

# Part 3: Advent Calendar 2023

## Muinín Catalyst Sustainable STEAM Education for Sustainable Development



### Lessons

Day 11 SDG 11 Build Sustainable Buildings and Communities: DREAM Designs, Building Survey, Lesson 7: Town Analysis 2

Day 12 SDG 12 Responsible Consumption and Production: Passion to Purpose, Lesson 1: What Are Your Passions and Gifts?

Day 13 SDG 13 Awareness of Climate Change: Climate Change Engage, Lesson 3: The Cause of Current Climate Change

Day 14 SDG 14 Life Below Water: The Future of the Ocean, Problem to Pitch - Marine Plastic Waste, Lesson 9: Prototyping 1 - Circular Design and the Life Cycle Analysis

Day 15 SDG 15 Life Above Water: Seeding Sustainability, Examining Edible / Medicinal Plants, Lesson 5: Sacred Trees of Ireland

Day 16 SDG 16 Peace, Justice, and Strong Institutions: Ethical Leadership for the 21st Century, Lesson 2: What Makes an Effective Leader?

Day 17 SDG 17 Partnership for the Goals: Future of Fashion, My fashion Everyone's Fashion, Lesson 4: Considered Design

# DREAM Designs - Building Survey Lesson 7



## BUILDING SURVEY

## LESSON 7

## TOWN ANALYSIS 2

### Lesson Title and Summary: Town Analysis 2

The lesson introduces learners to the importance of the local and how places develop and evolve. A transect walk and map enables groups to observe and document the conditions or environment.

### Vocabulary: Analysis, Belt Transect, Line transect, Observation, Zoning

### In this lesson, the learner will:

- Understand the concept of a transect map
- Develop observational skills
- Practice creating transect maps of the school
- Begin to analyse settlement development

### Materials

- Worksheet: Transect Mapping
- Blank paper
- Pens / pencils
- Access to Google Maps

**4** QUALITY  
EDUCATION



**7** AFFORDABLE AND  
CLEAN ENERGY



**11** SUSTAINABLE CITIES  
AND COMMUNITIES



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION





## ACTIVITY INSTRUCTIONS

### Activity 1 Developing an understanding of transect maps (15 mins)

1. Working in pairs, use pages 1-2 of the Transect map worksheet to gain an understanding of what transect maps are.

### Activity 2 Practice using transect maps (35 mins)

1. Divide learners into new pairs. Assign each pair a section of the school to focus on.
2. Using pages 3-4 of the Transect map worksheet, pairs work through the development of their section's transect map.

### REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the tasks

### EXTENSION / REDUCTION ACTIVITIES:

Reduction 40 mins: For a shorter lesson, undertake Activity 1 as a flipped classroom activity then complete group collation and discussion in class.

Extension 80 mins: For a longer class, students can use nearby locations beyond the school – timings will need to be adapted to suit location.



### **MEDIA BOX: (materials, online video links, extra resources, case studies etc)**

Community led transect maps

<https://catcomm.org/transect-walk/><https://catcomm.org/transect-walk/>

This GCSE geography fieldwork offers good resources for 4th - 6th year students.

<https://www.geography-fieldwork.org/gcse/urban/cbd/fieldwork/>

### **LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS**

Begin discussions around the circular economy and opportunities to implement it locally or if the students are undertaking DREAM Designs, how re-purposing buildings contributes to the circular economy.

Discussion:

- How does a circular economy differ from a linear economy?
- How might a circular economy work in your town / village?
- What opportunities might this have for a repurposed building?

Flipped Classroom <https://www.demilked.com/amazing-repurposed-buildings/>

Students to select a building and discuss it within the context of repurposing, sustainability and circular economies.

# LESSON 7: TRANSECT MAPPING



## What is a transect?

A line following a route along which a survey or observations can be made.

## An urban transect

Usually follows a street or several streets, may show changes in land use, the nature of buildings, such as houses and shops, or features such as schools, churches, community centres, and parks.

## A rural transect

Might follow a road, section line, or stream, and show the kinds of crops in adjoining fields, farm buildings, vegetation, or changing features along a riverbank.

## Have a look at the following four transect maps and discuss...

- What sort of settlement type are they - Urban, Peri-Urban (Suburban) or Rural? Why?
- What can you see in each one? Why do you think they have chosen to include them in the map?
- What do you notice about the different styles?

### MAP 1

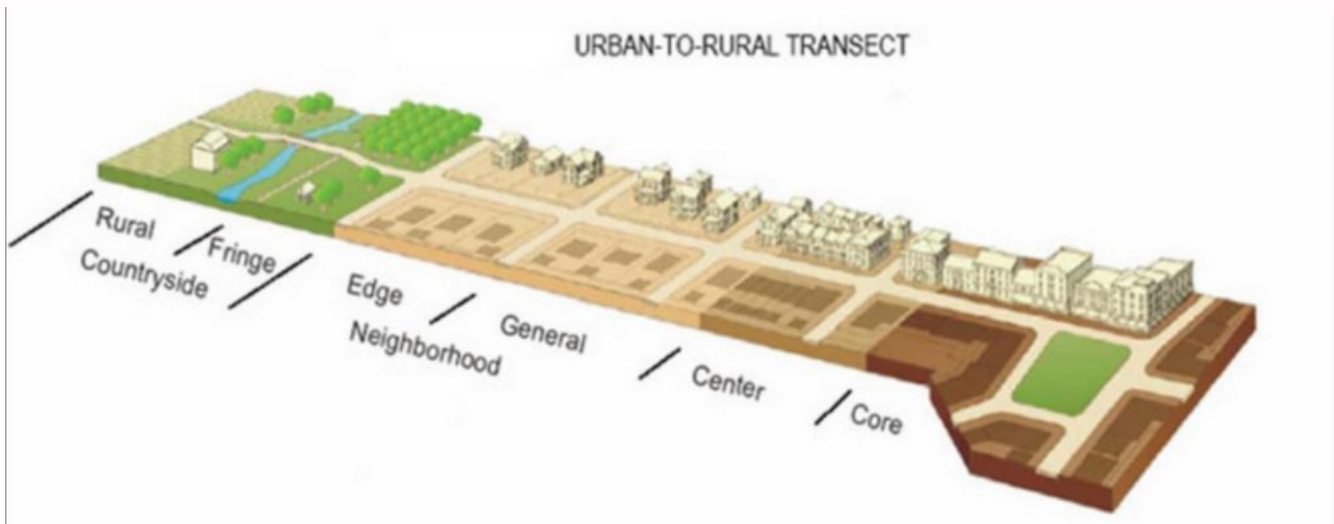


# LESSON 7: TRANSECT MAPPING

MAP 2



MAP 3



# LESSON 7: TRANSECT MAPPING



## MAP 4



### Focus on Maps 2 & 3

1. What do you notice about the differences between these two maps?
2. How are they categorising their observations visually - buildings, activities, landscapes?

**You are going to develop a transect map through the school - a line following a route along which you will make observations.**

### INDOOR

1. Identify your route - its start and end points.
2. What observations will you make along your route? What do you want to find out, e.g. how many bins? number of classrooms? YOU will decide as a group what you are going to observe.
3. You will spend 15 minutes walking and observing - recording your observations along your transect.

### OUTDOOR

1. If the weather is good - select an area in the school grounds.
2. If the weather is bad, use the Google Map on the next page.
3. Decide as a group what observations will be made along your route - trees, shrubs, different surfaces, functions, possible electricity or utility cables, infrastructure, e.g. gas tanks.
4. You will spend 15 minutes walking and observing - recording your observations along your transect.

# SDG 12 Future of Innovation and Enterprise

## Micro Module 1: Passion to Purpose



### MM1: Passion to Purpose

#### Phase 1: Research and Development

#### Lesson 1 What are your Passions

#### Curriculum Areas

CSPE/ SPHE, Design, English and Communication, Environment, Maths, Science, Sustainability, Technology

#### Lesson Title and Summary: What are your Passions and your Gifts?

Identifying what brings you excitement and joy is essential to finding direction. Analysing what we love to explore and learn about helps us find vision and purpose by identifying what things and people we love are. Like a puzzle, our vision holds the larger picture and our passions, gifts and talents, or otherwise known as strengths, are the pieces of the puzzle that lead to a purposeful life and work journey. In this lesson, learners will begin to develop self awareness and gain an understanding of their purpose or vision and in doing so, develop skills in increasing social awareness.

#### Vocabulary:

Passions, Gifts, Talents, Values, Purpose, Vision

#### In this lesson, the learner will:

- begin to develop self awareness
- gain understanding of the concept of "purpose" and "vision" in relation to project development, employability/entrepreneurship
- develop skills in increasing social awareness
- engage in relationship building

#### Materials

- Worksheet: Passions and Gifts
- Teacher's notes: Passions and Gifts
- Post It notes





# Micro Module 1: Passion to Purpose

## Lesson 1 What are your Passions and Gifts?



### Activity Instructions

#### Activity 1 Lead In (10 mins)

1. Ask learners to discuss the following three questions in pairs.
  - What might be examples of things people LOVE or DETEST doing or being?
  - What might be examples of things people do well or excel at doing or being?
  - What might be examples of things people consider important?
2. Briefly elicit general answers from the class adding them to the board.

#### Activity 2 Passions and Gifts (15 mins)

1. For this activity, learners will explore their perception of self and confidence. Encourage learners to define their meaning of key terms "passions" "gifts/talents" using their own words.
2. Next, direct learners to take time to consider what their passions and gifts are by considering and completing responses to statement stems on their Worksheet: Passions and Gifts.
3. Go through each statement to check understanding and clarify as needed before learners begin the task.
4. NOTE: many learners find this activity particularly challenging and therefore may need additional support. Make sure prior to going through the instructions that you highlight to learners to ask for help if they are feeling challenged.

#### Activity 3 DEEPER UNDERSTANDING (25 mins)

1. In a pairs, learners share their self observations and discuss further their rationales for their statements. Learners are directed to be prepared to share their offerings in groups and use question prompts to aid discussion. To complete this task they must nominate: a group leader to ensure all members have opportunity to speak and that time is kept to complete task, a speaker who will summarise the groups discussion for the class, a note taker whom will take notes for the speaker to summarise from.

#### REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

Rather than use Post-its you also can set this up as a mentimeter poll [www.mentimeter.com](http://www.mentimeter.com)

# Micro Module 1: Passion to Purpose

## Lesson 1 What are your Passions and Gifts?



### EXTENSION / REDUCTION ACTIVITIES

**Reduction:** For a shorter class, reduce timing of Activity 3 and set final reflections as an at-home writing task.

**Extension:** For a longer class: Learners will continue working in their groups of 3. Instruct them to brainstorm responses to the prompts, see worksheet Passions and Gifts. Learners should conduct brainstorming as a discussion with learners recording their ideas in a mind map, a flow chart or using post notes. This work encourages conditional reasoning and deductive equivalents; an essential skill for project management and team working with problem solving.

**Option B:** Watch the Video: Where Passion Comes From - see media box and follow with a class discussion

### MEDIA BOX: (materials, online video links, extra resources, case studies etc)

VIDEO: 'Where Passion Comes From' | Simon Sinek [4:47 min]

<https://www.youtube.com/watch?v=zoMQaru8zU4>

Video 'Spheres of Influence Explainer' Video: [6:38 min] [https://www.youtube.com/watch?v=CZt3QkRE\\_SA](https://www.youtube.com/watch?v=CZt3QkRE_SA)

ARTICLE 'Passions and Gifts', By Ford R. Myers, President, Career Potential, LLC

<https://careerpotential.com/career-advice-article/passions-and-gifts/>

VIDEO 'How I Quit My Job' | Pursuing Your Passion [24:38 min]

<https://youtu.be/InIQGOinPFo>

### Local Trip / Expertise / Additional Work and Assessments

Watch the Spheres of Influence Explainer Video and encourage learners to choose 3 people from different areas of their Spheres of Influence and interview them using the prompts in the worksheet from this lesson. This activity will further develop perspective-taking and relational thinking, which they can then summarise in writing up their findings .



## What are your passions and gifts?

- Looks at the key terms below and try to define their meaning.
- You may consult a dictionary to assist you.

passions



gifts/talents

- Following the direction from your teacher take time to think about and then complete the statement stems you see below:

### Passions and Gifts Statement Stems:

1. At school/ work, I love to ...
2. I feel passionate about ...
3. I am excited about ...
4. What I really like is ...
5. My greatest contribution is ...
6. I am particularly good at ...
7. I am known for ...
8. I have an exceptional ability to ...
9. People often ask for my help with ...
10. What motivates me most is ...
11. I would feel disappointed, frustrated or sad if I couldn't do ...



- **What observations can you make about yourself at this stage?**
- **Share your thoughts with a partner**



## Deeper Understanding

- In a pairs share your self observations and discuss further your rationales for your statements. Be prepared to share your offerings in groups and use question prompts to aid in discussion.
- To complete this task you must nominate:
  - 1.- a group leader to ensure all members have opportunity to speak and that time is kept to complete task
  - 2.- a speaker who will summarise the groups discussion for the class
  - 3.- a note taker whom will take notes for the speaker to summarise from

**ATTENTION  
PLEASE!**

**Note for speaker: when debriefing the class the speaker must note any similarities between the members' responses.**

### Question prompts

What responses did you give to the statement stems?

Explain why you chose this response?

What, if anything, did you find challenging in responding? Why?

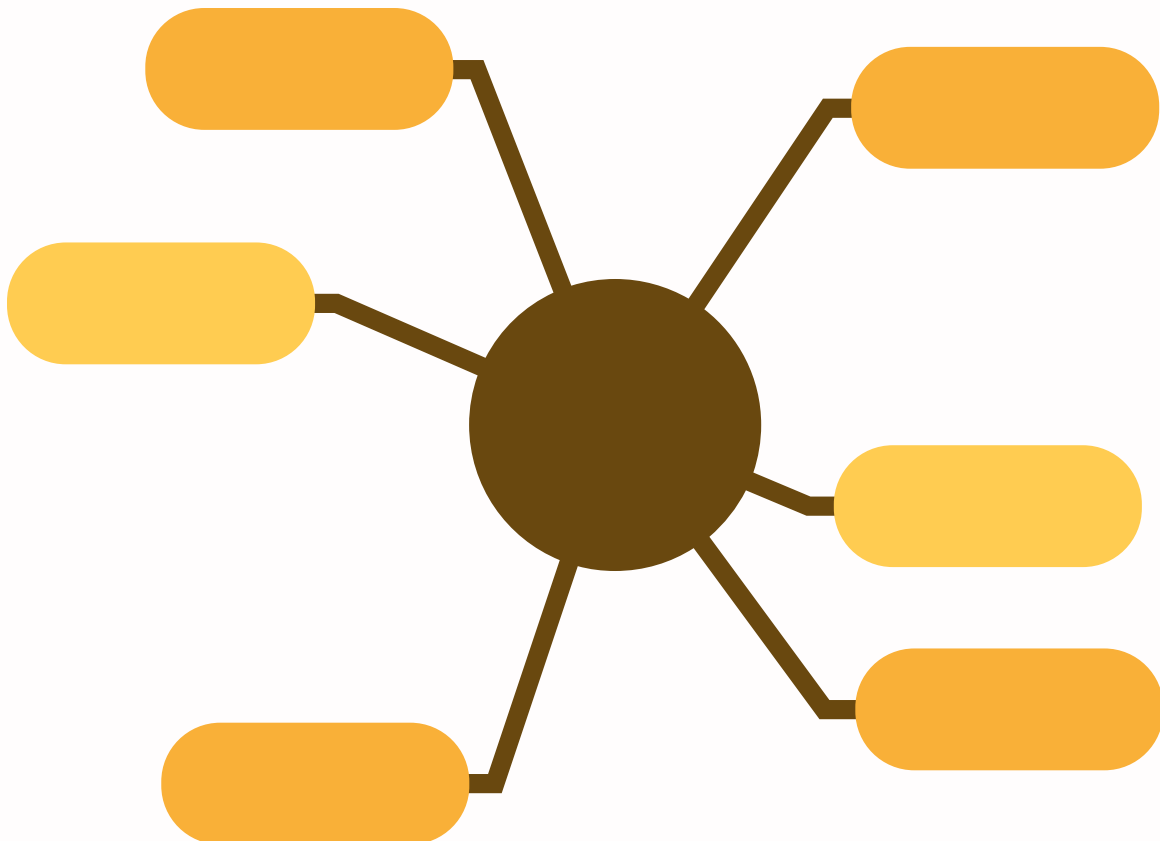
What responses do your group members have in common?

What was surprising about the responses?



## EXTENSION ACTIVITY: Connecting Passions and Gifts

1. Brainstorm responses to these question prompts in groups of 3.
  2. Record your ideas visually using a mind map or flow chart or other visual representation.
- When we combine our passions with our gifts/talents what do you think the result could be?
  - How is our behaviour and actions linked to our passions and gifts?
  - What steps could someone take to make their passion something they can succeed in professionally in the future?
  - What kind of things do you do or others do that inspire and make you feel part of something meaningful?
  - What impact might they like to make on others?





## WHAT ARE YOUR PASSIONS AND GIFTS?

What are your passions and gifts?

**NOTE:** many learners find this activity particularly challenging and therefore may need additional support. Make sure prior to going through the instructions that you highlight to learners to ask for help if they are feeling challenged.

**Passions and Gifts Statement Stems:**

At school/ work, I love to ...

I feel passionate about ...

I am excited about ...

What I really like is ...

I am particularly good at ...

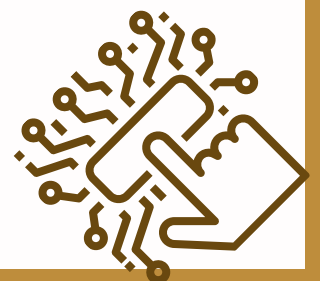
I am known for ...

I have an exceptional ability to ...

People often ask for my help with ...

What motivates me most is ...

I would feel disappointed, frustrated or sad if I couldn't do ...



# Introduction to Game Design - Lesson 3



## Climate Change Engage

### Lesson 2

### Micro-lesson: What is Climate Change?

4 QUALITY EDUCATION



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



## Lesson Title and Summary: The Cause of Current Climate Change

In this lesson, learners are introduced to the current causes of climate change. Through an exploration of the process of energy transport (radiation), the relationship between greenhouse gases and how heat is trapped, learners will develop an awareness on the causes of global warming and how this contributes to contemporary climate change.

This lesson builds on lesson 2 providing concrete knowledge learners might integrating into their game design.

## Vocabulary: Concentration; Greenhouse Gas; Infrared (heat) Radiation; Visible Light

### In this lesson, the learner will:

- Understand the difference between radiation from the sun and radiation from the Earth's surface and objects surrounding us
- Understand that the atmosphere is transparent to visible light, but not to infrared radiation.
- Be able to explain the greenhouse gas effect
- Understand what can change the amount of energy in the climate system and thus change the climate

### Materials

- Video: 'The Cause of Current Climate' Change
- Support: Lesson 2-4 Teacher's Notes
- Internet access
- Pens, pencils
- paper
- Blackboard / Whiteboard

# Introduction to Game Design - Lesson 3



## Activity Instructions

### Activity 1 : Showing changes in solar radiation and infrared radiation (40 mins)

1. Divide the learners into groups of 3-4.
2. Play video: 'The Cause of Current Climate Change' up until 2:20 mins. Encourage learners to make notes on the key ideas. Ask groups to discuss the following questions:
  - What is changing solar radiation?
  - What is changing greenhouse gas concentrations that trap infrared radiation?
  - Ask learners to look up what 'concentration' means if they don't know.

Go over each question as a whole class. Refer to Lesson 2-4 Teacher's Notes for support.

3. Watch the rest of the video, making notes on key ideas.
4. Discuss the following questions in their groups:
  - What processes increase the energy in the climate system?
  - Could there also be processes that decrease this energy?
  - What would these be?

Go over each question as a whole class. Refer to support: 'Lesson 2-4 Teacher's Notes'

5. Watch the video again in full, explaining that each group is going to produce an illustrated diagram to show the changes in solar radiation and infrared radiation. Ask learners to make more notes while watching the video a second time to gain more information on the changes in solar and infrared radiation.
6. Allow 10-15 minutes for the groups to work on their draft diagrams.
7. Swap draft diagrams with another group to compare ideas. Return drafts and work on a final version.
8. Share final versions of diagrams as a whole class. Discuss what is good about each diagram and what it highlights well.

### Activity 2 Connecting Climate to Game Design (10 mins)

1. In small groups, consider how they could use this new information in the diagram in their game design. Brainstorm ideas.
2. Mix up the pairs and share and compare ideas.

### REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities



# Introduction to Game Design - Lesson 3



## EXTENSION / REDUCTION ACTIVITIES

Reduction: for a shorter lesson, complete Activity 1 only.

Extension: for a longer lesson, complete Activity 1 and 2, then watch the video 'Understanding the Greenhouse Effect' (see Media Box). Conduct a simple Greenhouse Effect experiment - see Local Trip / Expertise / Additional Work and Assessments box.

Alternatively, the experiment can be conducted in the following lesson.

For an additional lesson play the Climate Negotiation Game:

<https://www.metlink.org/resource/climate-change-negotiations-for-schools/>

## MEDIA BOX: (materials, online video links, extra resources, case studies etc)

The Cause of Current Climate Change (4:49min) <https://youtu.be/4j5Qi1Sm0rw>

Understanding the greenhouse effect (7:09mins)

<https://www.museumoftheearth.org/changing-climate/greenhouse-effect>

Article: Undertake a simple greenhouse experiment

<https://www.familyeducation.com/school/global-warming/greenhouse-effect-experiments>

The long and short of transmission and absorption (4:37 minutes): <https://www.priweb.org/teach-climate-science-gallery/the-long-short-of-absorption-transmission>

## Local Trip / Expertise / Additional Work and Assessments

Undertake a simple greenhouse experiment - as a class or in pairs

- Line a large open bowl with dark cloth or paper.
- Place the bowl in the sun and put an inverted paper cup in the bowl. Lay a thermometer across the top of the cup so that you are measuring the air temperature in the bowl.
- Note the temperature.
- Cover the bowl with a sheet of clear plastic wrap over the top of everything. Note the new temperature reading. The increase in air temperature is due to the trapped heat.

## LESSON 2 - 4 THEMES AND EXTRA REFERENCES

13 CLIMATE ACTION



**LESSONS 2 - 4 ARE THREE INTERLINKED LESSONS AROUND THE FUNDAMENTAL CONCEPTS OF CLIMATE CHANGE :**

- **WHAT IS CLIMATE CHANGE?**
- **THE CAUSE OF CURRENT CLIMATE CHANGE**
- **CLIMATE ACTION: ADAPTATION AND MITIGATION**

### LESSON 2 - WHAT IS CLIMATE CHANGE?

Climate is the long-term average weather conditions over time and their variation. When we change the climate, we are changing this average weather pattern. With current climate change, the earth is getting rapidly warmer.

We are experiencing sea level rise, higher, more intense rainfall, and more extreme weather events like heat waves, droughts, flooding, wildfires and storms with high winds. These events make it more difficult to farm, which may impact food supplies.

Changing the climate displaces plants and animals from places that they used to live in and may expose them to novel disease. The adverse effects of climate change can make us anxious as we are not sure what is to come and how we will deal with these changes. Talking about these feelings and finding community in living through and adapting to the change is very important.

The media box resources also contains a link to the film 'Before the Flood' which is a useful background summary. This is available for renting so maybe something that is integrated into TY as a general all pupil activity it looks at the sources, techniques, media and impact with a mostly American perspective but does include China, India, Indonesia, and the Pacific islands.

### LESSON 3 - WHAT IS THE CAUSE OF CURRENT CLIMATE CHANGE?

The climate is driven by the amount of energy that drives the climate system. Energy is transported from the sun mainly in the form of visible light, whereas once this energy is absorbed at the Earth's surface it is transported from object to object in the form of infrared radiation.

The climate can be changed for two reasons; either there is more solar radiation received on Earth and/or there are more greenhouse gases in the atmosphere that keep infrared radiation in the atmosphere.

Changes in greenhouse gas concentrations in the atmosphere are due to human activities such as burning of fossil fuels, but also land use changes such as deforestation, soil degradation, draining of peatlands, and livestock agriculture as well as natural processes such as volcanic eruptions and meteorite impacts.

Changes in solar radiation are mostly due to changes in the distance of the earth to the sun, which happens on a geologic time scale. However, some variation is due to changes in solar activity and now the melting of snow and ice on Earth, as this decreases the amount of sunlight reflected.

## LESSON 2-4 THEMES AND EXTRA REFERENCES

13 CLIMATE ACTION



### LESSON 4 - CLIMATE ACTION- MITIGATION AND ADAPTATION?

Climate action is twofold, we have to reduce greenhouse gas emissions but we also have to adapt to the new climate that we have created by our greenhouse gas emissions. Our greenhouse gas emissions per person are higher in Ireland than elsewhere in the EU and much higher than elsewhere in the world. We are emitting more than our fair share. We are emitting more than our fair share. To cut our greenhouse gas emissions we need to measure our carbon footprint, so we know what activities emit them.

Generally, everybody can help reduce greenhouse gas emissions by organising for climate action, choosing green transport, saving energy consuming less, helping nature and eating less meat and dairy products. This lesson introduces learners to the concepts of mitigation and adaptation, as well as encouraging climate action.

**Mitigation:** Mitigation: In order to reduce greenhouse gas emissions, we need to become aware as to where these emissions come from. The most abundant greenhouse gas that is contributing the most to global heating is carbon dioxide (CO<sub>2</sub>). CO<sub>2</sub> is a gas we breathe out after we produce metabolic energy in our bodies. It is produced when we burn wood or fossil fuels, like oil, coal and gas, so it is produced when heating our homes and in transport and energy systems. Drained (and harvested) peatlands also emit large amounts of CO<sub>2</sub>.

Methane (CH<sub>4</sub>) is the second most abundant greenhouse gas. It is an important contributor to greenhouse gas emissions in Ireland as livestock agriculture produces a lot of methane (CH<sub>4</sub>) through digestion (cows burping it out of their stomach) and from manure.

**Adaptation:** we need to live with higher sea levels and more extreme weather events, so we need to prepare for this. Ideally, we would do so by helping nature to help us, e.g. giving more space for nature in coastal ecosystems or flood plains.

#### Lesson 4 Case Study support:

Case study 1: Seagrass: restoring seagrass in Kilmore Quay, County Wexford (interview with a 7-year old boy and other participants in seagrass restoration project by Coastwatch (the Irish Coastal Environmental Group): <https://fb.watch/eb---r3uy7/> (RTE news, September 2021).

In this project, volunteers removed the invasive seaweed *Sargassum muticum* from seagrass meadows to allow light onto the seagrass). Coastwatch relies on volunteers to survey the coasts for seagrass presence, for seagrass restoration and for picking up litter around the coast. Benefits in terms of climate mitigation: seagrass is very efficient at capturing CO<sub>2</sub> from the atmosphere. Benefits in terms of climate adaptation: seagrass slows the action of waves and reduces coastal erosion.

Case study 2: Coastal dune: the Inchydoney Dune Conservation Project, Cork is educating the public about the impact of walking in the dunes can lead to erosion of the dunes. They are taking measures to recover eroded dunes and protect existing dunes from further erosion and organising beach clean ups. Benefits in terms of climate mitigation: some

## LESSON 2-4 THEMES AND EXTRA REFERENCES



carbon capture by dune grass. Benefits in terms of climate adaptation: dunes provide a natural barrier against coastal flooding and erosion.

- <https://www.southernstar.ie/news/our-dunes-are-dying-but-if-we-move-quickly-we-can-save-them-4218106>
- <https://www.facebook.com/Inchydoney-Dunes-Conservation-Group-101291461965770/>

### References:

Blondel, J. (2019). How do birds adapt to a changing climate? Encyclopedia of the Environment. Institute de France, Académie des Sciences, University Grenoble Alpes. This webpage <https://www.encyclopedie-environnement.org/en/life/how-birds-adapt-changing-climate/> explains in detail how birds will be affected by climate change. Last accessed: June 2022.

Climate change post (2022). Ireland. <https://www.climatechangepost.com/ireland/>  
The Ireland page contains links to footages of floods in Ireland on YouTube. There is also a specific write-up of coastal flood risks: <https://www.climatechangepost.com/ireland/coastal-floods/>

Devictor, V., Van Swaay, C., Brereton, T., Brotons, L. s., Chamberlain, D., Heliölä, J., . . . Jiguet, F. (2012). Differences in the climatic debts of birds and butterflies at a continental scale. *Nature Climate Change*, 2(2), 121-124. doi:10.1038/nclimate1347

Friedlander, B. (2021). Seven years of agricultural productivity growth lost due to climate change. Stanford Woods Institute for the Environment adapted from Cornell Chronicle. This website <https://woods.stanford.edu/news/seven-years-agricultural-productivity-growth-lost-due-climate-change> summarises the agriculture losses observed over the period 1961-2020 Last accessed: June 2022.

Maynooth University (2022). Press release: <https://www.maynoothuniversity.ie/news-events/maynooth-university-research-confirms-elevated-rates-sea-level-rise-dublin>

NOAA (2021). How does climate change affect coral reefs? National Ocean Service website, This website <https://oceanservice.noaa.gov/facts/coralreef-climate.html> contains an infographic that explains the impact of climate change and other human activities on coral reefs. Last accessed: June 2022.

Ortiz-Bobea, A., Ault, T. R., Carrillo, C. M., Chambers, R. G., & Lobell, D. B. (2021). Anthropogenic climate change has slowed global agricultural productivity growth. *Nature Climate Change*, 11(4), 306-312. There is also a short video where Ariel Ortiz-Bobea explains his research <https://news.cornell.edu/stories/2021/04/climate-change-has-cost-7-years-ag-productivity-growth>

Walsh, S. (2012). A summary of climate averages for Ireland, 1981-2010. Climatological note no. 14. Met Éireann. Retrieved from <http://hdl.handle.net/2262/70490>

# SDG 14 Problem to Pitch – Lesson 9



## SDG 14 P2P Marine Plastic Waste

### Lesson 9 Design Thinking -

### Prototyping 1.0 Circular Design and the Life Cycle Analysis

### Design, Technology, Maths Environment, Science, Sustainability



#### **Lesson Title and Summary: Prototyping 1 - Circular Design and the Life Cycle Analysis**

In this lesson, learners are asked to consider a product case study for its sustainability and learn how to break down the 'system' in which the design / product is part of.

Learners will then apply this skill to thinking about their own possible ideas by undertaking a life cycle analysis by considering the inputs processes and inputs involved.

#### **Vocabulary: Inputs; Life Cycle Analysis, Outputs, Processes, Systems thinking**

#### **In this lesson, the learner will:**

- Learn more about the circular economy and circular design
- become aware of the concept of design systems and systems thinking
- understand the potential of design interventions for sustainability
- develop system thinking and system analysis skills
- begin to consider their design interventions from a systemic perspective

#### **Materials**

- Worksheet: Product Case Study
- Worksheet: Life Cycle Analysis Zoning map
- Pens
- Pencils

# SDG 14 Problem to Pitch – Lesson 9



## Activity Instructions

### Activity 1 Introduction to Circular Economy and the Life Cycle Analysis (20 mins)

1. Watch the Video - The circular economy: A new way to design, make, and use things (3:50 mins).
2. Discuss the video with the learners and how this might lead to design innovations.
3. Organise learners into groups of 2 or three depending on the class size.
4. In their groups, ask them to undertake the Product Design Case Study Life cycle analysis.
5. Ask each group to summarise their findings on poster paper and present their findings by putting them on the wall and everyone to look at them.
6. Ask teams to photograph their answers and upload to Microsoft teams. It is important everyone can all see the answers and think about them.
7. Keep their poster papers for reflection during prototyping and developing their ideas.

### Activity 2 – Life Cycle Analysis of Fishing Nets - (25 mins)

1. Organise learners into groups of 2 or 3.
2. Using the information from lesson 2 on Net Manufacturing, ask groups to select (or assign) one of the following; Inputs, Processes and Outputs.
3. Learners will then use the relevant Zone mapping Life Cycle Analysis sheet and map relationally the various research findings.
4. Ask teams to photograph their sheets and upload to Microsoft teams so everyone can all see the answers and think about them.

### REFLECTIVE EXERCISE: 3-2-1 (10mins)

Three things they feel they have learnt from the tasks

Two things they found most interesting and would like to explore more

One – their opinion they have about the tasks

# SDG 14 Problem to Pitch – Lesson 9



## EXTENSION / REDUCTION ACTIVITIES

**Reduction:** For a shorter class, undertake activity 1 only with an extended discussion about the case study.

**Extension:** For a longer class, watch The Vision for a circular Economy for Plastic as activity 3 and ask learners to think about their ideas and where they need to be more circular.

**Flipped Classroom Option:** Watch - Explaining Circular Economy: Best Real-Life Examples | The Circular Economy Show Episode 11 <https://www.youtube.com/watch?v=Yvsps9DhVcw>

Ask learners to consider and be ready to share which was their favourite example and why and what their 'take away' was for their ideas.

## MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- The circular economy: A new way to design, make, and use things (3:50mins) <https://www.youtube.com/watch?v=ZlAYu-N98tl>
- The vision for a circular economy for plastic (8:50Mins) <https://www.youtube.com/watch?v=xmTQA-RNygQ>
- Fishy Filaments [www.fishyfilaments.com](http://www.fishyfilaments.com)
- Fishing Net Recycling <https://www.keepbritaintidy.org/uk-fishing-net-recycling>
- Circular Business Models 1 - Types of Product Service System (3:31Mins) [https://www.youtube.com/watch?v=QAWJLu0d6\\_I](https://www.youtube.com/watch?v=QAWJLu0d6_I)

Examples of Circular Design and Business Models

- Gerrard St Headphones <https://www.youtube.com/watch?v=S94o9hZ2os0>
- Terracycle (1:68min) <https://www.youtube.com/watch?v=zEND9KG67PM>

## Local Trip / Expertise / Additional Work and Assessments

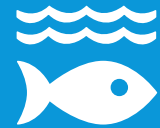
Learners could contact Ireland's Net Makers CarryMacarry Nets, KT Nets and Swan Net Gundry all in Donegal and ask them:

- about their design processes and how they are managing their waste
- have they introduced circular design into their processes
- how have they engaged with the single use plastic directive

Contact the local County Council's environment / utilities officer and ask about their recycling policies. Invite them to discuss the local authorities work on SDG 14.

## LESSON 9 PRODUCT CASE STUDY LCA

14 LIFE BELOW WATER



Consider the complete lifecycle of two nylon jackets and plot their life cycle on the Life cycle analysis chart.

Jacket A Tesco jacket  
Cost 69.99



This jacket is made from a number of different materials including virgin nylon, virgin polyester and PET polyester thinsulate filling.

Nylon/Polyester: Lining is virgin polyester shell is raw virgin nylon. Filling is PET polyester thinsulate.

Fibre made in China. Jacket made in Bangladesh.

Transported by land and sea to a warehouse in Manchester, UK.

Purchased in Manchester at a Tesco store.

Machine Washed at home at 30 degrees.

Discarded after 1 year of wear because seams are unravelling. Jacket is sent to landfill.

Jacket B. Infinity Jacket Napapiji  
Cost 250



The material in this jacket is a mono-material: its filling and trims are made from Nylon 6, while its fabric is made from ECONYL® Regenerated Nylon, a high-performance nylon 6 yarn recycled from discarded fishing nets and other waste materials.

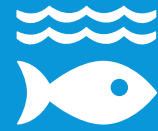
Fibre Made in Slovenia. Jacket made in Slovenia.

Transported by land and sea to a warehouse in Italy. Purchased online.

Spot Washed at home.

Jacket is worn for 2 years and returned to manufacturer. Through a digital take-back programme the jacket can be returned and recycled into a new garment. ECONYL® Regenerated Nylon can be recycled again and again.

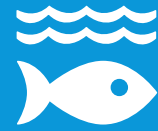




Each phase of the lifecycle should be carefully considered when scoring the jackets on the chart on p3.

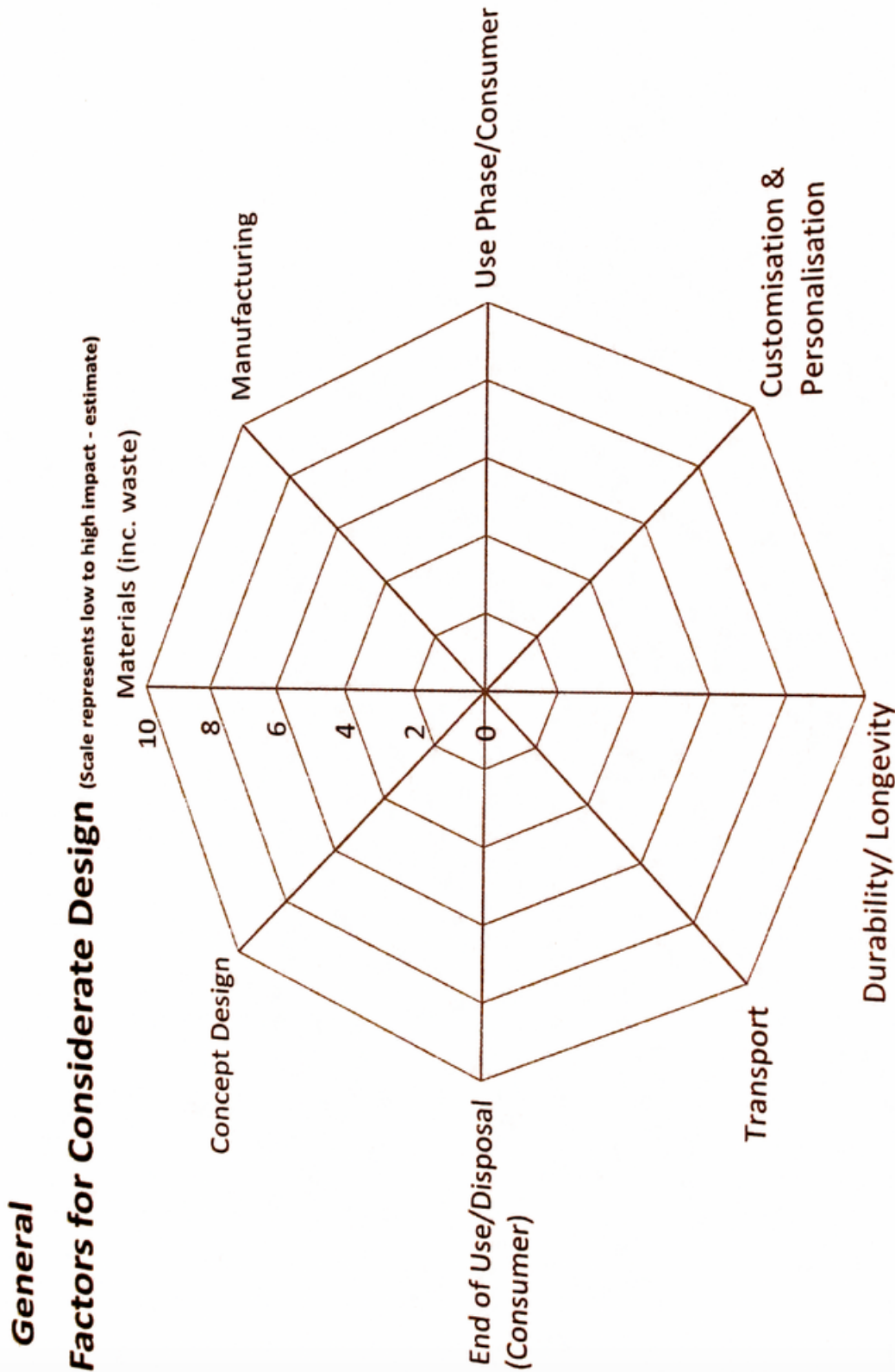


- Concept design: Overall need for the product.
  - Materials: How important are the processes and considerations of the materials used?
  - Reducing waste: What will happen at the end of life? And how can this consideration be anticipated at the beginning of the lifecycle?
  - Manufacturing: New technologies for increasing productivity, increasing sustainable impact, factory conditions. Where is this garment made?
  - Transport: How far does this garment travel? Where is the fabric produced? Where is the garment manufactured, etc.?
  - Use phase: Laundry: What levels of Behavioral change might prolong the life of this garment?
- Customisation and personalization: Does this garment have scope for personalization? Adding or taking away elements that might give it added value?
- Durability/ Longevity: How long will this garment last? How can you prolong its life? End of Life/ Start of new life, what about new tech for recycling garments and sorting garments? What is the best case scenario and what is worse?
  - End of Use/ Disposal: Reducing waste: Build this into the design. What will happen at the end of life? And how can this consideration be anticipated at the beginning of the lifecycle?



Each phase of the lifecycle should be carefully considered:

Please score out of 10 for each category with high marks being the worst- case scenario and low marks being the best- case scenario. Add up your scores. Use a different colour pen for each jacket



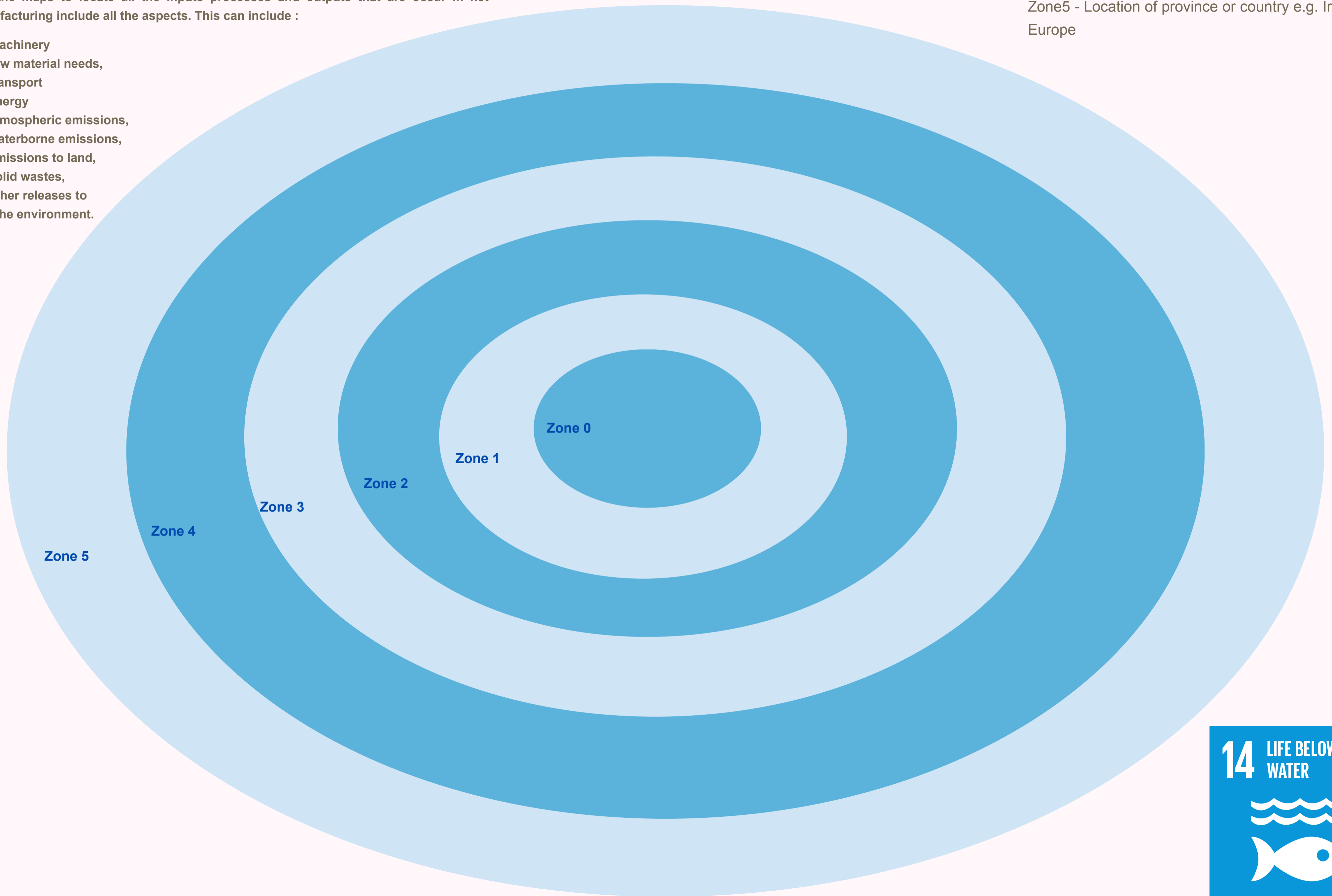
# INPUTS ZONE MAP EXERCISE

A zone map allows us to start from ourselves Zone 0 (our project or our town) and include other people, places or things in relationship to ourselves Zone 1 - 5.

Use the maps to locate all the inputs processes and outputs that occur in net manufacturing include all the aspects. This can include :

- machinery
- raw material needs,
- transport
- energy
- atmospheric emissions,
- waterborne emissions,
- emissions to land,
- solid wastes,
- other releases to the environment.

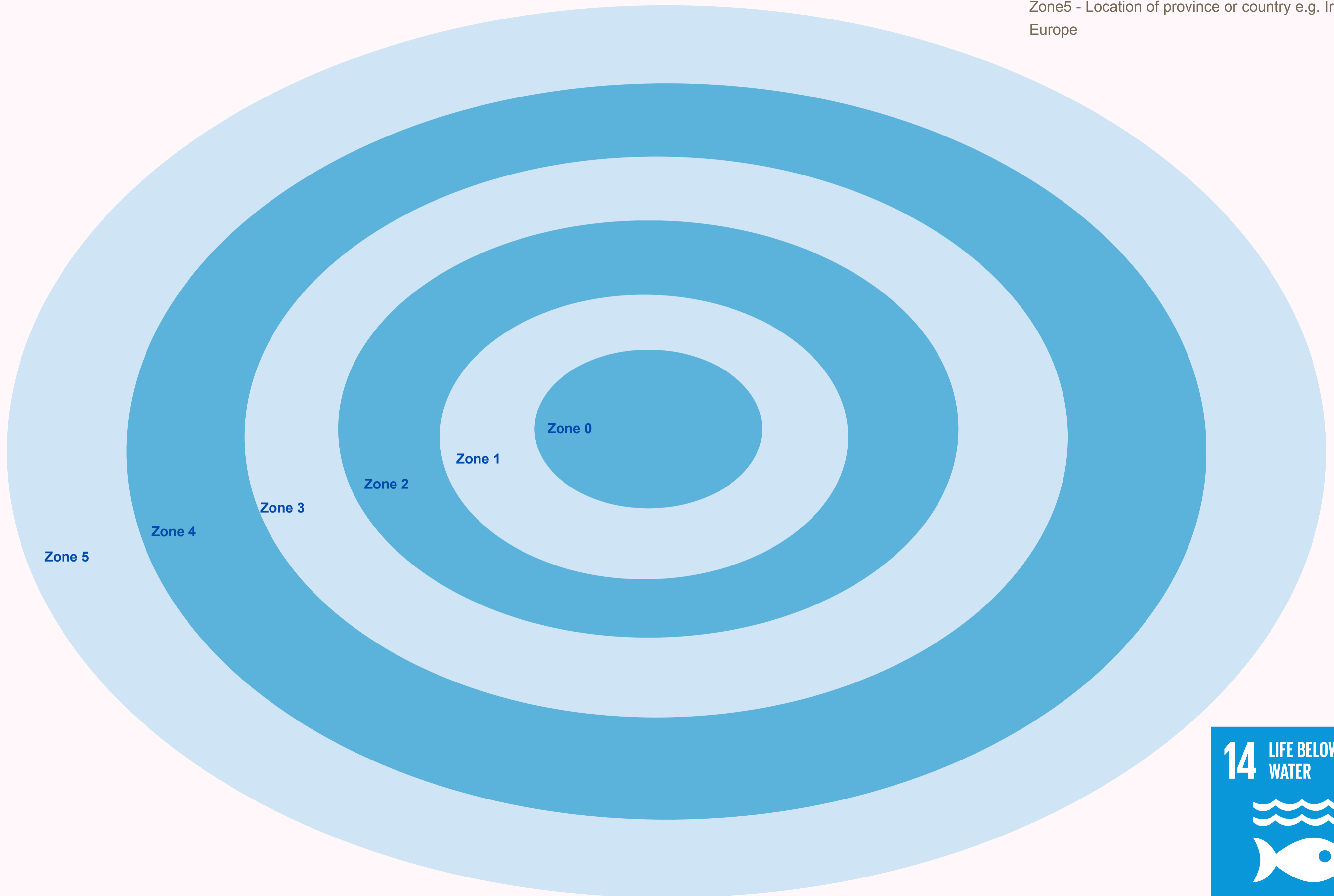
- Zone 0 - the self, the project
- Zone 1 - Location of project e.g. school or town
- Zone 2 - Location of school or town
- Zone 3 - Location of town e.g. Iveragh, Kerry
- Zone 4 - Location of county e.g. Munster or Ireland
- Zone 5 - Location of province or country e.g. Ireland or Europe



# PROCESSES ZONE MAP EXERCISE

A zone map allows us to start from ourselves Zone 0 (our project or our town) and include other people, places or things in relationship to ourselves Zone 1 - 5.

- Zone 0 - the self, the project
- Zone 1 - Location of project e.g. school or town
- Zone 2 - Location of school or town
- Zone 3 - Location of town e.g. Iveragh, Kerry
- Zone 4 - Location of county e.g. Munster or Ireland
- Zone 5 - Location of province or country e.g. Ireland or Europe



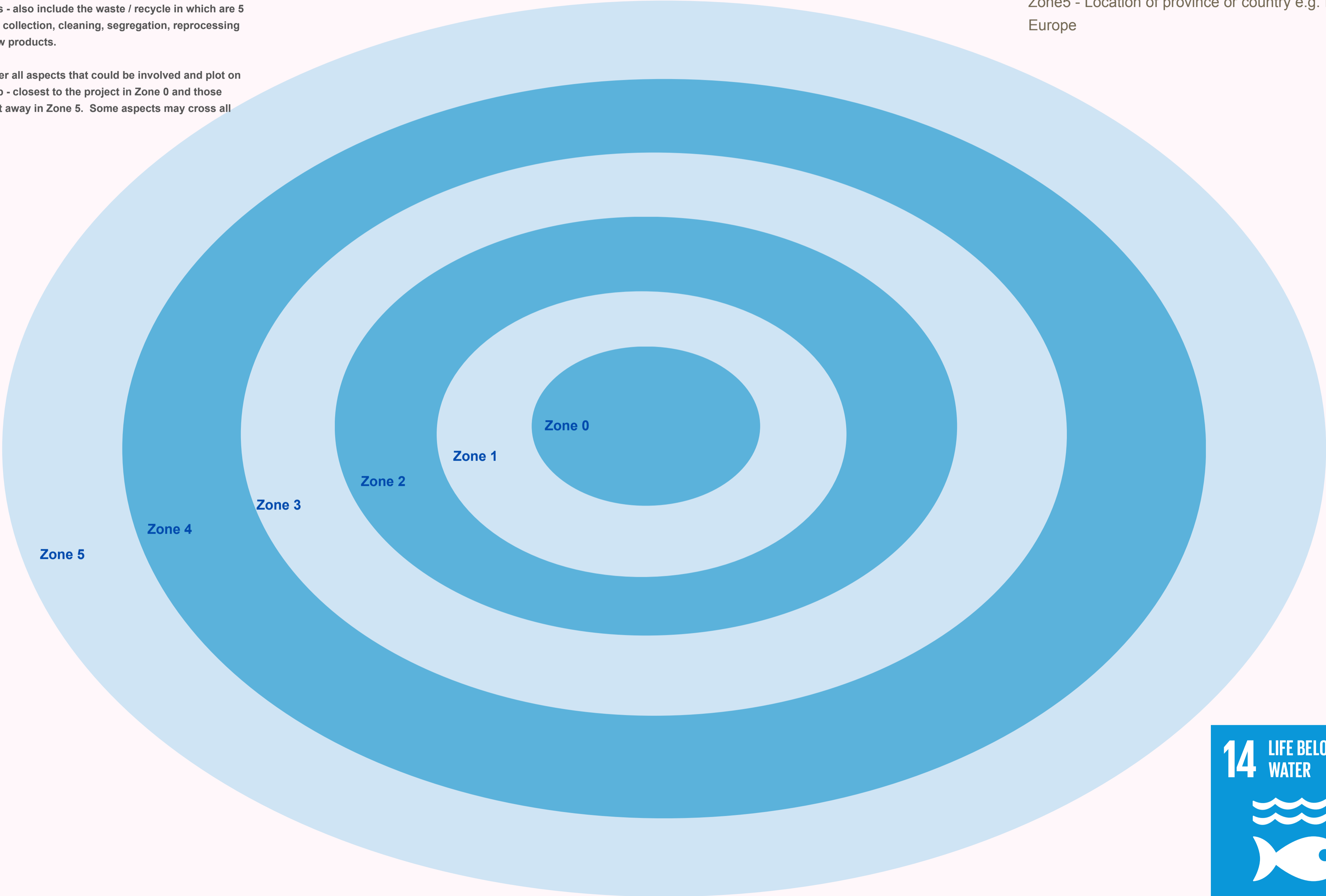
# OUTPUTS ZONE MAP EXERCISE

A zone map allows us to start from ourselves Zone 0 (our project or our town) and include other people, places or things in relationship to ourselves Zone 1 - 5.

Outputs - also include the waste / recycle in which are 5 stages: collection, cleaning, segregation, reprocessing and new products.

Consider all aspects that could be involved and plot on the map - closest to the project in Zone 0 and those furthest away in Zone 5. Some aspects may cross all zones.

- Zone 0 - the self, the project
- Zone 1 - Location of project e.g. school or town
- Zone 2 - Location of school or town
- Zone 3 - Location of town e.g. Iveragh, Kerry
- Zone 4 - Location of county e.g. Munster or Ireland
- Zone 5 - Location of province or country e.g. Ireland or Europe



# Seeding Sustainability - Examining edible/medicinal plants



## Lesson 4 Sacred trees of Ireland

**Subjects: CSPE; English;  
History; Geography**

### **Lesson Title and Summary: Sacred trees of Ireland**

Many types of trees found in the Celtic nations are considered to be sacred, whether as symbols, or due to medicinal properties, or because they are seen as the abode of particular nature spirits. This lesson will support learners' understanding of sacred trees in Ireland by developing their own research questions. They will practice dividing up tasks and sharing workload, as well as assessing the reliability of the sources they choose to use in their research.

**Vocabulary: Driving Question; Sacred Trees; Ash (Fuinseog); Elder (Trom); Hawthorn (Sceach Gheal); Hazel (Coll); Oak (Dair); Rowan (Caorthann); Sacred**

### **In this lesson, the learner will:**

- identify native Irish trees
- develop an awareness of sacred trees in Ireland
- practise developing questions to drive research
- work individually and in groups to answer questions
- skim and scan sources for information
- assess source credibility
- organise time and work roles within a group

### **Materials**

- Access to the Internet
- Supporting Skills Worksheet: C.R.A.A.P Test

**2** ZERO HUNGER



**12** RESPONSIBLE CONSUMPTION AND PRODUCTION



**13** CLIMATE ACTION



**15** LIFE ON LAND



# Seeding Sustainability - Examining edible/medicinal plants



## ACTIVITY INSTRUCTIONS

### Activity 1 What can we learn from the sacred trees of Ireland? (15 mins)

#### 1) Think-Pair-Share (5 mins)

- Spend 30 seconds individually writing down the names of any native trees in Ireland.
- Share ideas with a partner.
- As a whole class, share the names of native trees in Ireland in a brainstorm on the board.
- What do you know about these trees?

#### 2) What can we learn from the sacred trees of Ireland? (10 mins)

- Tell the learners they are going to focus on 6 native-Irish trees: Oak (Dair) - Hazel (Coll) - Rowan (Caorthann) - Ash (Fuinseog) - Hawthorn (Sceach Gheal) - Elder (Trom).
- As a whole class, develop 5 driving questions to discover what we can learn from these trees. List the questions on the board. Write down any and all ideas first and then narrow them down.

*NOTE: Driving questions are open-ended questions we use to investigate something. They have multiple correct answers, look at different viewpoints and require research of more than one source before we definitely answer. For example, as we are focusing on edible-medicinal plants in this micro-module, a driving question could be 'how can these trees support our health?'.*

### Activity 2: Research Time (35 mins)

- 1) Divide learners into 6 groups and assign each group a tree from the list in Activity 1.
- 2) Each group needs to find answers to the 5 driving questions about their assigned tree. They can divide the workload, however they wish (e.g., each learner could focus on one question or they could work in pairs within their group to answer all the questions and compare information at the end).
  - It is important that the learners are aware of credible research sources. Use SDG4 Supporting Skills Worksheet: C.R.A.A.P to help support learners with this.

### REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

## Seeding Sustainability - Examining edible/medicinal plants



### EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, focus on Activity 1. At the end of the lesson, assign each learner a tree to focus on and ask them to complete Activity 2 at home, before the next lesson.

Extension: For a longer lesson, spend more time on Activity 2. Learners can look at more of the supporting references in the media box.

Option B: Spend more time exploring driving questions - see Media box resource.

### MEDIA BOX (materials, online video links, extra resources, case studies etc)

Forestry Focus (Sacred and Magical Trees):

<https://www.forestryfocus.ie/social-environmental-aspects/cultural-heritage/trees-and-folklore/sacred-and-magical-trees/>

Bitesize Botany, '5 in FIVE Native Trees' Trinity College Dublin (7:07min):

<https://www.youtube.com/watch?v=e1Zqc1roBA4>

Native Irish Trees:

<https://web.archive.org/web/20211030100814/http://www.gardenplansireland.com/forum/about69.html>

How to write driving questions for project-based learning (15:08min):

<https://www.youtube.com/watch?v=u0Eojnkb3Gs>

How to develop a STRONG research question (4:18min): <https://www.youtube.com/watch?v=71-GucBaM8U&t=224s>

### LOCAL TRIP / EXPERTISE

Invite a Seanchaí (storyteller) to tell stories about sacred trees.

Map the school or local area to identify if and where the 'sacred' trees grow. Look at the names in English and Irish and see if there's any clues in your local place names, Visit the Irish place names database <https://www.logainm.ie/en/> Learners can also research local lore about trees.

Invite a local herbalist or botanist to the class to support learners in answering the driving questions they developed in Activity 1.



# SDG14 Future of the Ocean

## Ocean Leadership for the 21st Century



### MM2: Ocean Leadership for the 21st Century

#### Research and Development

#### Lesson 2 What Makes an Effective Leader?

Subject Areas: CSPE, Climate Action and Sustainability English SPHE

#### Lesson Title and Summary:

#### What Makes an Effective Leader?

Leadership for the 21st century is changing and the skills and qualities required are varied and interconnected. For humanity and all life to thrive, leaders need to be able to communicate, show empathy, and model motivation, vision, confidence, persistence, and integrity.

This lesson explores what traits and values make an effective leader.

#### Vocabulary:

Integrity, Leadership, Positive Mindset, Traits, Transferable Skills, Values

#### In this lesson, the learner will:

- begin to understand the importance of teamwork as part of being a leader
- ideate skills and qualities of an effective leader
- define and explore possible core transferable skills (problem solving, creativity, growth mindset, listening and speaking (communication) resilience, adaptability, teamwork, values, vision)
- identify where these skills could be transferred to - school, college, work, and community

#### Materials

- Worksheet: Inspirational Leader
- Support Sheet: Teacher's Notes
- Felt pens/markers
- Ball of string
- Paper
- Post It Notes



# SDG14 Ocean Leadership for the 21st Century

## Lesson 2 What Makes an Effective Leader?



### Activity Instructions

#### Activity 1 - Pulling in Different Directions (20 mins)

1. Divide the class into groups of five and tell the group to discuss and agree upon one word they think best represents leadership. Give each group a felt pen/marker pen, four strings and a piece of paper and ask learners to tie the four strings to the pen with roughly equal lengths spare then tell teams that one person in each group will not hold the string and therefore will be the designated leader.
2. Instruct teams that they must work together to manoeuvre the pen to write out the word they agreed upon. The designated leader should support the group in doing this without touching the pen themselves.
3. Ask learners to discuss:
  - What did you find challenging about the exercise and why?
  - How did having a leader help?
  - What might have been harder without a leader?

#### Activity 2 - Inspirational Leaders (30 mins)

1. Ask learners who comes to mind when they think of a leader. Encourage them to consider different types of people both far removed and close to themselves. Write responses on the board.
2. In groups of 2-3, using Worksheet: Inspirational Leader, complete the discussion on leaders' quotes. Share ideas as a whole group and briefly come up with a whole class definition for 'skill' and 'trait'. Share some examples.
3. Ask learners to ideate what they think the character traits and core skills of a leader are and show it in a mindmap on their worksheets. Then to finish, ask learners: How would any of the skills or traits brainstormed have helped with Activity 1?

#### REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

# SDG14 Ocean Leadership for the 21st Century

## Lesson 2 What Makes an Effective Leader?



### EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, Complete activities 2 and 3 only

Extension: For a longer class:

1. Divide class into six groups for a hive mind discussion. Explain that leadership skills are transferable across all aspects of life, including school, college, work, and community. Give each group a value card and a skill card and pack of PostIt notes.
2. Instruct learners to ideate individually on one Post It note (one per card with three categories on each Post It, eg. Traits card = Post It: school, college and work contexts, Skills card = Post It: school, college and work contexts) how each skill and each trait can be applied to a school, college and work context and place their ideas around the appropriate card (trait or skill). On completion, there should be responses around each card relating to these three categories.
3. Ask learners to share their knowledge and ideas they wrote on their Post It notes and collectively decide on one answer per category for the skill and trait they were given.

### MEDIA BOX: (materials, online video links, extra resources, case studies etc)

**VIDEO** The Nesser Show | Ep 2 | Mamobo “I’m living the purpose that I have in society”  
[52:02min]

<https://humanityinaction.org/person/mamobo-ogoro/>

**ARTICLE** 10 Most Important Leadership Skills For The 21st Century Workplace (And How To Develop Them), Bernard Marr

<https://www.forbes.com/sites/bernardmarr/2022/07/26/10-most-important-leadership-skills-for-the-21st-century-workplace-and-how-to-develop-them/>

**Earth Charter Stories Collection: The Sufi and the Sultan**

<https://theearthstoriescollection.org/en/the-sufi-and-the-sultan/>

**The Earth Charter**

<https://earthcharter.org/education-sustainable-development/>

**The Earth Charter Resources**

<https://earthcharter.org/resources/>

### Local Trip / Expertise / Additional Work and Assessments

Earth Charter Stories Collection (See Media Box). Invite learners to read The Firebird and share their understanding of how this story relates to how leaders can strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice either as an essay or class discussion.

# MM2: LESSON 2 INSPIRATIONAL LEADERS



## LEADER'S QUOTES

Below are three quotes from some people who have been identified as being leaders:

- Discuss each quote and share whether you agree or disagree with their views and what you think they mean.
- Explain your point of view.

**“Belonging is where we co-create a [space with] each of us deeply understanding our power, prejudices & privileges,”**

**Mamobo Orogo**  
Social psychologist and  
Social entrepreneur



**“It’s about how you make people feel”**

**Paul O’Connell**  
Former Munster, Ireland and Lions  
rugby skipper

**“We realize the importance of our voices only when we are silenced.”**

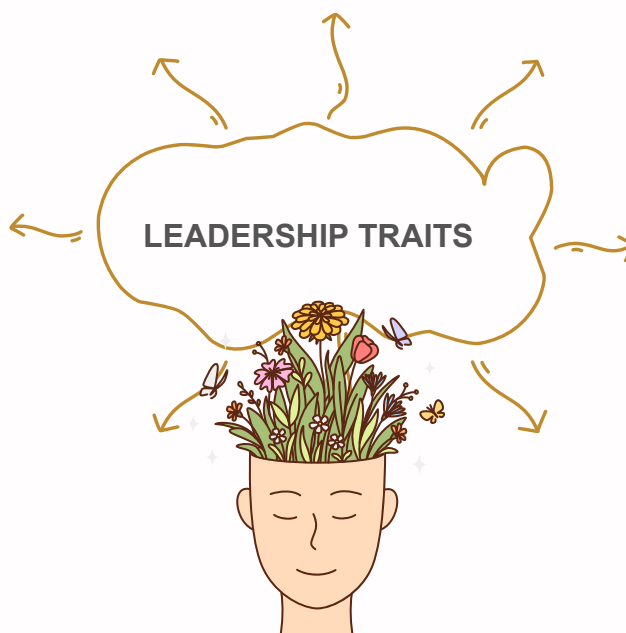
**Malala Yousafzai**  
Human rights activist

## LEADERSHIP TRAITS

Ideate what the skills and character traits of a leader are. Note: ideate means to think of an idea or ideas: Put an "S" with the skill and a "T" with the trait. One example has been suggested for you. See below. This is a great forum, where you can discuss, debate, form ideas and develop fresh new perspectives.

### EXAMPLE:

**S: VISION**  
**T: INTEGRITY**



## MM2: LESSON 2 WHAT MAKES AN EFFECTIVE LEADER?

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



### TEACHER'S NOTES

#### Activity 1 Pulling in Different Directions

##### Activity instructions

1. Divide the class into groups of five.
2. Tell the group to discuss and agree upon one word they think best represents leadership.
3. Give each group a felt tip/marker pen, four strings and a piece of paper.
4. Ask learners to tie the four strings to the pen with roughly equal lengths spare.
5. Tell teams that one person in each group will not hold string and therefore will be the designated leader.
6. Instruct teams that they must work together to manoeuvre the pen to write out the word they agreed upon. The designated leader should support the group in doing this without touching the pen themselves.

#### Activity 2 Inspirational Leaders

##### Possible Answers

- Qualities: Ideally learners will identify being a leader means having the need for: communication, motivation, values, vision, modelling, demonstrating empathy, confidence, persistence, and integrity
- Skills: problem solving, creativity, growth mindset, listening and speaking (communication) resilience, adaptability, teamwork, vision

#### Activity 3 Transferable Skills and qualities

Note: The Hive Mind refers to the collective knowledge, resources, and ability of a group. See task cards on next page. These will need to be copied and cut before class.

##### Task approach example:



**TRAIT:  
INTEGRITY**

**SKILL:  
PROBLEM  
SOLVING**

**TRAIT:  
HUMILITY**

**SKILL:  
CREATIVITY**

**TRAIT:  
EMPATHY**

**SKILL:  
TEAMWORK**

**TRAIT:  
COMMUNICATION**

**SKILL:  
COMMUNICATION**

**TRAIT:  
ETHICAL**

**SKILL:  
RESILIENCE**

**TRAIT:  
ACCOUNTABLE**

**SKILL:  
VISION**

# SDG8 Future of Fashion

## MM3 My Fashion Everyone's Fashion



### MM3 My Fashion Everyone's Fashion

#### Lesson 4: Considered Design

**Subjects: Climate Action  
and Sustainable  
Development, Design,  
Enterprise, Home  
Economics, Science**

**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**10** REDUCED  
INEQUALITIES



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



**17** PARTNERSHIPS  
FOR THE GOALS



#### **Lesson Title and Summary: Considered Design**

In this lesson, learners will begin to explore a considered design approach as the necessary starting point for a circular design system to work.

When we consider that Circular design systems have a positive effect on all elements of the garments life, we can also extend that to include the lives of the people involved in the making. Consideration of all the elements which make the design circular is necessary.

Adding co-design or empathic design features can strengthen this process and create an even more robust system which allows for the garment to become a cherished item through empathy and co-creation, as well as, has the potential to extend into the lives of the people and communities making the garments.

**Vocabulary: Circular design, Co-design,  
Considered design, Empathic design.**

#### **In this lesson, the learner will:**

- gain an understanding of how empathic and co-design can support a circular system
- work in pairs to discover companies that expand the circular design model to include empathic and co-design methods
- discover how different companies have different methods of making and production

#### **Materials**

- Internet access
- A4 paper/notebooks
- post-its
- whiteboard and markers
- Support Sheet: Considered Design Company Analysis
- Worksheet: Considered Design Brand Analysis

# My Fashion Everyone's Fashion

## Lesson 5. Slow Fashion Swappie Time



9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



10 REDUCED  
INEQUALITIES



12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



17 PARTNERSHIPS  
FOR THE GOALS



### ACTIVITY INSTRUCTIONS

#### Activity 1: Exploring Considered Design (25 mins)

1. Organise learners in groups of two and then watch the two short videos making notes of anything that stands out.
  - Bangladesh Clothing factory (4:00 mins)
  - Alabama Chanin. (4:05 mins)
2. In their pairs ask them to discuss the videos, using the following questions as starting prompts:
  - What struck you most ?
  - What are the differences between the lives of the women making the garments in these two videos.
  - What is the benefit of having the fiber production and making of the garment close to the headquarters of the company?
3. Share your ideas through questioning - I noticed ... did you notice that? or... I thought, what did you think? Use this to facilitate an open discussion.
4. Remind them of concept from lesson 3 and the Life Cycle Analysis:
  - Can they name one way in which empathic and co-design design is used in Alabama Chanin.
  - What makes Alabama Chanin a Circular system?

#### Activity 2: Considered Design Brand Analysis (25 mins)

1. Have the learners work in pairs.
2. Ask them to choose one of the five Big Brand Names on the worksheet.
3. Using the support sheet as an example, ask learners to research their selected brand/company to complete table on the worksheet.
4. At the end of the research phase, ask each pair of learners to present the information that they have gathered and upload to the shared learning environment.

### REFLECTIVE EXERCISE: 3-2-1

- Three things they feel they have learnt from the exercise
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the site / exercises



# My Fashion Everyone's Fashion

## Lesson 5. Slow Fashion Swappie Time

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



10 REDUCED  
INEQUALITIES



12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



17 PARTNERSHIPS  
FOR THE GOALS



### EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, focus on either activity 1 or 2. If using activity 2, divide the class into 2 and have the learners choose 2 brands only and everyone in that group researches them for 15 mins. Discuss the differences and similarities between the two chosen companies for 10 mins.

Extension: For a longer lesson, visit Vintage Stock Reserve - see media box allow learners 10 mins to explore the company website and what Tommy Foreign and Jordan Deery, are doing to combat fast fashion. As a class, discuss the company's ethos using the knowledge gained over the course of the previous lessons.

Option B: In pairs, have the learners continue to the ongoing Sustainable Fashion Glossary by looking up and defining in their own words the following phrases:

- Empathic design
- Co-design
- Considered design

Discuss with the whole group the similarities and differences between these design approaches.

### MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- Bangladesh Clothing factory (4:00 mins) <https://youtu.be/W1mvcFuiTts?si=kLRjXRAXJbAdoaOz>
- Alabama Chanin. (4:05 mins) <https://youtu.be/zvv98JdiVLA?si=14ZqxjiiOjrXi7hf>
- Vist Vintage Stock Reserve <https://www.vintagestockreserve.com/blogs/news/the>
- Girlfriend Collective <https://girlfriend.com/>

### Local Trip / Expertise / Additional Work and Assessments

Learners should collect and bring in in bits of fabric, old images and magazines from home to make a mood board relating to ideas they have for fashion - Pinterest is a good place to look.

- <https://www.pinterest.ie/pin/1477812371771375/>
- <https://www.pinterest.ie/allthingscolor/great-examples-of-mood-boards/>

## MM3 L4 CONSIDERED DESIGN BRAND ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



In this activity you will look at the Alabama Chanin, as an example of a company, which uses considered / circular design. Think about your Life Cycle Analysis form Lesson 3. You can see the categories to consider in the first column, and the qualities that align to circular and empathic / co-design in the second and third columns.

Use this, as your guide, to complete the Worksheet: Considerate Design Brand Analysis, to analyse a big name company of your choice.

| <b>Product / Company</b><br><b>ALABAMA CHANIN</b>                         | <b>Circular design</b>   | <b>Empathic / Co-design</b>   |
|---|--|---|
| Overall Impact  | This is a nonprofit that records, studies, and interprets history, community, and power through the lens of fashion and textiles | AC started Project Threadways. The community of AC is seeking to understand the impact that textiles and their creation— from raw material to finished good—have and had on the local community, the American south, the nation, and the world— connecting people, places, and materials. |
| Considered design:<br>How does the design stage affect the final product? | AC believe there is beauty in creating garments and products that age with the life of the wearer and user.                      | AC say ‘From the beginning, we were committed to the ideas of sustainable design, preserving craft traditions, and producing locally and ethically, with the highest possible quality standards’.   |

## MM3 L4 SUPPORT: CIRCULAR DESIGN ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



|  |  |   |
|--|--|---|
| <p>Materials: Think about diversity, breakdowns, recyclability, microplastics, etc</p> <p>How much of these resources are used? e.g. energy and water use.</p> <p>Pesticide use: Are the fibers organic?</p> | <p>AC works with only Organic Cotton. Cotton breaks down and can be incorporated into compost. No pesticides are used. All of the pieces are hand stitched in a cottage industry system where people can work from home. There is very little energy or water used in the manufacturing of the garments.</p> <p>The manufacturing of organic cotton uses less water and energy because the cotton goes through less processing.</p> <p>They buy cotton from the the Texas Organic Cotton Marketing Cooperative (TOCMC) - a cooperative of organic farmers in Texas who produce organic cotton fiber.</p> | <p>AC works with an Organic cotton co-operative, whose goals are to be responsible stewards of the land, in order to pass their farming heritage to their children and the community</p>  |
| <p>Processing and Manufacturing:</p> <p>Labour- Are the makers happy?</p> <p>Overall affect on the community:<br/>Energy use- during making process<br/>Waste –during making process.</p> <p>Packaging</p>   | <p>AC produce for themselves and also facilitate, collaborate, research, and create with a range of local organizations and designers.</p> <p>It is an ever-evolving company, deeply rooted in local history and culture. As a multi-fold organization, the mission guides each arm and they work together toward the same goal: creating beautiful products in sustainable ways that enrich the lives of people and planet.</p>   | <p>The factory building is part of the town’s history, but, more importantly, it is part of the community’s history—a symbol of economic boom, hard times, and community rebuilding.</p> <p>The garments are all hand stitched. There is very little actual waste material.</p> <p>AC says ‘We envision a healthier future in which textiles are an integral part of growing communities and where material culture can be a source of reconciliation and communal growth.’</p> |

## MM3 L4 SUPPORT: CIRCULAR DESIGN ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



|   |   |   |
|---|---|---|
| <p>Transport between processes and after products are made</p>  | <p>The products are made from Organic Cotton grown in the region. The fabric is made in the same region.</p>  | <p>Working partnerships with Texas farmers / North Carolina converters to provide a seed-to-shelf US-made organic product.</p>          |
| <p>Use Phase:<br/>Detergents, energy used during washing</p> <p>Microplastics entering the water systems</p> <p>Durability/<br/>Longevity-How long will it last</p> | <p>As these garments are investment pieces, the use phase is kind. To the environment.</p> <p>The garments are usually hand washed or washed at a low temperature to preserve the quality. No microplastics enter the water with cotton</p> | <p>The garments are cherished items that will last the lifetime of the user and often get passed on</p>                                 |
| <p>End of Life</p>  | <p>AC believes that good things take time — and last a lifetime.</p>  | <p>There is potential for these garments to be passed on as legacy garments to others. Each piece is highly valuable and cherished.</p> |

Refer to the examples on column two and three as you fill in your brand analysis worksheet

## MM3 L4 CONSIDERED DESIGN BRAND ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



In this activity you will look at the Alabama Chanin, as an example of a company, which uses considered / circular design. Think about your Life Cycle Analysis form Lesson 3. You can see the categories to consider in the first column and the qualities that align to circular and empathic / co-design in the second and third columns.

Use this, as your guide, to complete the Worksheet: Considerate Design Brand Analysis, to analyse ONE of the big name brands from the list:

Abercrombie & Fitch, Adidas, Eleven Degrees, Girlfriend Collective, Nike, Pre-London, Tommy Hilfiger

| <b>Selected Product / Company</b>   | <b>Circular design</b> | <b>Empathic / Co-design</b> |
|---|------------------------|-----------------------------|
| Overall Impact  |                        |                             |
| Considered design:<br>How does the design stage affect the final product? |                        |                             |

# MM3 L4 CONSIDERATE DESIGN BRAND ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



Materials. Think about diversity and breakdowns and recyclability, microplastics, etc

How much of these resources are used, e.g. energy and water use.

Pesticide use: Are the fibers organic?

Processing and Manufacturing:

Labour- Are the makers happy?

Overall affect on the community:  
Energy use- during making process  
Waste –during making process.

Packaging

# MM3 L4 CONSIDERATE DESIGN BRAND ANALYSIS

8 DECENT WORK AND ECONOMIC GROWTH



|  |  |  |
|--|--|--|
| <p>Transport between processes and after products are made</p>   |  |  |
| <p>Use Phase:<br/>Detergents, energy used during washing</p> <p>Microplastics entering the water systems</p> <p>Durability/<br/>Longevity-How long will it last?</p> |  |  |
| <p>End of Life</p>   |  |  |

Refer to the examples on column two and three as you fill in your brand analysis worksheet