SDG 15 Seeding Sustainability
MM1: Problem to PitchThe Ice Cream Olympics

MM1: Problem to Pitch - The Ice Cream Olympics

Programme Phase 1: Research and Development

Lesson 3 Design Thinking - Define

Subjects: Climate Action and Sustainable Development, Design, Technology, Science

Lesson Title and Summary: Defining The Problem?

In this lesson learners will begin to understand how to define a problem.

Leaners are asked to begin to identify with the real problem using the Sustainable Development Goals (SDGs) to connect to aspects of the Ice Cream Olympics. Learners will use SDG 2 and 3 as a way to consider food production, nutrition, and exercise for health and well being. They will look at SDG 10 to begin to identify how they might make the Olympic games and the flavours more inclusive to address diverse health needs and abilities.

This lesson is the foundation for lessons in the other Micro-Modules where they will consider these aspects more systemically.

Vocabulary

Assumptions; Analyse; Conflicts; Define; Source

In this lesson, the learner will:

- understand the importance of getting to the source of a problem
- become more accustomed to the SDGs
- develop and awareness of how to localise the SDGs
- 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: Problem Tree
- Support Sheet: Define the Problem
- Pens, pencils
- Paper

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Activity Instructions

Activity 1 Aligning your problem area to the Sustainable Development Goals (10 mins)

1. Organise learners into groups of 2 or 4.

2. Have groups randomly choose a piece of paper / posit with an SDG on it. This is the SDG this group will focus on.

3. Visit the Sustainable Development Goals (SDGs) knowledge platform - see Media Box. Learners will use the SDGs knowledge platform to consider SDG 3 Health and Well-being; SDG 11 - Sustainable Cities and Communities; SDG 13 - Climate Action and SDG 15 - Life on Land.

4. In their groups, ask them to look at the targets and indicators of their selected SDG and begin to think about the potential impact their solution might need to address Activity 3 – Worksheet: Problem tree (20 mins).

5. Discuss as a class what they have discovered.

Activity 2 Finding and defining problems in your local Ice Cream Olympics landscape (20 mins)

1. Organise learners into groups of 2 or 4.

2. Give each group of learners a local news paper and ask them to search for food and related articles that might help identify local problems issues or concerns in this area, e.g. farming, advertising local food businesses or products, sustainability and environment.

- Alternatively, if using the internet, ask students to search online versions of local newspapers for local problems, issues and concerns.
- Ask each group to feedback at least one problem, issue or concern.
- As a class begin to think about your local area list of problems, issues and concerns.

Activity 3 Use a Problem Tree (20 mins)

1. As a class watch the Video: Defining the Problem - see Media Box.
2. After visiting the SDG knowledge platform write your selected SDG challenge from the Ice Cream Olympics on the problem tree trunk.
3. As a group, discuss the causes of this problem and write them underneath the problem. These become the “roots” of the tree.
4. Discuss the effects or consequences of this problem and write them above the problem. These become the “branches” of the tree.
5. For each cause, ask what causes it? For each effect, ask what the consequences are?

Continue this process until no further causes and effects are mentioned. You may not have all the answers at this point, so make notes of any assumptions, questions, conflicts, or gaps in knowledge.

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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

EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, undertake activities 1 and 2 only.

Extension: For a longer class, watch the Video: 'How to Design a Problem Statement' and begin to try to develop a problem statement in canva as guided in the video. In addition, ask leaners to read the Support Sheet: P2P define supporting sheet and discuss as a class.

- Discuss the SDG diagram https://www.researchgate.net/figure/The-interconnected-nature-of-the-SDGs-Credit-Adopted-from-Azote-Images-for-Stockholm_fig1_327884976
- Learners can also begin to research the organisations and stakeholders for their problem area, learners can undertake a stakeholder mapping.

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

- UN SDGs Knowledge Platform https://sdgs.un.org/goals
- Video: Design Thinking 2 - Define (4:34 min) https://www.youtube.com/watch?v=TNAdanuvwtc
- Video: Defining the Problem (3:08 min) https://www.youtube.com/watch?v=2rJRVv-NOaA
- Video: How to Design a Problem Statement (5:38 min) https://www.youtube.com/watch?v=w7l8qEj1JX0&ab_channel=Canva
- Linked learning: Media Communication Skills micro-modules support the development of the 4Cs skills – Creativity, Communication, Critical Thinking and Collaboration - video, poster, Pecha Kucha, Interviews or Podcasts and SDG 4 supporting Skills - reports.

Local Trip / Expertise / Additional Work and Assessments

Contact the local librarian to collect back issues of the local news paper for learners look for information on the project focus.

Learners can interview local organisations to find out more about their problem issue through primary source research. Learners can begin develop an empathy map for a user of a local service / business that seeks to 'solve' their problem area, e.g. access to healthy food or local food producers.

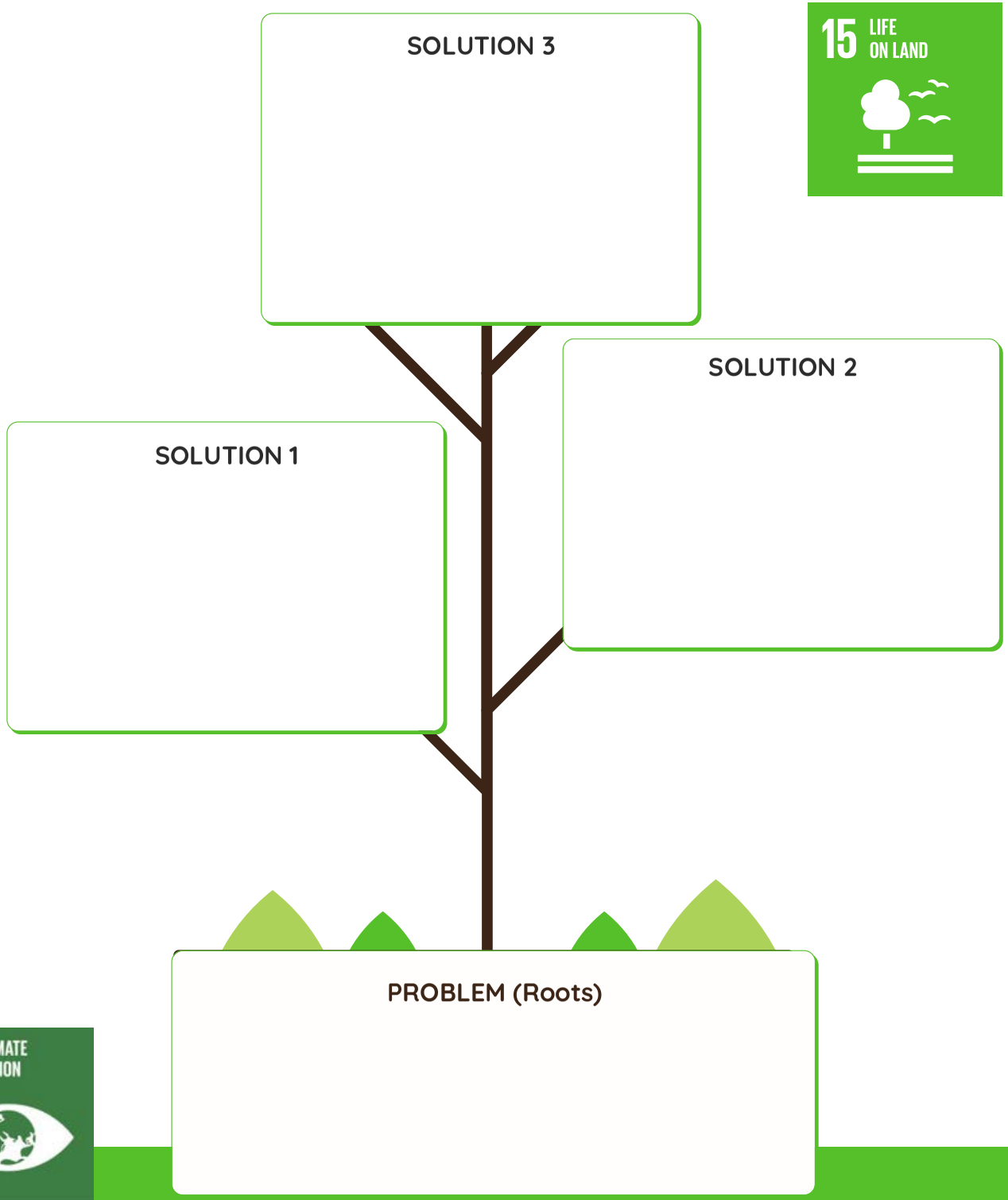
MM1: L3WS USING A PROBLEM TREE

PROBLEM SOLVING TREE

Find out different ways to solve a problem.
Pick the best one.

I choose solution number _____
because _____

_____



15 LIFE ON LAND

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

MM1: L3WS SUPPORT - DEFINE YOUR PROBLEM

Problem Solving

First Step in problem-solving - Understand the Problem:

While it may seem obvious, identifying the problem is not always as simple as it sounds. The biggest issue can be identifying the wrong source of a problem. This could mean your attempts to solve it are inefficient or even useless. Remember: Once the correct source of the problem has been identified you need to fully define it before it can be solved effectively.

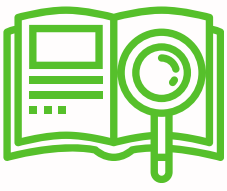
Things to think about:

- What do I know already about the problem? Make a list.
- Can a picture or diagram help you? Try to visually draw or map the problem.
- Who's telling me about this problem? What is their perspective?
- What do I need to find out?
- Do I need to speak with anyone else about this problem?
- Try rewriting the problem in your own words?
- What do you think the problem is?

Step two: BRAINSTORM

In this phase, you will need to think, talk, sketch, doodle, contemplate, or journal, in order to start allowing ideas to formulate. Then, set aside some daydreaming time and get started. Think big and let all the ideas you have hit the page without editing them.

Step Three: Research: How are you going to turn the idea into a reality?



Brainstorming, researching and refining your problem go hand in hand. You will be going back and forth between the three until you come up with a plan. Once you brainstorm some great ideas for your business, you will need to research to learn more about the problem, product or service. In turn, that leads to more brainstorming and refining your problem.

In the next phase you will think of how to turn your idea into a reality. Start to make a make a list of any questions or concerns that come to mind. Its never too early!

- What materials do you need?
- What will it cost?
- Can you build it yourself or will you need help?
- If you will need to collaborate on this piece, decide who that will be and make plans to work together?