

SDG 14 Problem to Pitch – Lesson 5



SDG 14 P2P

Lesson 5 Design Thinking - Defining the Problem 2

Design, Technology,
Maths Environment,
Science, Sustainability

Lesson Title and Summary: Defining the Problem 2

In this lesson learners will begin to research aspects of Marine Plastic Waste, in particular the Fishing Industry. Learners will research key aspects of Marine Plastic Waste ecosystem.

Learners will work in groups to research net manufacturers, net transport, net waste, fishers, activism and community impact. They will collate the information as a group learning how to build greater understanding of a problem collectively.

Vocabulary: Assumptions; (Biases, Judgement) Analyse; Conflicts; Define; Identify; Problem

In this lesson, the learner will:

- understand the importance of getting to the source of a problem
- become more accustomed to SDG 14
- develop an awareness of how to localise SDG 14
- develop an understanding of the connection of local and global issues
- complete a problem tree
- understand the complexity of wicked problems in their location
- develop critical thinking about problem solving

Materials

- Worksheet Define - Fishing System / Ecology Define
- Pens, pencils
- Paper
- Local Newspapers / internet access

11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE BELOW
WATER



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Activity Instructions

Activity 1 Finding and defining your local problem, issue or concern (20 mins)

1. Organise learners into groups of 3 or 4 depending on class numbers.
2. In their groups ask them to select (or assign) one of the 5 sections on the worksheet - Fishing Net Industry.
3. Ask each group to summarise their findings on poster-size paper and present their findings by putting them on the wall for the next activity.

Activity 2 – Discussing the information (25 mins)

1. As a class, give the group 10 mins to look at the posters on the wall.
2. As a class, develop a discussion by addressing each of the posters or have the group consider each of the poster's aspects and discuss the findings

Questions to discussed (selection taken from the worksheet):

1. Where do most of the nets come from / where are most nets made?
 - a. What other problems might this cause?
 - b. How could that be addressed?
 - c. What are some of the latest development in net making, e.g. lights, electronics?
2. What are nets made from?
3. What are the key problems with the industry?
4. Are there any regulations or new laws that might change these problems, e.g. single use plastic?
5. What impact might this have?
6. What impact do nets have on fishers?
 - a. How does this impact their job?
 - b. How are they helping?
 - c. Do you think the public understand this?
7. What campaigns or activism was discovered?
8. What might you do? Any early ideas?

REFLECTIVE EXERCISE: 3-2-1

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

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EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, ask learners to undertake complete the Flipped Classroom Task: the local search on marine plastic waste using the internet / newspapers and watch the video: Defining the Problem at home and prepare to share their findings in the next class.

Extension: For a longer class, continue the discussion with the class:

- What surprised them?
- Do they have any ideas of a product, or service they could make or develop linked to marine plastic waste?

Learners could discuss any ideas they might have to address the problems now they have more information with peer feedback on their ideas.

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

- Video: (4:34min) Healix Recycling Fishing Nets <https://www.youtube.com/watch?v=NVSf3Aw-8Ww>
- Sustaining Development SDG 14 <https://sustainingdevelopment.com/sdg14-indicators/>
- Linked learning: Media Communication 1-4 micro-modules support the development of the 4Cs skills – Creativity, Communication, Critical Thinking and Collaboration. Use these to support learners making a video, presentation, poster or podcast / undertaking interviews.

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Learners can link into their local FLAG region to find out about local initiatives or contact BIM to ask about initiatives in their area <https://bim.ie/fisheries/advisory-services/fisheries-local-action-groups-flags/>

Find out where your nearest fishing net manufacturer is - could you visit? Could you set up a call for learners to interview them about their process including what do they do with their waste?

Could you talk to a Harbour master or owner of a fishing boat to find out more about the problem?

SDG 14 Ocean Literacy - Biomimicry Lesson



OBSERVATION: What do we know about the problem.

- How are nets made?
- Where are they made?
- How do they get to Ireland?
- What is the issue with synthetic nets?
- What is the impact of synthetic nets?
- What policies are there around this issue?
- Who does it affect?
- How does it affect them?



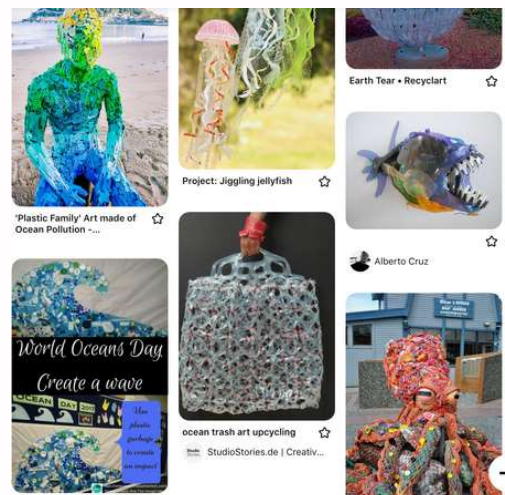
SELECT AN AREA OF THE FISHING INDUSTRY AND GATHER AS MUCH INFORMATION AS YOU CAN

- Fishers
- Net Manufacturers
- Net materials and Processing
- Marine Charities and Education Groups
- Community groups and Local groups

You can use Google and Pinterest as a research tool.

Once you have completed the task, set up a Pinterest board and save images to the board, with images from your category.

Share the boards with the whole class so you can see the whole system you have researched quickly. www.pinterest.com





Work through the questions relevant to the industry aspect you are looking at - these will be shared at the end with the other groups to build up a whole picture of the industry

Net Manufacturers

1. How many net manufacturers can you find?
 - a. Provide their names.
 - b. Where are they based?
2. How do the nets get to Ireland?
3. Who buys them?
4. Are there Irish net manufacturers?
5. What do they do?



Net Waste

1. What are the issues with synthetic nets?
2. What are the impact of synthetic nets?
3. What policies are there around this issue?
4. Whom does it affect? List them.
5. How does it affect them?



Fishers

1. What are fishermen having to deal with regarding net waste? Does it affect them and their work?
2. What are they doing about net waste?
3. Are there other organisations within the fishing industry dealing with net waste?
4. How are they managing the issues of waste?

Some useful links:

- <http://www.bim.ie/media/bim/content/funding-forms/flags/6085-BIM-FLAG-South-West-1.pdf>
- <http://www.bim.ie/media/bim/content/funding-forms/fl>
- <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/388082/>
- <https://www.worldoceanfest.org/new-blog/2017/6/9/the-impact-of-abandoned-ocean-fishing-nets-on-marine-life>



Marine Activism, Conservation and Education

1. How are marine charities, conservation and activism groups dealing with the key issues with fishing net industries?
2. Consider the key messages around marine plastic waste campaigns?
3. What types of campaigns are there? Can you categorise them; awareness-raising or practical solutions, are there any other types?
4. What is their message?

Local Communities

1. What is the impact of net waste on local communities?
2. How are local communities managing the impact?
3. Do you see the impact in your community? If yes what is it?
4. What organisations are working with net waste in your local community?
5. What are they doing in your local community to deal with the waste?
6. Do you know anyone else in your local community interested in fishing net waste?

