-environment/ecological-footprint)

[www.myfootprint.org](http://www.myfootprint.org)

[www.change.ie/calculator/](http://www.change.ie/calculator/)

[www.carbonfootprint.com](http://www.carbonfootprint.com)

Development Education resources in Ireland:

[www.developmenteducation.ie](http://www.developmenteducation.ie)

Global Dimension, the Development Education Agency in the UK manage this resource site: <http://www.globaldimension.org.uk/>

Schumacher Institute: <http://www.schumacherinstitute.org.uk/node/4>

Sustainability – magazine for Ireland:

<http://www.sustainability.ie/magazine.html>

The Guide Beside. An interesting guide to training educators for sustainability: <http://www.vaee.vic.edu.au/guidebeside/about.htm>

UN Cyber School Bus. A global teaching and learning project:

<http://www.un.org/cyberschoolbus/>

UNICEF (Annual) State of the World's Children Report:

[http://www.unicef.org/sowc/index\\_28581.html](http://www.unicef.org/sowc/index_28581.html)

World Commission on Environment and Development (1987) Our Common Future, available here:

<http://www.worldinbalance.net/agreements/1987-brundtland.php>

[< back to top >](#)