## Muinín Catalyst STEAM Education for Sustainable Development and Futures Literacy

## **SDG2** The Future Of Food



**Programme Phase 3: Implementation** 

Micro-Module 6 - Food Futures Today

Subject Areas: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2 The Future of Food Micro-Module 6: Food Futures Today



Micro-Module (MM) 6: Food Futures Today

## Implementation

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



#### Micro-module Summary: Food Futures Today

Food Futures Today is a micro-module designed to promote creative thinking, business innovation, and exploration. The 13 lessons included in this micro-module require learners to consider future possibilities in food through the lens of art practice, business studies, and research.

Throughout the lessons, learners will conduct research, explore STEAM, develop skills in human-centered design, develop new business ideas, and engage in critical design practices through the lens of food innovation and adaptation.

### In this micro-module, the learner will:

- be inspired by innovators and business leaders in food
- develop an entrepreneurial mindset
- · learn how to write a case study
- practice human-centered design
- practice futures thinking
- speculate about the future of food as it relates to society and economy
- · learn how to write a business plan
- develop written, verbal, and visual communications skills
- work independently and collaboratively

#### Materials

- Lesson plans
- Worksheets





#### **Food Futures Today**

#### Lesson 1: Exploring Local

This lesson provides learners with the opportunity to get to know the people behind the food in their local area so they can discover the different types of businesses operating nearby and deepen their connection with the food around them. In this lesson, learners will be tasked with conducting research into local food producers/businesses using the research worksheet provided.

Resources include: Worksheet: Finding Local Food Producers

#### Lesson 2: Future Food Builders

In this lesson, learners will begin to look deeper at food innovation and new product development by investigating Irish food businesses, brands, and startups. Learners will be provided with a selection of food brand case studies for them to explore from the perspective of food innovation, brand positioning, and business sustainability.

Resources include: Supporting Resources: Future Food Builders Profiles, Worksheet: Future Food Builders

#### Lesson 3: What is a Case Study?

Case studies are an effective way to examine and understand a business, an individual, or a subject. They provide learners with real-world scenarios in which they can challenge and develop their own critical thinking skills. In this lesson, learners will learn about case studies – what they are and how to create them.

Resources include: Worksheet: What is a Case Study?

#### Lesson 4: Create a Case Study Part 1

Learners will work in groups to create a case study that analyses an innovative food company of their choice. Working together, they will investigate, collect and synthesise data, organise, and edit their findings into a coherent document.

Resources include: Worksheet: Case Study Template

#### Lesson 5: Create a Case Study Part 2

In this lesson, learners will transform their case study from a research document into a visually compelling and engaging artefact. It is a chance for learners to practice and express their creative ideas and skills.

Resources include: Worksheet: Design Your Case Study





#### **Food Futures Today**

#### Lesson 6: Present Your Case Study

In this lesson, learners will present their completed case studies from the previous lessons in this module. They will develop verbal communication skills and practice active listening.

Resources include: Worksheet: Design Your Case Study

#### Lesson 7: STEAM My Food

In this lesson, learners will have the opportunity to discover the world of STEAM. They will learn about the different themes and disciplines of science, technology, engineering, art, and mathematics.

Resources include: Worksheet: Understanding STEM and STEAM, Worksheet: STEAM and Food

#### Lesson 8: Food Innovations

Learners will be given a preview of the future of food through the lens of innovative startups, products, and concepts. They will see how different technologies, materials, and approaches can be used to create novel food experiences.

Resources include: Supporting Resources: Innovations

#### Lesson 9: How Might We Eat?

This lesson is about brainstorming ideas in relation to specific food challenges and concepts. Learners will be challenged to think about the future, and how acts of food preparation and consumption might change, disappear, or be introduced.

Resources include: Worksheet: Mind Map, Worksheet: Researching Ideas

#### Lesson 10: Future Food Possibilities

This lesson is about learners imagining new ways for people to experience food using speculative design methods and scenario mapping. Learners will use empathy to develop a human-centered food-based experience for the future.

Resources include: Worksheet: Cone of Possibilities, Worksheet: To-Be Scenario Map

#### Lesson 11: How Might We Eat?

This lesson is about envisioning the future in relation to specific food challenges and concepts. Learners will use a STEAM approach to imagine a new meal and use speculative design methods to envision life in the future as it relates to food.

Resources include: Worksheet: Imagine Your New Favourite Meal, Worksheet: Headlines of the Future





#### Food Futures Today

#### Lesson 12: Eat This!

In this lesson, learners will test their future food ideas with their peers, family, and friends. They will have the opportunity to gain feedback with the view to improving their concepts.

Resources include: Worksheet: Idea Vignettes, Worksheet: Feedback Questionnaire

#### Lesson 13: From Food Idea to Food Business

Learners will turn their future food ideas explored in lesson 11 into a business plan. This business plan activity will provide learners with skills in entrepreneurship, and will help them to structure their big ideas into potential real-world use cases.

Resources include: Worksheet: Business Brainstorm, Worksheet: Our Business Plan

#### Module development and expertise: Lara Hanlon, Portion Collaborative, Founder

#### Using the Resources:

If you wish to use these resources, we can offer an induction and online support throughout the module to help you plan integration into your projects and timetable. To register for this option, please contact us e:hello@futurefocus21c.com. For more information on the resources please visit www.muinincatalyst.com

#### Setting up an online learning environment for the lessons on this module:

Our lessons integrate the use of virtual learning environments. To ensure seamless use of our lessons, a module should be setup on your school's virtual learning environment such as Teams, Google Classroom, etc. Learners are encouraged to upload documents to share with their peers. If your virtual learning environment does not support document sharing, we recommend OneDrive or Google Drive.

You can also use Google Sites or Microsoft Sway to encourage learners to present their work over the year - this can easily be set up to reflect the aims of TY and provide a showcase for their work as well as assessment tool.

#### Setting up a Canva Education account.

As our lessons integrate design, our lessons also refer to Canva. Educators and schools are able to open a free Canva for Education account by registering here: <u>https://www.canva.com/education/</u>Canva for Education provides primary and secondary school teachers and students with premium features and templates. You can then also set up lessons and invite your learners to the class.





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MM 6: Food Futures Today

## Implementation

Lesson 1: Exploring Local

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

## Lesson Title and Summary: Exploring Local

This lesson provides learners with the opportunity to get to know the people behind the food in their local area so they can discover the different types of businesses operating nearby and deepen their connection with the food around them.

In this lesson, learners will be tasked with conducting research into local food producers/businesses using the research worksheet provided.

## Vocabulary: Business, Case Study, Environment, Local, Producer, Research, Sustainability

## In this lesson, the learner will:

- research local food producers
- understand the types of food native to or available in their area
- · work independently and collaboratively
- strengthen their relationship with community members and businesses

## Materials

- Worksheet: Finding Local Food Producers
- Internet access
- Markers/pens/pencils
- Paper



## **ACTIVITY INSTRUCTIONS**

#### Activity 1: Finding Local Food Producers (20 mins)

- 1. Learners can work in pairs or small groups of 2-3 for this activity.
- 2. Distribute Worksheet: 'Finding Local Food Producers' (one per pair / group of learners).
- 3. Explain to learners that due to time learners should divide the worksheet between them to complete the research
- 4. Learners will need access to the internet to complete this activity.

#### Activity 2: Class Presentation and Discussion (30 mins)

- 1. Clear a space on the wall or provide a board where learners can display their worksheets for the rest of the class to see.
- 2. When the learners have completed their worksheet, ask them to put them up on the class wall or board for everyone to see.
- 3. When everyone has their worksheets on display, ask each pair or group to present their findings.
- 4. Once the learners have presented their findings the findings both what is local the similarities and differences between the sheets.
- 5. Here are some questions and prompts to encourage a discussion between the presenters and the class:
  - a. How did you find these food producers?
  - b.Did you use Google / do you know some of these producers personally, through family for example?
  - c. Were you surprised to learn about any of these types of food producers?
  - d. Has anyone else identified the same producers?

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



## **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, run activity 1 only. If there is time at the end, facilitate a short class discussion.

Extension: For a longer lesson, ask the learners to use the internet to gather visuals to support their worksheet answers. Visuals might include photos or screenshots of the producer's business/products/brand/interviews/features etc.

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

Ireland Guide — Food producers directory: <u>https://www.ireland-guide.com/producers.html</u>

Good Food Ireland <u>https://goodfoodireland.ie/the-makers/</u>

NeighbourFood — Directory and online store of local farmers and producers: <u>https://www.neighbourfood.ie/</u>

Dublin Food Chain — Directory of food producers in Dublin: <u>https://producers.dublinfoodchain.ie//</u>

Bord Bia — Irish Food Markets: <u>https://www.bordbia.ie/farmers-markets/</u>

SDG goal 12: Ensure sustainable consumption and production patterns: <u>https://sdgs.un.org/goals/goal12</u>

SDG goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture: <u>https://sdgs.un.org/goals/goal2</u>

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

Invite a farmer or local food producer to speak to the class about their farm / product.

Invite the buyer from the local supermarket to talk about how they source their products and how their supply chain works.

Encourage learners to visit their local supermarket or grocery shop and look for food items that are produced in the area, nearby or in Ireland

## **MM6: L1 WS FINDING LOCAL FOOD PRODUCERS**

This activity is about getting to know the food producers in your area. Use this worksheet to document your discoveries.

You can use Google to conduct your research. You can also visit your local farmers' market or supermarket to find local producers, farmers, and growers.

What is the name of your location? e.g. village, town, or county.

Who are your local food producers? You must identify at least 3 from the list below. Write the person's name and/or company name.

Vegetable Grower:\_\_\_\_\_

Fruit Grower:\_\_\_\_\_

Mushroom	Grower:	

Fisher:	

Sheep Farmer:	

Goat Farmer:\_\_\_\_\_

Baker:\_\_\_\_\_

Cheese	Maker:	

Other:\_\_\_\_\_



## **MM6: L1 WS FINDING LOCAL FOOD PRODUCERS**



Where do the producers listed above sell their products?

Tick all that apply.

- [] Farmers' Market
- [] Supermarket
- [] Greengrocer
- [] Online

[] Other:\_\_\_\_\_

How well do you know these producers?

[] I know all of them; my family buy their products

[] I have heard of them before; I've seen their logo and products around

[] I don't know them; this is my first time learning about them

[] Other:\_\_\_\_\_

When you've completed your worksheet, stick it up on the class wall or board for everyone to see. Your teacher will facilitate a class presentation.



MM 6: Food Futures Today

Implementation

## Lesson 2: Future Food Builders

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

## Lesson Title and Summary: Future Food Builders

In this lesson, learners will begin to look deeper at food innovation and new product development by investigating Irish food businesses, brands, and startups.

Learners will be provided with a selection of food brand case studies for them to explore from the perspective of food innovation, brand positioning, and business sustainability.

Vocabulary: Brand, Case Study, Circular, Environment, Food Systems, Innovation, Local, Research, Startup, Sustainability, Technology

## In this lesson, the learner will:

- · discover innovative Irish food brands and startups
- learn about emerging food products and technologies
- explore circular food solutions
- · learn how to create a case study
- collaborate with peers
- share and delegate tasks

## Materials

- Supporting Resources: Future Food Builders (company profiles)
- Worksheet: Future Food Builders
- Internet access
- Markers/pens/pencils
- Paper





## **ACTIVITY INSTRUCTIONS**

#### Activity 1: Discovering Future Food Builders Part 1 (20mins)

- 1. Learners should work in groups of 3 for this lesson.
- 2. Distribute the Supporting Resource: 'Future Food Builders' (one per group).
- 3. Ask the groups to read the short company profiles-quietly and independently at first-then review them together in their working groups. Encourage the learners to discuss with each other the company they find most interesting, surprising, or unusual, and why.
- 4. When everyone has read about and discussed the different companies, ask each group to choose one that they would like to build a case study on.
- 5.Learners should work together to come to an agreement on which company they will all work on for the next lesson.

#### Activity 2: Discovering Future Food Builders Part 2 (30 mins)

- 1. Each group should use the internet (using class computers, tablets etc.) to learn more about their chosen company.
- 2. Ask the learners to visit the website of their chosen company by clicking/searching the URL included under each profile in the document: 'Future Food Builders'.
- 3. Each group should spend 15–20 minutes exploring the website.
- 4. Distribute the worksheet: 'Future Food Builders' (one per group). The group should use this to guide their exploration.

Note: Learners will use their chosen company from this lesson in lessons 3 and 4, so be sure to either collect their worksheets or have learners keep them in a safe place to refer to in future lessons.

#### **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.

Use Post-its or a mentimeter survey - www.mentimeter.com - to gather reflections



## **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, undertake activity 1 or 2 only. Alternatively, spend less time on both activities.

Extension: For a longer lesson, build in class discussion around sharing their companies' research after activity 2.

Learners can discuss their choices and why they think the companies are innovative or sustainable, if they have seen their products before and if they would buy / use them. This will help them if they undertake lesson 11 - 13 and develop their own business ideas and products.

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

BiaSol: https://www.biasol.ie/

Cream of the Crop: https://creamofthecropgelato.com/

FoodMarble: https://foodmarble.com/

Manna: https://www.manna.aero/

Revolution Farm & Kitchen: <u>https://revolutionfarmkitchen.com/</u>

Willows Ingredients: https://www.willowsingredients.com/

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

Ask the learners to contact their selected food company to learn more about their brand and/or product.

Learners can use the worksheet: Future Food Builders as a foundation to build a simple questionnaire, based on what they discovered and what they would like to know more about.

## **MM6: L2WS SUPPORTING RESOURCES**



#### Future Food Builder 01: BiaSol



BiaSol is a family-run company in the heart of Ireland creating a range of innovative food solutions. They strive to make highly nutritious, zero-waste food products easily accessible in Ireland.

Learn more: https://www.biasol.ie/

#### Future Food Builder 02: Cream of the Crop



Cream of the Crop is a Dublin based company specialized in Artisan Gelatos operating with a zero-waste, more taste ethos. They are battling food waste by using surplus ingredients that would otherwise end up in landfills.

Learn more: https://creamofthecropfood.com/

## **MM6L: L2WS SUPPORTING RESOURCES**



Future Food Builder 03: Revolution Farm & Kitchen



Revolution Farm and Kitchen is an innovation project based on the UCD campus in Dublin. They use spent coffee grounds to sustainably grow fresh oyster mushrooms that are then turned into delicious sauces and recipes.

Learn more: https://revolutionfarmkitchen.com/

Future Food Builder 04: Willows Ingredients



Willows Ingredients is a family-owned distributor of raw materials for Food, Healthcare, Sports and Animal Nutrition industries. Materials they distribute include crickets, fish collagen, amino acids, and vitamins.

Learn more: https://www.willowsingredients.com/

## L2: MM6 SUPPORTING RESOURCES

Future Food Builder 05: Food Marble



FoodMarble is a digital health company committed to transforming gut health through technology. Their handheld device, FoodMarble AIRE, helps people find out what food works for them.

2 ZERO HUNGER

Learn more: https://foodmarble.com/

#### Future Food Builder 06: Manna



Manna is a drone delivery service. The provide affordable, sustainable and fast delivery as a service to restaurant chains, supermarkets, kitchens, and online food delivery platforms.

Learn more: https://www.manna.aero/

## L2: MM6 FUTURE FOOD BUILDER

Visit the website of your selected food company by clicking/searching the URL included under each profile in the document: Future Food Builders.

As you explore the website and any additional web pages / sites / documents, think about the following questions:

1. What can you learn about your selected company on their website homepage? 2. What's your impression of the brand?

- Do they stand out?
- Do they look or sound familiar?
- Are they fun?
- Are they serious?

1. Make sure to click on the other pages of the website to see what else you can discover!

Notes:





MM 6: Food Futures Today

## Implementation

Lesson 3: What is a Case Study?

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: What is a Case Study?

Case studies are an effective way to examine and understand a business, an individual, or a subject. They provide learners with real-world scenarios in which they can challenge and develop their own critical thinking skills.

In this lesson, learners will learn about case studies – what they are and how to create them.

### Vocabulary: Business, Brand, Case Study

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

- · learn about business case studies
- · work independently and in groups
- develop critical thinking skills
- practice active listening
- practice note taking

#### Materials

- Worksheet: What is a Case Study?
- Internet access
- Markers/pens/pencils
- Paper



## **ACTIVITY INSTRUCTIONS**

Activity 1: What is a Case Study — Part 1 (20 mins)

- 1. Explain to learners that building a case study is a skill they might use increasingly in the future whether for research or within employment or business start-up
- 2. Distribute the worksheet: 'What is a Case Study' (one per learner).
- 3. Explain to the class that the answers for the worksheet are in the videos you will watch
- 4. As a class, watch the short videos: 'Case Study' (1:08 mins) and 'How To Write A Case Study' (4:52 mins) (see media box for URLS).
- 5. While watching the videos, ask the learners to complete their worksheet.
- 6. Check the learners have had enough time to complete their worksheet and if they need any aspect of the videos replayed to gather the answers

NOTE: In the following lesson, learners will be tasked with building a case study about their chosen company from lesson 2 so it is important that they understand the basic components of a case study before reaching the next stage.

#### Activity 2: What is a Case Study — Part 2 (30 mins)

- 1. Learners can work in pairs or groups of 3 for this activity.
- 2. Ask the learners to review the case studies from Failte Ireland, Ikea and Enterprise Ireland
  - see URLs provided in the media box.
- 3. Learners should work together to load the case studies, read, and take notes about the case studies and what they discover.
- 4. They can continue to use their worksheet from activity 1 as a guide, if helpful.
- 5. If there is any time left, discuss as a class what the elements of a case study are

### **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.

Use Post-its or a mentimeter survey - www.mentimeter.com - to gather reflections



## **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, run activity 1 only with the following addition:

• Ask learners to identify three things they already know about case studies by writing them down. Have a spokesperson from each group gather collective knowledge, and make corrections where needed.

Extension: For a longer lesson, allow more time for case study research and discussion about the elements of a case study in preparation for doing lesson 3.

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

Video: Case Study [1:08 mins] https://youtu.be/B3fL30ZITMQ?si=pysLlpVq6puHlfwe

Video: How To Write A Case Study | Amazon Case Study Example [4:53 mins] <u>https://youtu.be/k9KK\_0zr3LU?si=ZOa\_AyfAHQkVCkH4</u>

Failte Ireland Case Studies: <u>https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/2\_Develop\_Your\_Busine</u> <u>ss/Key%20Projects/Taste%20the%20Island/Enterprise-Case-Studies\_x7.pdf</u>

Food Loss + Waste: IKEA Case Study: https://flwprotocol.org/case-studies/ikea-food-food-precious-food-waste-initiative/

Enterprise Ireland Investor Profiles / Case Studies: <u>https://www.enterprise-ireland.com/en/Start-a-Business-in-Ireland/Food-Investment-from-Outside-Ireland/Investor-Profiles/</u>

## LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Ask the learners to think about food businesses in their local area: are there similar businesses to the ones they have learned about in this lesson and the previous lesson?

If so, how are they similar? Or how are they different?

Can they visit the company building/site, or test out their food products? Encourage learners to note their local findings in a journal or as an addendum to their lesson worksheet(s).

## MM6: L3 WS WHAT IS A CASE STUDY?

2 ZERO HUNGER

Complete this worksheet while watching the videos.

What keywords would you use to describe a case study?

What does a case study allow you to do?

List 3 types of things you could build a case study on:

1\_\_\_\_\_

2\_\_\_\_\_

3\_\_\_\_\_

List 3 skills that are useful when building a case study:

1\_\_\_\_\_ 2\_\_\_\_\_ 3 \_\_\_\_\_

## MM6: L3 WS WHAT IS A CASE STUDY?



List 3 pieces of information you should include in a case study:

- 1\_\_\_\_\_
- 3\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2\_\_\_\_\_

In your own words, why might a case study be helpful?

Additional notes:



MM 6: Food Futures Today

## Implementation

Lesson 4: Create a Case Study Part 1

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: Create a Case Study Part 1

Learners will work in groups to create a case study that analyses an innovative food company of their choice. Working together, they will investigate, collect and synthesise data, organise, and edit their findings into a coherent document.

Vocabulary: Business, Brand, Case Study, Circular, Competitor, Environment, Food Systems, Local, Research, Solution, Startup, Strategy, Sustainability, Technology

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

- conduct research on a chosen food business/brand
- learn how to create a business case study
- · develop content curation and editing skills
- practice written communications
- · explore business opportunities in the food industry
- collaborate with peers

### Materials

- Worksheet: Case Study Template
- Internet access
- Markers/pens/pencils
- Paper



## **ACTIVITY INSTRUCTIONS**

#### Activity 1: Lesson 03 Reflections (10mins)

- 1. Ask learners to write down three things they remember learning about case studies in the previous lesson. They should try to do this from memory, without referring to their completed worksheets.
- 2. Facilitate a quick class share-out by asking a number of learners to share their top three learnings.

#### Activity 2: My Case Study (40mins)

- 1. Learners should reform their working groups from lesson 02 of this module.
- 2. Distribute the worksheet: 'Case Study Template'.
- 3. Ask the learners to review the template together. Address any questions they may have about the format, language, or goal of the template.
- 4. When ready, they can begin filling out the case study template. They will need to use classroom devices (computers/tablets etc.) and the internet to research their chosen company.

#### **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.

Use Post-its or a mentimeter survey - www.mentimeter.com - to gather reflections



## **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, run activity 2 only with remaining work to be completed in the following lesson.

Extension: For a longer lesson, allow more time for the learners to fill out their case study template. Ask groups to swap their worksheets with the group next to them and ask each to review and share feedback.

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

Video: Case Study [1:08 mins] <u>https://youtu.be/B3fL30ZITMQ?si=pysLlpVq6puHlfwe</u>

Video: How To Write A Case Study | Amazon Case Study Example [4:53 mins] <u>https://youtu.be/k9KK\_0zr3LU?si=ZOa\_AyfAHQkVCkH4</u>

BiaSol: https://www.biasol.ie/

Cream of the Crop: <u>https://creamofthecropgelato.com/</u>

FoodMarble: <u>https://foodmarble.com/</u>

Manna: https://www.manna.aero/

Revolution Farm & Kitchen: <u>https://revolutionfarmkitchen.com/</u>

Willows Ingredients: https://www.willowsingredients.com/

## LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Think about food businesses in your local area. Can you think of any that are similar to the ones you have learned about in this lesson and the previous one? If so, how are they similar? Or how are they different? Can you visit the company building/site, or test out their food products?

## MM6: L4 WS CASE STUDY TEMPLATE



A case study is a detailed study of a specific subject (e.g. a food-based company) in its real-world context. A case study is a document that allows you to describe your chosen company in detail and identify its objectives (goals) and activities.

You are tasked with creating a case study using the template below.

#### Instructions:

- 1. Work together in your group to learn about the company you picked during the previous lesson.
- 2. Using the company website provided, start to fill in the template below.
- 3. As you are moving through the template and answering the questions, pay attention to other things that might interest you such as imagery, advertisements, or text.
- 4. You may need to use Google or social media to find out more about your company and complete the template.
- 5. Take your time! Your case study should be as accurate as possible. Try to avoid one-word answers in your template write sentences to explain what you have found and learned.

Remember: You need to work as a team so consider agreeing on shared roles and responsibilities. For example: Who will fill out the template? Who will search the internet? Who will find interesting images to include?

## MM6: L4 WS CASE STUDY TEMPLATE

Name of company/brand	
Type of company e.g. Charity, Tech, Food Manufacturer	
What does the company do? i.e Do they sell a product? Do they provide a service?	
What is their mission statement (if available)	
When was the company established?	
Where is the company located?	
What is the objective of the company? i.e What does the company want to achieve? What are its goals?	
What challenges are they trying to overcome? e.g. environmental challenges, cost of living etc.	
List all of their solutions i.e. What have they created to overcome their challenges; what do they offer to their customers?	

2 ZERO HUNGER

## MM6: L4 WS CASE STUDY TEMPLATE



How can people interact with the company? i.e. Can people buy their products? Can they download their app? Can they visit their store?	
Who is the CEO or Founder(s)?	
Where can people learn about the company? Include links to relevant websites, social media pages, reports etc.	
List 3 competitors (similar companies) Competitors include other companies that offer similar products or services in the same location or online.	
Images Include images of the company/brand. These might include screenshots of the website, photos of their food products, photos of their team or customers, diagrams, charts,and logos.	



You will be assigned three of the following case studies.

Follow the link to their website and analyse the case studies. What makes it a good case study or a bad case study?

Think about:

- 1. What are the differences between the case studies?
- 2. Which case study do you think is the best? Why?
- 3. Which case study is the most engaging? Why?
- 4. Which case study is the least engaging? Why?

Gourmet Goodies Ltd: <u>https://www.thefoodsafetycompany.ie/case-study/gourmet-goodies-ltd-case-study/</u>

Kecipir: https://www.ellenmacarthurfoundation.org/circular-examples/kecipir

Meltdown: https://www.localenterprise.ie/DublinCity/Case-Studies/Meltdown.html

Glenmar Shellfish Ltd: https://www.thefoodsafetycompany.ie/case-study/glenmar-shellfish-ltd/

BFree Foods: <u>https://globalambition.ie/bfree-foods-pioneers-gluten-free-innovation-to-drive-export-growth/</u>

You can use this space to make some notes as you look up the case studies

## MM6: L5 WS DESIGN YOUR CASE STUDY



A case study is a detailed study of a specific subject (e.g. a food-based company) in its real-world context. A case study is a document that allows

you to describe your chosen company in detail and identify its objectives (goals) and activities.

You are tasked with turning your completed case study template from the previous lesson into a unique and visually compelling design document.

#### Instructions:

- 1. Working together, take a minute to review your case study template, paying attention to the information you included in response to each question and section.
- 2. Next, you need to choose a tool or app to design your case study. Depending on what is available, you might consider using Word, Powerpoint, Canva, or Keynote, for example. If digital tools are not available you can create a physical case study using a sheet of paper (ideally A3 in size), pens, pencils, markers etc.
- 3. If using a digital tool or app, decide whether it's best to use a template or start with a blank canvas/artboard, if either are available.
- 4. If using a template, consider making adjustments by customising the colours, moving around some of the elements on the page, or changing the font. If starting from scratch with a blank page, you need to decide where the information from your case study template will go, as well as deciding how it look (colours, shape, layout, fonts, etc.). Both options will give you an opportunity to be creative with your content!
- 5. Next, think about how you want to present the information in your case study.
  - a. What information should go at the top of the page?
  - b.Do you need a title?
  - c. How big should the elements be on the page?
  - d. What is the most important piece of content?
  - e. Are there images? How many can you include?
  - f. Can you bring in elements of the company's brand such as their logo or colours or patterns?
- 6. As you're designing your case study and adding the text from your template, consider whether you need to rewrite or rephrase some of the information from your template. It's important that the text is clear and makes sense to the reader.
- 7. Work together to share roles and delegate tasks. This is an opportunity to collaborate and express the ideas of the group!
- 8. When you have completed your design, make sure to save it and print it out!

Useful resources to help you during this activity:

- Canva Case Study Templates: <u>https://www.canva.com/templates/s/case-study/</u>
- Case Study Designs: <a href="https://99designs.com/inspiration/designs/case-study">https://99designs.com/inspiration/designs/case-study</a>
- 15+ Profession Case Study Examples [Design Tips + Templates]: <u>https://venngage.com/blog/case-study-examples/</u>



MM 6: Food Futures Today

## Implementation

Lesson 5: Create a Case Study Part 2

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: Create a Case Study Part 2

In this lesson, learners will transform their case study from a research document into a visually compelling and engaging artefact. It is a chance for learners to practice and express their creative ideas and skills.

Vocabulary: Business, Brand, Case Study, Circular, Competitor, Environment, Food Systems, Local, Research, Solution, Startup, Strategy, Sustainability, Technology

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

- transform a basic case study into a visually compelling document
- develop basic content design and visual layout skills
- use digital editing and content creation software
- work together to make decisions and delegate tasks

- Print-Outs: Case Studies
- Worksheet: Design Your Case Study
- Internet access
- Markers/pens/pencils
- Paper



#### **ACTIVITY INSTRUCTIONS**

#### Activity 1: What Makes a Case Study (15mins)

- 1. Learners should continue working in their groups from the previous lessons.
- 2. Distribute the print-outs: 'case studies' (at least 3 case studies per group).
- 3. Each group should spend the time allocated for this activity reviewing and discussing the case studies assigned to them. The goal of this is for the learners to understand what makes a good study (or what makes a bad study). They will need to analyse and assess the case studies together to determine what works and what doesn't. Here are some prompts to encourage the discussion:

a. What are the differences between the case studies?

- b. Which case study do you think is the best? Why?
- c. Which case study is the most engaging? Why?
- d. Which case study is the least engaging? Why?

#### Activity 2: Design Your Case Study (35mins)

- 1. Each group will need their finished case study template from lesson 3–4 to complete this activity.
- 2. If possible, learners should have access to shared class computers and presentation software such as Powerpoint, Word, Keynote, or Canva. Alternatively, learners can design their case study using paper, stickers, markers, collage etc.
- 3. Distribute the guide: 'Design Your Case Study' (one per group).
- 4. Read through the guide aloud with the class. Address any questions if needed.
- 5. Allow the groups approx. 10 mins to review the guide together, make notes, and devise a plan for designing their case study. Some considerations and prompts to help the learners at this stage:
  - a. Who will lead the design i.e. look and feel and layout of the case study?
  - b. Who will make copy edits and be responsible for any additional writing?
  - c. Who will ensure that the information, quotes, statistics, links etc. is transferred accurately?
- 6. When ready, each group should take their case study template (from the previous lesson) and redesign it in a unique and visually compelling way. Learners are required to produce a one-page document only but can decide on its format (portrait or landscape), its layout (how elements like boxes, images and text are distributed across the page), the colour palette, use of images, etc.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, distribute 1 case study to each group (activity 1). Alternatively, skip activity 1. Use a template in Canva or another digital tool to design the case study.

Extension: For a longer lesson, allow more time for the learners to design their case study. Encourage learners to share their work-in-progress with other teams. Encourage ongoing feedback and idea-sharing between the groups.

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

- Canva Case Study Templates: <u>https://www.canva.com/templates/s/case-study/</u>
- Case Study Designs: <a href="https://99designs.com/inspiration/designs/case-study">https://99designs.com/inspiration/designs/case-study</a>
- 15+ Profession Case Study Examples [Design Tips + Templates]: <u>https://venngage.com/blog/case-study-examples/</u>
- Kerry case studies: <u>https://www.kerry.com/insights/case-studies</u>
- Teagasc case studies: <u>https://www.teagasc.ie/about/research--innovation/engage-with-us/case-studies/</u>
- The Food Safety Company case studies: <u>https://www.thefoodsafetycompany.ie/about-us/case-studies/</u>
- Local Enterprise (Dublin City) case studies: <u>https://www.localenterprise.ie/DublinCity/Case-Studies/</u>
- BiaSol: <u>https://www.biasol.ie/</u>
- Cream of the Crop: <u>https://creamofthecropgelato.com/</u>
- FoodMarble: <u>https://foodmarble.com/</u>
- Manna: <u>https://www.manna.aero/</u>
- Revolution Farm & Kitchen: https://revolutionfarmkitchen.com/
- Willows Ingredients: <u>https://www.willowsingredients.com/</u>

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

See Communications micro-module 7 for additional resources.



**MM6: Food Futures Today** 

## Implementation

Lesson 6: Present Your Case Study

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: Present Your Case Study

In this lesson, learners will present their completed case studies from the previous lessons in this module. They will develop verbal communication skills and practice active listening.

Vocabulary: Business, Brand, Case Study, Circular, Competitor, Environment, Food Systems, Local, Research, Solution, Startup, Strategy, Sustainability, Technology

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

- present their completed case study to their peers
- practice verbal communication
- develop articulation and confidence
- learn about other business cases

- Case Study from Lesson 3-4
- Designed Case Study from Lesson 5



#### **ACTIVITY INSTRUCTIONS**

Activity 1: Present Your Case Study (50mins)

- 1. Learners should continue working in their groups from the previous lessons.
- 2. Each group will need either their finished case study template from lesson 3–4 or their designed case study from lesson 5 to complete this activity.
- 3. Taking it in turn, each group should present their case study to the class. Ask the learners to place their printed case study on a shared classroom board, or if all case studies were designed digitally then students may present using the classroom computer display/screen, if suitable.
- 4. Each group should have 3–4 minutes to present (depending on how many groups in total), allowing 1 minute of class feedback at the end of each presentation. Here are some prompts for the learners when providing feedback to their peers:
  - Was the case study clearly structured?
  - What did you learn from the case study?
  - What aspects of the case study design did you like?
- 5. It is important that each learner is given the opportunity to present at least one aspect of their completed case study. It is at the discretion of the teacher and learners to decide how this should work. For example:
  - Should each learner have 1 minute each to present?
  - Should each learner present a different section of the case study e.g. overview, objectives, solution etc.

NOTE: If time permits, groups may also choose to showcase their chosen company's website by loading it on the class display/screen.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, run this over two classes. Reduce the amount of total presentations.

Extension: For a longer lesson, allow time for each group to practice their presentation in advance. Please see step 4 for feedback prompts.

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

BiaSol: https://www.biasol.ie/

Cream of the Crop: <u>https://creamofthecropgelato.com/</u>

FoodMarble: https://foodmarble.com/

Manna: https://www.manna.aero/

Revolution Farm & Kitchen: https://revolutionfarmkitchen.com/

Willows Ingredients: https://www.willowsingredients.com/

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

For the presentation, learners can consider additional materials to support their case study. For example, they might want to share the company's website or bring in one of their food products.

Invite others to the presentations e.g other students, parents' council or board of management or community groups and organisations working with food or agricultural practices and discuss the implications and issue surrounding their case studies.

Learners can also publish their case studies in the class e-repository and share with other year groups / classes e.g. Leaving Cert Agricultural Science or Junior Cert - short programme Food Glorious Food



MM 6: Food Futures Today

Implementation

Lesson 7: STEAM My Food

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: STEAM My Food

In this lesson, learners will have the opportunity to discover the world of STEAM. They will learn about the different themes and disciplines of science, technology, engineering, art, and mathematics.

Vocabulary: Arts, Career Studies, Collaboration, Cultivated Meat, Cultured Meat, Design, Engineering, Humanities, Innovation, Mathematics, Media, Science, STEM, STEAM, Technology, Visual Arts

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

- learn about STEM and STEAM
- · discover diverse career paths and industries
- work independently

- Worksheet: Understanding STEM and STEAM
- Worksheet: STEAM and Food
- Internet access
- Markers/pens/pencils
- Paper
- Markers/colouring pencils



#### **ACTIVITY INSTRUCTIONS**

Activity 1: Understanding STEM and STEAM (20 mins)

- 1. Distribute worksheet: 'Understanding STEM and STEAM' (one per learner)
- 2. As a class, watch the videos:
  - 'STEM What is it and why is it important?' (3:06 mins), and
  - 'What is STEAM Education?' (1:13 min).
- 3. Ask the learners to complete the worksheet while watching the videos
- 4. Facilitate a class discussion and ask the learners to compare STEM and STEAM in their own words. Use the worksheet as a conversation guide.

#### Activity 2: STEAM and Food (30 mins)

- 1. Distribute worksheet: 'STEAM and Food' (one per learner)
- 2. Ask the learners to read about the food innovation and complete the worksheet by following the instructions.
- 3. If there is time, allow learners to discuss their food innovation with the person sitting next to them.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, skip activity 2.

Extension: For a longer lesson, as a class, watch all videos linked in media box. Ask the learners to write notes as their watching the videos then facilitate a group discussion using the worksheet: Understanding STEM and STEAM as a guide.

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

- Video: STEM What is it and why is it important? (3:06 mins) <u>https://youtu.be/fH5iLx\_jCUk?</u> si=7NOWBR5jRARIXypX
- Video: What is STEAM Education? (1:13 min) <u>https://youtu.be/qkAuB-telSI?</u> si=W04zqZnPBbc2BIIF
- Video: What is STEM? (1:39 min) <u>https://youtu.be/q-\_WefS\_pV4?si=9Mfq-gASjd9o\_Y6t</u>
- Video: Why STEM? (2:07 min) <u>https://youtu.be/QYCuYz2YK9o?si=17qWwEt2BEmn0qKh</u>
- Article: Meatball from long-extinct mammoth created by food firm: <u>https://www.theguardian.com/environment/2023/mar/28/meatball-mammoth-created-cultivated-meat-firm</u>
- Article: This Massive Meatball Was Made With Woolly Mammoth DNA: <u>https://www.smithsonianmag.com/smart-news/this-massive-meatball-was-made-with-woolly-mammoth-dna-180981908/</u>
- Article: Elephant in the dining room: Startup makes mammoth meatball
  <u>https://apnews.com/article/oddities-mammoth-meatball-30e0731838f52cc18fb22d1faee1f8ce</u>

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

Ask the learners to consider the subjects taught in the school. Do they fit into or support the STEAM theme? Can they talk to their teachers to understand STEAM career options or innovative projects that are possible? Ask the learners to think about possible collaborations between the subjects and how science, technology, engineering, art/design, and mathematics might intertwine.

Encourage the learners to explore the following art and food science innovators:

- <u>https://www.foodartresearch.network/</u>
- Ann Dimitriu: <u>https://annadumitriu.co.uk/</u>
- Marije Vogelzang: <u>https://www.marijevogelzang.nl/</u>

## MM6: L7 WS UNDERSTANDING STEM AND STEAM

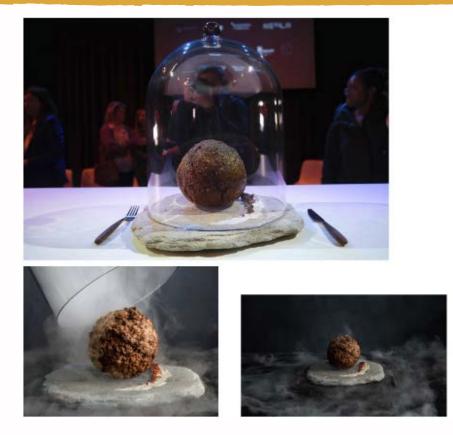
What does STEM stand for?
S
Т
E
M
What does the A in STEAM stand for?
A
List one potential career option for each theme:
S
Т
E
A
M
Which school subjects do you think relate to STEAM? List as many for each theme as you'd like.
S
Т
E
Α
M
In your own words, why is STEAM important?



-1-

#### MM6: L7 WS STEAM AND FOOD





#### Back from the Dead: The Mammoth Meatball

A start-up named Colossal has created a sphere of lab-grown meat, produced with a DNA sequence from the long extinct Woolly Mammoth. According to the Guardian newspaper, "the project aims to demonstrate the potential of meat grown from cells, without the slaughter of animals, and to highlight the link between large-scale livestock production and the destruction of wildlife and the climate crisis."

Instructions:

- 1. Take a few minutes to read about the food innovation above.
- 2. Then, answer the questions at the bottom of this worksheet.
- 3. If there is time, have a short discussion with the person next to you. Consider the following questions in addition to your written answers below:
  - a. Are you surprised that it exists?
  - b. What kind of skills do you think were needed to create it?
  - c. Does it look tasty? Would you eat it?
- Q. How do you think this food innovation fits into STEAM?

SCIENCE: What is the science of this food?

## MM6: L7 WS STEAM AND FOOD

TECHNOLOGY: What kind of technology was used?

ENGINEERING: How was this food engineered?

ART: What is the art/design of this food?

MATH: What is the math behind this food?





MM 6: Food Futures Today

Implementation

Lesson 8: Food Innovations

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: Food Innovations

Learners will be given a preview of the future of food through the lens of innovative startups, products, and concepts. They will see how different technologies, materials, and approaches can be used to create novel food experiences.

## Vocabulary: Artificial Intelligence, Cultivated, Cultured, Digital, Innovation, Resources, Robotics, Speculative, Technology

### In this lesson, the learner will:

- explore trends in food innovation
- · learn about new technologies in food
- consider future possibilities in food science, tech, and art
- · be inspired by global innovators
- work in groups
- engage in critique and discussion
- · learn to develop a point of view

- Supporting Resources: Innovations (x 12)
- Internet access



#### **ACTIVITY INSTRUCTIONS**

Activity 1: Innovation Review and Critique (30 mins)

- 1. Divide the class into groups of 5–6 per table.
- 2. Distribute the Supporting Resources: 'Innovations'. Note: you will need multiple copies of each innovation: Each group should be given a selection of 3 innovations from the 12 provided. While some of the groups will end up with the same innovations, try to ensure that each group has a different set of 3 innovations, where possible.
- 3. Working in groups, ask the learners to read the innovations. They should do this step quietly and independently. Allow approx. 5 mins for this step.
- 4. When everyone in the group has read the innovations, they should begin a group discussion. Each learner should try to share their thoughts and offer a critique on each innovation. Use these questions to help guide the discussions:
  - Which one did you like the most? Why?
  - Which one did you like the least? Why?
  - Did they surprise you?
  - Have you come across innovations like these before? Where? Can you give an example?
  - Do you think these will become popular in Ireland? Why?

TIP: Writing the questions above on a whiteboard or class display will help the groups progress at their own pace.

#### Activity 2: Class Discussion (20 mins)

- 1. When the groups have finished the critique of their assigned innovations, open the discussion up to the entire class by asking each group to share one innovation with everyone. They should work together in their groups to choose the innovation to be shared. They might collectively decide to share an innovation that everyone in the group liked, disliked, or one that caused conflicting opinions.
- 2. Each group should take it in turn to share their innovation. They should try to answer the questions from step 4, activity 1 so the other groups can understand why they chose this innovation.
- 3. Allow learners from all groups to respond with additional questions or critique at the end of each group share. Did other groups choose the same innovation?

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, skip activity 2.

Extension: For a longer lesson, distribute more than 3 innovation print-outs to each group. Allow the learners to explore the links provided in the multimedia box and innovation print outs.

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

- Feature: 40 Food Innovations You Should Know About: <u>https://www.boardofinnovation.com/blog/40-food-innovations-that-excite-us/</u>
- Blog: Discover 10 Emerging Food Industry Trends in 2024: <u>https://www.startus-</u> insights.com/innovators-guide/top-10-food-technology-trends-innovations-in-2021/
- Blog: 11 new technologies that will soon appear in the kitchen:
  <u>https://agrovent.com/en/blog/11-new-technologies-that-will-soon-appear-in-the-kitchen/</u>
- Inspiration:
  - Engineering students invent edible tape for burritos and wraps: <u>https://www.designboom.com/design/edible-tape-burritos-05-17-2022/</u>
  - The first lab-grown seafood will be fancy: <u>https://www.vox.com/future-perfect/23507372/lab-grown-seafood-fish-bluenalu-wildtype-cultivated-cultured-meat</u>
  - The science of cultivated meat: <u>https://gfi.org/science/the-science-of-cultivated-meat/#:~:text=Cultivated%20meat%2C%20also%20known%20as,and%20farm%20animals%20for%20food</u>.
  - Student Winner—Core77 Design Awards 2019: Neo Fruits: <u>https://designawards.core77.com/speculative-design/84449/Neo-Fruit</u>
  - Video: Is 3D Printed Food the Future? [4:53mins] <u>https://www.youtube.com/watch?</u> <u>v=2kCjSq\_l-0s</u>

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

After discovering the different types of food innovations, consider learning more about the ones that stood out to you most. Use the internet to learn about the innovation in more detail —what companies are working in this space? Does it exist in Ireland? How far into the future can you expect to see it/buy it/use it/taste it?

Tell your family, friends, and peers about these innovations and ask them for their opinions. Are they excited? Are they surprised? Are they disgusted?!



#### Innovation 1: 3D Printed Food



In 10 years, devices like Foodini's desktop 3D printer will reduce waste by "printing" yesterday's bread into baked snacks. On a larger scale, this model will help alleviate food insecurity.

#### **Innovation 2: Kitchen Composting**



Small electric composters like the Zera Food Recycler can become the backbone of kitchens, drastically reducing litter by recycling food waste, including meat and milk, into ready compost for houseplants overnight.

#### **Innovation 3: Kitchen Operating System**



A unified "kitchen OS" will not only allow a smart refrigerator to communicate with a smart oven (and smartphone), but will also use artificial intelligence to automate meal planning and cooking based on preferences, dislikes and dietary needs.

Fresco (Ireland): https://frescocooks.com/

#### **Innovation 4: Kitchen Robot**



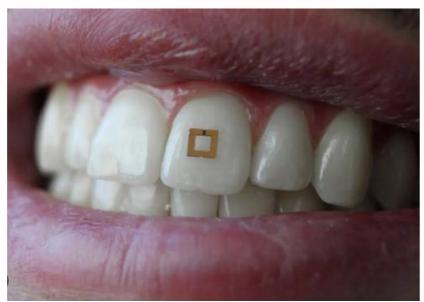
By 2030, robots like Samsung's Bot Chef will be chopping, mixing, lifting and pouring food in many homes, a game changer for the 61% of seniors who want to spend their old age at home but need help with cooking.

Samsung's Bot Chef: <u>https://news.samsung.com/global/get-a-glimpse-of-the-next-generation-innovations-on-display-at-samsungs-technology-showcase</u>





#### **Innovation 5: Food Sensor**



In 2018, Tufts University announced its researchers had developed a tooth-mounted sensor which could detect or measure your alcohol, sugar, or salt intake. The 2mm x 2mm sensor could be useful for medical purposes, and to enable people on specific diets to monitor and track what they're eating.

Tooth-mounted Sensor: <u>https://now.tufts.edu/2018/03/22/scientists-develop-tiny-tooth-mounted-sensors-can-track-what-you-eat</u>

#### **Innovation 6: Fresher Fruit**



Startup Stixfresh has produced a sticker that is said to make fruit stay fresh 50% longer. The sticker works by creating a protective layer around the fruit. Its coating is made from beeswax and ingredients that feature a GRAS (generally considered as safe) status issued by the US Food and Drug Administration.

StixFresh: <u>https://uplink.weforum.org/uplink/s/uplink-</u> contribution/a012o00001OT3jwAAD/StixFresh%20-<u>%20Protect%20you%20fruits,%20stays%20fresh%20longer%E2%9C%AA</u>



**Innovation 7: Edible Packaging** 



John Hopkins University Engineering students Tyler Guarino, Marie Eric, Rachel Nie, and Erin Walsh formed a team and devised 'Tastee Tape', an edible adhesive that zips the burrito, taco, gyro, wrap, or food art and keeps its ingredients from falling out from its tuck.

Tastee Tape: https://www.designboom.com/design/edible-tape-burritos-05-17-2022/



#### Innovation 8: Artificial Intelligence

Al and machine-learning platform Gastrograph Al compiles and analyzes data on the raw ingredients in the food we buy. The company uses this to help food and beverage producers predict which products customers in their target demographic will pay for. Manufacturers can see the flavors, scents, and textures consumers prefer, and develop products, optimize branding, and produce cognitive marketing campaigns accordingly.

Gastrograph: https://www.gastrograph.com/



**Innovation 9: No More Plastics** 



Indonesia-based startup Evoware is putting the eco-friendly raw material forward as a plastics replacement for food packaging. Its production doesn't require fertilizer, and it actually absorbs CO2 during growth. Evoware's innovative edible packaging (that contains fiber, vitamins, and minerals) is used by Belgian fine waffles manufacturer Bruxelwaffle.

Evoware: https://rethink-plastic.com/home/



Innovation 10: Fishless Fish

"Cultivated" or "cultured" fish such as BLUU Seafood is designed to tackle many distinct challenges, such as overfishing, ocean pollution, and climate change. This type of fish or meat is genuine animal meat (including seafood and organ meats) that is produced by cultivating animal cells directly. This production method eliminates the need to raise and fish or farm animals for food.

BLUU Seafood: https://bluu.bio/

#### **Innovation 11: Plant Steak**





Juicy Marbles is a collective of creators who do food, science, and art. They produce plantbased steaks that look and taste exactly like traditional animal meat products but without the need of animals.

Juicy Marbles: https://eu.juicymarbles.com/

#### **Innovation 12: Four-Dimensional Fruit**



Neo Fruit is a project that can be considered as a Speculative Technological Design Project, focusing our attention to a future scenario in which we will create all our food artificially. The fruits are artificially designed printed in 4 dimensions. The project offers a fresh artificial alternative to familiar fruits for the future.

Neo Fruit: https://designawards.core77.com/speculative-design/84449/Neo-Fruit



MM 6: Food Futures Today

Implementation

Lesson 9: How Might We Eat?

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: How Might We Eat?

This lesson is about brainstorming ideas in relation to specific food challenges and concepts. In this lesson, learners will be challenged to think about the future, and how acts of food preparation and consumption might change, disappear, or be introduced.

## Vocabulary: Brainstorm, Concept, Ideation, Mind Map, Research

## In this lesson, the learner will:

- use mind mapping to explore new ideas quickly
- explore future food challenges
- challenge themselves to think laterally
- develop research skills

- Worksheet: Mind Map
- Worksheet: Researching Ideas
- Paper
- Markers/Pens/Pencils
- Internet access

## MM6: Food Futures Today L9: How Might We Eat?





### **ACTIVITY INSTRUCTIONS**

Activity 1: Mind Map (25 mins)

- 1. Learners should complete this activity independently.
- 2. Distribute the worksheet: Mind Map (one per learner). Each learner will also need a blank page or notebook (A4 size or larger).
- 3. The goal of this activity is to allow the learners to explore ideas and topics in response to a specific future food challenge. Learners must choose one of the following as the starting point for their mind map:

a. How might we cook in the future?

- b. How might we grow food in the future?
- c. How might we order from restaurants in the future?
- d. How might we taste food in the future?
- 4. Once the learners have chosen their preferred question, they should follow the worksheet instructions to complete their mind map.

#### Activity 2: Researching Ideas (25 mins)

- 1. When learners have completed their mind maps, encourage them to deepen their knowledge about the subject and their new ideas by conducting some research using the internet and any available resources (books, magazines, videos). Distribute the worksheet: Researching Ideas for this step.
- 2. Learners may work independently or in groups to complete this activity. For example, if there are many learners mapping ideas in response to the future of restaurants, they may want to work together to research new restaurant technologies, dining experiences, or look for menu inspiration.
- 3. Ask the learners to document their research by writing down key facts, quotes, taking screenshots, or printing interesting and relevant imagery.

### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, skip activity 2.

Extension: For a longer lesson, allow the learners to spend more time on activity 2.

Option B: Ask learners to create additional mind maps for another challenge. Learners could also find others with the same challenge and compare their mind maps

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

Video: Ideation with Mind Mapping (2:39 mins): <u>https://youtu.be/pgwcqjdYSrg?si=42-8cYN1t7JFM6XS</u>

Article: How to Make a Mind Map: <u>https://www.lucidchart.com/pages/how-to-make-a-mind-map</u>

Article: The Complete Guide on How to Mind Map for Beginners: <u>https://blog.iqmatrix.com/how-to-mind-map</u>

Article: Concept Map Vs. Mind Map: https://www.mindmanager.com/en/tips/concept-vs-mind/

Video: Moley Cooking Highlights (1:31 mins): <u>https://youtu.be/BOIAbVodM\_c?</u> <u>si=Ryikv8huZbhHURYh</u>

Video: The Futuristic Farms That Will Feed the World | Freethink | Future of Food (6:19 mins): <u>https://youtu.be/KfB2sx9uCkI?si=7btR3V-S6-pRALrw</u>

Video: The Restaurant of the Future (0.56 mins): <u>https://youtu.be/TRHqxQK3CX8?</u> <u>si=LCEbXHBNrdO1s3NU</u>

Video: In the Future, You'll Be Able To Taste When Your Medicine Is Working (2:05 mins): <u>https://youtu.be/TziNIb3-Dwc?si=ZdN7vG76smgwDZPs</u>

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

If learners have access to classroom devices and internet, they may prefer to use Canva to create their mind maps: <u>https://www.canva.com/graphs/mind-maps/</u>

#### MM6: L9 WS MIND MAP

A mind map is a visual tool that helps you to generate new ideas, practice creative thinking, and organise your thoughts. A mind map always starts with

one main topic, question, challenge, or theme that is written at the centre of a blank page or canvas. From there, the goal is to branch out and identify related concepts, questions, or keywords.

Mind maps help you to identify all the possible ideas or thoughts related to one thing as quickly and simply as possible, while also understanding the connections and possible relationships between the different elements.

#### Instructions:

Choose one of the following questions for your mind map:

- a. How might we cook in the future?
- b. How might we grow food in the future?
- c. How might we order from restaurants in the future?
- d. How might we taste food in the future?

Taking a blank page, write your chosen question about in the middle of the page and circle it.

Now, write down any word, thought, or idea that comes to mind when you think about this question. For example, if you're thinking about restaurants in the future, you might write down words such as: dining, city, kitchen, celebration, menu, spaceship. Feel free to draw your idea or include pictures instead of words if helpful!

Circle each word, thought, or idea and draw connections where you see one thing relate to another.

When you're ready, take a step back and look at your mind map. Have you come up with any brilliant new ideas in response to your chosen question? Write down this key idea at the bottom of your page under your map. Don't worry, it can be broad or simple! For example, if you're thinking about restaurants in the future, your idea might be about reimagining the way restaurant menus work or look.



## **MM6: L9 WS RESEARCHING IDEAS**



Take time to research the question at the centre of your mind map. Use the following prompts to guide your research and learn more about your question/topic.

How much do you know about it today?

What might you like to know about it?

Can you find new information to help inform your mind map or build on your current ideas? Add your findings below. Use the internet, books, and magazines to learn more the topic. See also the multimedia box for inspirational links.

What 3 facts did you learn about your question/topic?

1\_\_\_\_\_ 2\_\_\_\_\_ 3\_\_\_\_\_

## **MM6: L9 WS RESEARCHING IDEAS**

Can you add any imagery to show us what the future looks like? You might include things like found illustrations, photos, 3D models etc.





MM 6: Food Futures Today

## Implementation

Lesson 10: Future Food Possibilities

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: Future Food Possibilities

This lesson is about learners imagining new ways for people to experience food using speculative design methods and scenario mapping. Learners will use empathy to develop a human-centered food-based experience for the future.

## Vocabulary: Design Thinking, Empathy, Futures Thinking, Speculative, Speculation

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

- practice speculative design methods
- practice human-centered design thinking
- rapidly ideate future possibilities
- apply critical thinking

- Worksheet: Cone of Possibilities
- Worksheet: To-Be Scenario Map
- Teachers Guide: Sample Future Trends
- Paper
- Markers/Pens/Pencils
- Internet access

## MM6: Food Futures Today L10: Future Food Possibilities





#### **ACTIVITY INSTRUCTIONS**

#### Activity 1: Cone of Possibilities (20 mins)

- 1. Learners should complete this activity independently.
- 2. Distribute the worksheet: 'Cone of Possibilities' (one per learner).
- 3. The goal of this activity is to allow the learners to think about possible realities in response to a specific future food challenge. Learners must choose one of the following for their Cone of Possibilities activity:
  - How might we cook in the future?
  - How might we grow food in the future?
  - How might we order from restaurants in the future?
  - How might we taste food in the future?
- 1. Ask the learners to write their chosen question on the top of their worksheet.
- 2. Next, learners should think about-and write down-3 possible futures:
  - What is possible? Starting with this, learners should think about what could happen.
    Even if it seems very difficult or expensive or unlikely.
  - What is preferred? This is what the learners wants to happen. This should be their ideal answer, the most exciting or interesting even if it doesn't seem very possible.
  - What is probably? Lastly, what does the learner think is likely to happen? It might be the obvious answer or something that is already happening today.

NOTE: If lesson 9 of this module was completed, learners are free to refer back to their worksheets, research findings and ideas to complete this activity.

#### Activity 2: To-Be Scenario Map (30 mins)

- 1. Distribute the worksheet: 'To-Be Scenario Map' (one per learner).
- 2. Taking their preferred possibility from activity 1, ask the learners to complete the template following the instructions in the worksheet. The goal of this activity is for the learners to plot out a flow, or phased scenario, for their preferred possibility. They will need to think about what people might need to do, what they will think, and how they will feel about this new idea.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, allow the learners to work in groups. Delegate tasks and roles for each activity.

Extension: For a longer lesson, allow the learners to research their question before completing the worksheet in activity 1. Use the following questions to guide the research:

- How much do you know about it today?
- What might you like to know about it?
- Can you find new information to inform your mind map or build on your current ideas? Use the internet, books, and magazines to learn more the topic. See also the multimedia box for links.

Option B: You can also use the Teachers Guide as a discussion prompt to explore the different scenarios

if lesson 9 of this module was delivered, activity 1 can be delivered as an extension of that lesson. Allow more time for the activity

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

- Video: Scenario Mapping for Design Exploration (3:13 mins): <u>https://youtu.be/dmlFRCZI9gQ?</u> si=skXrNz7-OWg0dFhh
- Toolkit: To-be Scenario Map by IBM:
- <u>https://www.ibm.com/design/thinking/page/toolkit/activity/to-be-scenario-map</u>
- Video: Moley Cooking Highlights (1:31 mins): <u>https://youtu.be/BOIAbVodM\_c?</u> <u>si=Ryikv8huZbhHURYh</u>
- Video: The Futuristic Farms That Will Feed the World | Freethink | Future of Food (6:19 mins): <u>https://youtu.be/KfB2sx9uCkl?si=7btR3V-S6-pRALrw</u>
- Video: The Restaurant of the Future (0.56 mins): <u>https://youtu.be/TRHqxQK3CX8?</u> <u>si=LCEbXHBNrdO1s3NU</u>
- Video: In the Future, You'll Be Able To Taste When Your Medicine Is Working (2:05 mins): <u>https://youtu.be/TziNIb3-Dwc?si=ZdN7vG76smgwDZPs</u>

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

Ask the learners to share their To-Be Scenario Map with a family member, peer, coach, teacher, or guardian. When sharing their proposed scenario, they should ask for feedback from the viewer. Does the viewer find this interesting? Can they see themselves in this scenario? What questions do they have about the ideas?

# Here are some Sample Trends you can use to prompt learners for Activity 1



#### How we cook in the future:

- 1. Smart Kitchen Appliances: Integration of AI and IoT (Internet of Things) technology into kitchen appliances, allowing for precise cooking control, recipe suggestions, and automated cooking processes.
- 2.3D Food Printing: Advancements in 3D printing technology could allow for the creation of intricate food designs and customized nutritional profiles.
- 3. Lab-Grown Meat: Cultured meat production could become more mainstream, offering a sustainable and ethical alternative to traditional animal farming.
- 4. Personalized Nutrition: Tailored meal plans and recipes based on individual health metrics, genetic information, and dietary preferences.
- 5. Virtual Cooking Assistants: Virtual reality (VR) or augmented reality (AR) platforms providing step-by-step cooking guidance and immersive culinary experiences.

#### How we grow food in the future:

- 1. Vertical Farming: Expansion of vertical farming methods utilizing hydroponics, aeroponics, and other soilless techniques to maximize space efficiency and minimize environmental impact.
- 2. Urban Agriculture: Increased adoption of rooftop gardens, indoor farming systems, and community gardens in urban areas to promote local food production and reduce food miles.
- 3. Genetic Engineering: Development of genetically modified crops with enhanced nutritional value, resilience to climate change, and higher yields.
- 4. Aquaponics and Algae Farming: Integration of aquaponic systems combining fish farming with plant cultivation, as well as the cultivation of algae for its nutritional benefits and potential as a sustainable protein source.
- 5. Robotics in Agriculture: Automation of farming processes using drones, robots, and Alpowered machinery to optimize resource usage and increase productivity.

#### How we order from restaurants in the future:

- 1. Al-Powered Recommendations: Personalized restaurant suggestions based on past dining preferences, location, and social media activity.
- 2. Virtual Dining Experiences: Virtual reality platforms offering immersive restaurant experiences, allowing customers to "visit" and order from restaurants around the world without leaving their homes.
- 3. Blockchain for Transparency: Integration of blockchain technology to ensure transparency in the food supply chain, providing consumers with information about the origin, quality, and sustainability of restaurant ingredients.
- 4. Drone Delivery: Expansion of drone delivery services for food orders, enabling faster and more efficient delivery times, especially in urban areas.

## MM6: L10 TG SAMPLE TRENDS

5. Voice-Activated Ordering: Ordering food through voice-activated assistants and smart home devices, streamlining the ordering process and reducing the need for manual input.

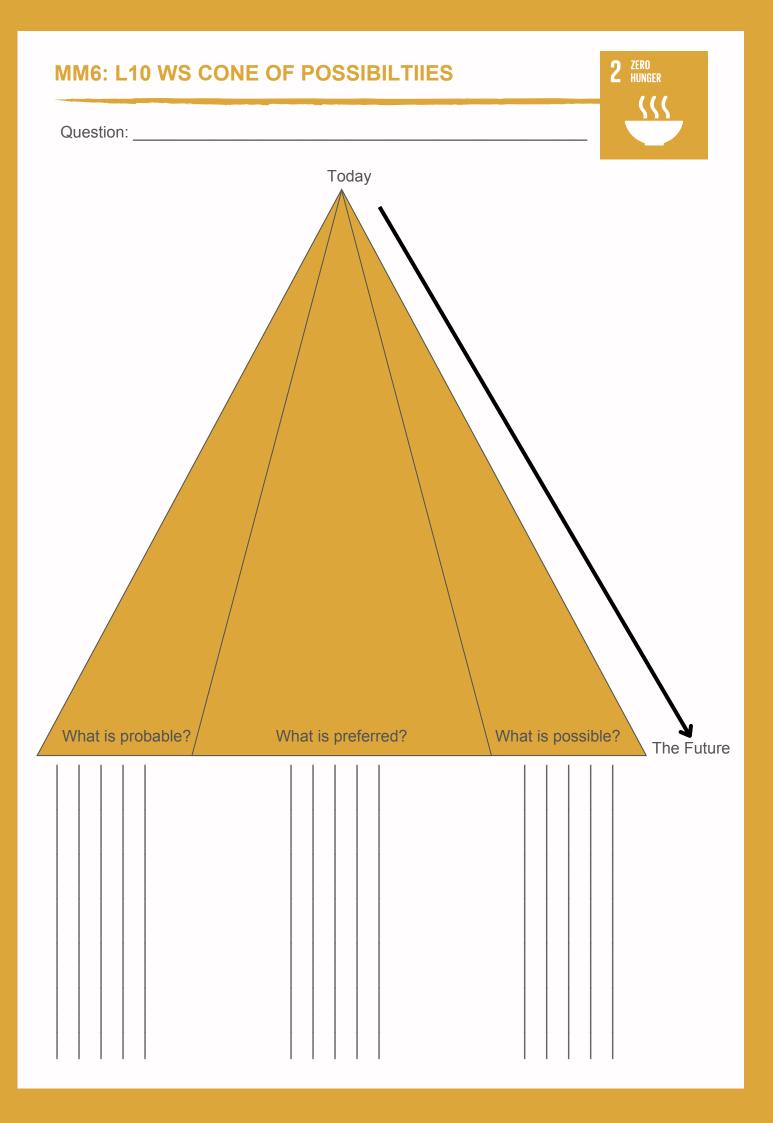
#### How we taste food in the future:

1. Digital Flavor Enhancement: Utilization of digital scent and flavor technologies to enhance the sensory experience of virtual dining and food consumption.

ZERO Hunger

4

- 2. Synthetic Taste Modifiers: Development of taste-modifying compounds that mimic the taste of sugar, salt, and fat without the associated health risks, enabling healthier food options without sacrificing flavor.
- 3. Neurogastronomy: Exploration of the relationship between the brain and taste perception, leading to innovations in food design and presentation to enhance taste perception and enjoyment.
- 4. Personalized Taste Profiling: Analysis of individual taste preferences based on genetic markers, microbiome composition, and sensory perception, allowing for customized flavor profiles tailored to individual preferences.
- **5**. Multi-Sensory Dining Experiences: Integration of sound, light, and texture elements into dining experiences to complement and enhance the taste sensation, creating immersive culinary journeys.



## MM6: L10 WS TO-BE SCENARIO MAP



A To-be Scenario Map can help you imagine a future situation for you and others. They are useful because they make you think about the different

phases, or steps, that someone might take to do or experience something. They also help you to think about all the things someone might do, think, or feel along the way.

#### Instructions:

Taking your completed worksheet from activity 1, you will create a to-be scenario based on the preferred possibility you wrote down on your cone of possibilities. Remember, this is the future that you want to exist.

Using your To-Be Scenario Map template provided by your teacher, think about how this preferred possibility could be turned into a step-by-step scenario.

For example, if your preferred possibility is about a new type of restaurant menu, what are the key steps that someone must go through to successfully order from that menu?

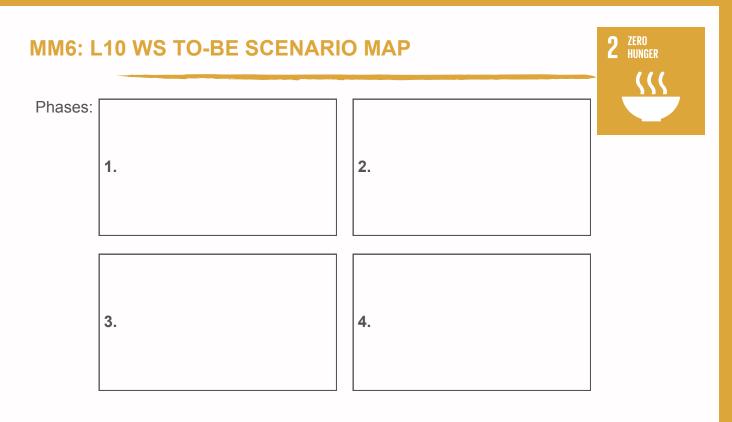
- Do they need to go online to order?
- Do they need to ask a waiter for a menu?
- Can they order using technology or a device?
- How do they make their final menu choice?

Once you have an idea of the key steps, write them into the boxes along the top of the map. You only need to identify 4 phases maximum.

Next, under each phase, brainstorm what someone might be doing, thinking, and feeling, as they complete each phase.

Write down as much as you can!

Remember, you are creating a future scenario that doesn't yet exist so you can use your imagination!



#### Doing:

### Thinking:

Feeling:



MM 6: Food Futures Today

## Implementation

Lesson 11: How Might We Eat?

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



## SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: How Might We Eat?

This lesson is about envisioning the future in relation to specific food challenges and concepts. Learners will use a STEAM approach to imagine a new meal and use speculative design methods to envision life in the future as it relates to food.

### Vocabulary: Art, Design, Food Science, Speculate, STEAM, Technology

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

- use a STEAM approach to imagine a new food dish
- develop planning, organisation, and visualisation skills
- challenge themselves to think laterally
- practice creative thinking
- use speculative design methods
- imagine new food solutions for the future

- Worksheet: Imagine Your New Favourite Meal
- Worksheet: Headlines of the Future
- Paper
- Markers/Pens/Pencils
- Internet access



#### **ACTIVITY INSTRUCTIONS**

Activity 1: Imagine Your New Favourite Meal (40 mins)

- 1. Distribute worksheet: 'Imagine Your New Favourite Meal' (one per learner)
- 2. Ask the learners to complete the worksheet independently.
- 3. When everyone has completed their worksheet, seek out volunteers from the group who are willing to share their ideas with the rest of the class. Ask them to present their worksheet and explain their approach. You might consider asking them the following:
  - What inspired your meal?
  - Is this something you've had before or is it brand new?
  - Do you think you could make this yourself?
  - What new skills might you need to cook it?
  - How would you serve it?
  - What would you do differently next time?

NOTE: Learners may require internet access to successfully complete this activity. Please see media box for useful guides and inspiration.

#### Activity 2: Headlines of the Future (15 mins)

- 1. Learners should complete this activity independently.
- 2. Distribute the worksheet: 'Headlines of the Future' (one per learner) along with the template: 'newspaper' (one per learner) and ask them to follow the instructions. Note: Learners will need to refer to their key idea from the mind map activity.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, skip activity 2.

Extension: For a longer lesson, write a news article to accompany the headline.

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

- The Food Pyramid: <u>https://www.safefood.net/healthy-eating/guidelines/food-pyramid</u>
- Publication: Scientific Recommendations for Healthy Eating Guidelines in Ireland: <u>https://www.fsai.ie/publications/scientific-recommendations-for-healthy-eating-guid</u>
- Article: Pyramid or plate, carbs or veggies: What really is the ideal diet?
  <u>https://www.irishtimes.com/life-and-style/food-and-drink/pyramid-or-plate-carbs-or-veggies-what-really-is-the-ideal-diet-1.3774719</u>
- Guide: Types of Cooking Methods: <u>https://www.webstaurantstore.com/article/454/types-of-cooking-methods.html</u>
- Guide: A Complete Guide To Different Types Of Cooking Methods: <u>https://www.culinarydepotinc.com/blog/different-types-of-cooking-methods-da29db/</u>
- Visual Inspiration: The Great British Bake Off Illustrations by Tom Hovey: <u>https://www.tomhovey.co.uk/the-great-british-bake-off</u>
- Video: Moley Cooking Highlights (1:31 mins): <u>https://youtu.be/BOIAbVodM\_c?</u> <u>si=Ryikv8huZbhHURYh</u>
- Video: The Futuristic Farms That Will Feed the World | Freethink | Future of Food (6:19 mins): <u>https://youtu.be/KfB2sx9uCkl?si=7btR3V-S6-pRALrw</u>
- Video: The Restaurant of the Future (0.56 mins): <u>https://youtu.be/TRHqxQK3CX8?</u> <u>si=LCEbXHBNrdO1s3NU</u>
- Video: In the Future, You'll Be Able To Taste When Your Medicine Is Working (2:05 mins): <u>https://youtu.be/TziNIb3-Dwc?si=ZdN7vG76smgwDZPs</u>

## LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Ask the learners to share their meal and headlines with a family member, peer, coach, teacher, or guardian. When sharing their meal, they should ask for feedback from the viewer. Does the viewer find this interesting? Can they see themselves eating this? What questions do they have about the ideas?

What does your ideal plate of food look like? What ingredients would you include? How big are the portion sizes? How would things be cooked, if at all?



For this activity, you will imagine a new meal inspired by your previous to-be scenario map and STEAM. Although you will be imagining your new meal through the lens of STEAM, you are not expected to understand in depth all elements of STEAM.

You will have the opportunity to:

- · Rely on food science to determine the ingredients
- · Explore ways of preparing and cooking with technology
- · Embrace an engineering mindset to plan the dish
- · Visual what your dish might look like through art
- Evaluate the ideal portion sizes using simple math

Use the worksheet questions and linked resources below to guide your meal design.

To get started, think about the meal you'd like to create based on the to-be scenario that you proposed in the previous lesson. Consider the following:

- Will the meal be served for breakfast, lunch or dinner?
- · Would you want to eat it every day or for special occasions?
- Where would it be served? At home, at school, or in a restaurant, for example?

First, let's make a list of your ideal ingredients:

1	
2	
3	
4	
5	
6	
7	
8	



Now, make a list of your ideal future food ingredients:

For example, will you have hydroponic vegetables, lab-grown meat,

3D printed cookies, or insect protein in your meal? You must choose at least 2 future food ingredients.

1	
2	
3	
4	
5	

You will need to combine some (or all) of the ingredients listed about to make a meal but before you do, you must ensure that you have the following:

- At least one portion of protein such as beans, chicken, cultivated fish, insects, mushrooms
- · At least one portion of fruit or vegetables
- At least one portion of carbohydrates such as bread, millet, pasta, rice, taro

Explain your new meal below.

What is it called:

List your fruit or vegetables and explain how they are grown, prepared or cooked:

For example, will they be grown in a hydroponic farm without soil? Will they be grown in your kitchen? Will they be sliced, diced, roasted, steamed, or left raw?

#### **INSPIRATION:**

• The What and Why of Hydroponic Farming: <u>https://www.verticalroots.com/the-what-and-why-of-hydroponic-farming/</u>

2 ZERO HUNGER

- What is Vertical Farming: <u>https://www.edengreen.com/blog-collection/what-is-vertical-</u> <u>farming</u>
- Click and Grow The Ultimate Indoor Garden: <u>https://eu.clickandgrow.com/</u>

List your protein(s) and explain how they are prepared or cooked:

For example, will they be cultivated in a science laboratory? Will they be made from plants or insects? Will they be minced, skewered, stewed, grilled, baked?

**INSPIRATION:** 

- Lab-Grown Chicken in Here, What To Know: <u>https://www.healthline.com/health-news/lab-grown-chicken-is-here-what-to-know</u>
- Film Club: The Joy of Cooking (Insects):
  <u>https://www.nytimes.com/2022/02/17/learning/film-club-the-joy-of-cooking-insects.html</u>
- Insects as Food: <u>https://www.teagasc.ie/news--events/daily/other/insects-as-food.php</u>
- How Beans Can Help Fix The Future of Food: <u>https://foodfoundation.org.uk/news/how-beans-can-help-fix-future-food</u>

2 ZERO HUNGER

List your carbohydrates(s) and explain how they are prepared or cooked, if at all: For example, will they be 3D printed? Will they be peeled, whole, roasted, fried, boiled? Will they come from an instant packet or can?



- What is 3D-Printed Food? <u>https://builtin.com/3d-printing/3d-printed-food</u>
- What Do Astronauts Eat in Space? <u>https://www.rmg.co.uk/stories/topics/what-do-astronauts-eat-space</u>

Will you require other ingredients? List them below. These might include spices, seasonings, sauces.

Next, what quantities will you need?

For example: 150 grams of rice, 200 grams of chicken, 1 teaspoon curry powder.

You may need to do a little research to complete this step:

- · Use the food pyramid to understand optimum quantities
- Consider using the internet to search for similar recipes
- Reference cookbooks or recipe cards at home



The Food Pyramid:

https://www.safefood.net/healthy-eating/guidelines/food-pyramid

Remember, your quantities don't need to be perfect! An estimate based on your research will be more than adequate!

Ingredient:	Quantity:
Ingredient:	Quantity:

Finally, visualise your meal by drawing it below! You could also use Canva or make a 3D model to demonstrate your idea.

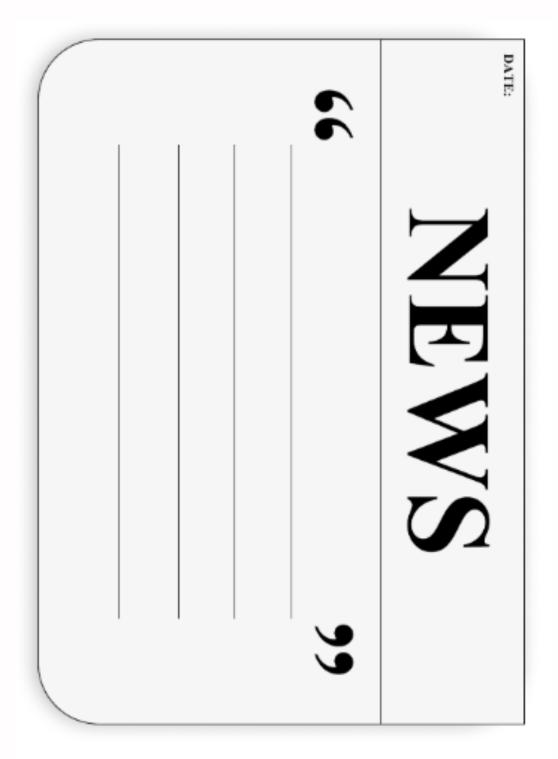
Think about the portion sizes, colours, and textures.



Close your eyes and imagine it's the year 2050. Your newly imagined meal is now available to the world and is proving successful! The Irish Times has even

decided to feature your meal on the front page of the newspaper. But what will the headline read?

Using the newspaper template provided by your teacher, write in the headline you wish to see. Consider the following: What do you want people to know about your future food idea? Why is it so great? What problem did it solve?







MM 6: Food Futures Today

# Implementation

### Lesson 12: Eat This!

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



# SDG2: Future of Food MM6: Food Futures Today

#### Lesson Title and Summary: Eat This!

In this lesson, learners will test their future food ideas with their peers, family, and friends. They will have the opportunity to gain feedback with the view to improving their concepts.

# Vocabulary: Design Thinking, Ideation, Vignette

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

- visually express concepts using simple drawing/ideation techniques
- · learn how to articulate high level, abstract ideas
- develop skills in communication
- develop empathy through feedback
- practice basic user research methods

#### Materials

- Completed worksheets from lesson 11 (if available)
- Worksheet: Idea Vignettes
- Worksheet: Feedback Questionnaire
- Paper
- Markers/Pens/Pencils

# MM6: Food Futures Today L12: Eat This!





# **ACTIVITY INSTRUCTIONS**

#### Activity 1: Idea Vignettes (30 mins)

- 1. Learners should complete this activity independently.
- 2. Taking their worksheets from project lesson 11, if completed, learners will now sketch out their initial ideas and details, turning them into vignettes that can be shared with others for feedback.
- 3. If lesson 10 or 11 were not completed, learners must choose one of the following as inspiration for their vignettes:
  - a. How might we cook in the future?
  - b. How might we grow food in the future?
  - c. How might we order from restaurants in the future?
  - d. How might we taste food in the future?
- 4. Distribute the worksheet: 'Idea Vignettes' (one per learner).
- 5.Ask the learners to create at least two vignettes to represent their ideas in response to their chosen question. Each vignette requires a simple sketch (drawn by hand or digitally using Canva) to visually express their thinking with a written caption below to explain the idea.
- 6. Remind learners to write their question at the top of their vignette worksheet.

#### Activity 2: Gathering Feedback (20 mins)

- 1. Distribute the worksheet: 'Feedback Questionnaire' (one per learner).
- 2. Ask the learners to form pairs.
- 3. Each learner should take it in turn to show their idea vignette(s) to their classmate with the goal of obtaining feedback on their own idea.
- 4. If lesson 10 was completed, learners can also present their to-be scenario map for additional context.
- 5. Learners should complete the feedback questionnaire while receiving feedback on their idea(s). They have 10 minutes each to complete the activity.

## **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, run activity 2 as a flipped classroom. Learners should ask family or friends for feedback on their ideas.

Extension: For a longer lesson, allow more time for activity 1. Encourage learners to sketch and/or write as many ideas as they can think of. Provide additional copies of the worksheet: Idea Vignettes.

Facilitate a class discussion at the end of activity 2, allowing learners to share their ideas and feedback to the class.

As a class, watch the ideation videos linked in the media box.

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

Video: IDEO Brainstorming Video from IDEO U [1:57 mins]: <u>https://youtu.be/VvdJzeO9yN8?</u> <u>si=CXxQ6WU9b1gx\_o4H</u>

Video: Design Thinking: Ideate [4:03 mins]: https://youtu.be/zbLxs6te5to?si=m\_\_KLMUoxfUuOkGi

Video: Rapid Ideation Process [1:27 mins]: https://youtu.be/FVx9RLCnJH8?si=PZJKCVsKXOYs7Be7

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

Encourage the learners to share their ideas with local food experts in the community. They might consider sharing with local farmers, growers, chefs, developers, designers, or business owners—anyone who might be interested in their future food ideas.

MM6 :L12 WS IDEA VIGNETTES		2 ZERO HUNGER
Question:		<u> </u>
Draw your idea here	Explain your idea by writing a short sentence	
Draw your idea here	Explain your idea by writing a short sentence	

# MM6: L12WS FEEDBACK QUESTIONNAIRE

Now that you have answered your future food question with new ideas, it's time to see what others think. Use this worksheet to gain feedback by asking the questions below.

Before you start, consider the following:

1. If you are interviewing someone outside of class, be sure to ask them for permission. Tell them about your module–and the goal of this activity–so they understand the purpose of the questionnaire.

HUNGER

- 2. Read your questionnaire in advance so you are comfortable with the questions and options.
- 3. Before asking for feedback, you need to share your ideas with your feedback participant. a. First, tell them about the question you chose to explore and answer.
  - b. Tell them about any initial thoughts, questions, or ideas you had when you decided to focus on this question.
  - c. Next, show them your idea vignettes. (If you completed lesson 10 of this module you can also share your worksheets from both activities).
  - d. Pick one idea and ask them to give you feedback on that idea. Explain that you will ask specific questions, using this worksheet.
- 4. Listen carefully and write down as much as you can.
- 5. Always thank your participant for their time at the end.

Name of feedback participant:

What is your initial reaction to my idea?

What one word would you use to describe my idea?

## **MM6: L12 WS FEEDBACK QUESTIONNAIRE**

2 ZERO HUNGER

Have you ever heard of something like it before? If yes, can you tell me about it?

What do you like best about my idea? Why?

What do you not like about my idea? Why?

Do you think my idea is suitable for you? If no, who do you think it's best suited to?

# **MM6: L12 WS FEEDBACK QUESTIONNAIRE**

How might I improve my idea?

Finally, what do you think is the future of food? Could you share any ideas or thoughts?

\_\_\_\_\_





MM 6: Food Futures Today

Implementation

Lesson 13: From Food Idea to Food Business

Subjects: Agricultural Science, Art, Business Studies, Design, English, Engineering, Geography, Health, Home Economics, Science, Technology



# SDG2: Future of Food MM6: Food Futures Today

# Lesson Title and Summary: From Food Idea to Food Business

Learners will turn their future food ideas explored in lesson 11 into a business plan. This business plan activity will provide learners with skills in entrepreneurship, and will help them to structure their big ideas into potential real-world use cases.

# Vocabulary: Agriculture, Business Plan, Case Study, Company, Digital, Retail, Speculative, Startup, Technology, Vignette

# In this lesson, the learner will:

- embrace an entrepreneurial mindset
- brainstorm and organise ideas
- turn ideas into business opportunities
- · learn how to create a basic business plan
- practice written communications

# Materials

- Completed worksheets from lesson 11 and 12 (required)
- Worksheet: Business Brainstorm
- Worksheet: Our Business Plan
- Internet access
- Markers/pens/pencils
- Paper



#### **ACTIVITY INSTRUCTIONS**

Activity 1: Business Brainstorm (30 mins)

- 1. Learners can work in pairs or groups (max 4 people) for this lesson.
- 2. Distribute the worksheet: Business Brainstorm (one per group).
- 3. Learners will use this worksheet to explore the ideas generated in the previous lessons (11 and 12) with the aim of turning them into a new business. Please skip this lesson if lesson 11 or 12 was not completed.
- 4. The group will need to work together to pick one idea for the purpose of this lesson. They may want to draw straws or pick a name out of a hat!
- 5. As the learners begin their business brainstorm, support them with the following prompts and suggestions where relevant:
  - Can you think of a business that inspires you?
  - If you were to turn the idea into something real tomorrow, what would you need to make that happen?
  - o Would you need a factory to make your idea?
  - Would you need a premises to open an office?
  - Would you need to hire a lot of people to work in your business?
  - What would like your business to offer? For example: tasty food, delivery services, cool edible products, exciting dining experiences?

#### Activity 2: Our Business Plan (20 mins)

- 1. Once their 'Business Brainstorm' is completed direct learners to the section of the worksheet: Our Business Plan
- 2. Ask the learners to complete their business plan by filling in the template
- 3. In a final lesson learners can present their business plan to the group and gain feeback from their peers.

#### **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.

Use Post-its or a mentimeter survey - <u>www.mentimeter.com</u> - to gather reflections



#### **EXTENSION / REDUCTION ACTIVITIES:**

Reduction: For a shorter lesson, undertake activity 2 in a follow on lesson.

Extension: For a longer lesson, allow learners to research other food businesses for inspiration. Ask them to explore the media box for additional tips, guides, and case studies.

Option B: Once they have completed their Business Brainstorm and Business Plan, learners can begin to prepare a presentation to share their food business ideas and gain feedback from their peers.

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

See also lessons 1, 2, and 8 included in this module for food business case studies and startup inspiration.

11 Food Innovations <u>https://interestingengineering.com/science/11-innovations-that-could-build-the-food-of-the-future</u>

The Future of Food in 2050 https://www.hdi.global/infocenter/insights/2021/future-of-food/

Kerry Group plant-based solutions <u>https://www.kerry.com/products/food-solutions/plant-based-food-and-beverage-solutions</u>

Business Plan Generator For Young Entrepreneurs <u>https://www.risinginnovator.com/free-business-plan-generator/</u>

Local Enterprise — Business Plan Guide: <u>https://www.localenterprise.ie/Fingal/Start-or-Grow-your-Business/Start-a-Business/Business-Plan-Guide/</u>

Local Enterprise — Writing a Business Plan: <u>https://www.localenterprise.ie/DublinCity/Start-or-</u> <u>Grow-your-Business/Knowledge-Centre/General-Business-Advice/Writing-a-Business-Plan/</u>

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

Can the learners share their business ideas and completed plan template with their business studies teacher? Ask them to think of a business owner or manager in the community who might be open to giving feedback on their plan.

Learners could complete this lesson independently so they each have the opportunity to develop a business idea and plan for their own future food concepts.

# MM6: L13 WS BUSINESS BRAINSTORM

Every business, no matter what type, has an idea behind it. This lesson is all about turning your future food ideas into business opportunities for the future.

You will use this worksheet to explore the ideas generated in the previous lesson (11) with the aim of turning them into a new business. For example, if your idea was about a new food product, you might create a business to sell and market that product to a particular audience. If your idea was about using technology to grow food, you might create a business that would be responsible for developing that technology.

#### Instructions:

- 1. Choose one of your ideas from lesson 11.
- 2. Complete this worksheet by filling in each section below.
- 3. You can write keywords, sentences or draw mind maps.
- 4. As you move along the worksheet, think about your idea from the perspective of a business owner:
  - a. What do you need to do for your idea to help it become a reality?
  - b. Who would benefit from your idea?
  - c. Could you make money from your idea in real life?
  - d. Do you need money to produce your idea?

What is your main idea?

Write it, draw it, or paste your idea vignette into the box below.



# MM6: L13 WS BUSINESS BRAINSTORM



What business category might be suitable for your idea? For example: agriculture, automotive, digital, education, farming, fashion, health, hospitality, retail, science, technology, tourism, transport.

List as many as you like.

What might your business do?

For example: Will you be selling your idea as a product? Will you be turning your idea into a service that can help people? Will you be sharing information? Will you be running events?

# MM6: L13 WS BUSINESS BRAINSTORM

Who might you need on the team? Who are the right people to involve? For example: accountant, designer, doctor, farmer, fisher, salesperson, teacher.



List or draw as many as you like.

How might you market your business? What channels might you use? For example: TikTok, a website, posters, TV ads.

List as many as you like but think about who you want to target. What channels might they use most?

# **MM6: L13 WS OUR BUSINESS PLAN**

A business plan is a document that describes the type of business you wish to create. It is a useful document for explaining the goals of the business,

what the business will do, who will be involved, and how the business will grow over time.

Now that you have brainstormed the ways in which your idea could be turned into elements of a business, use this template to organise and describe those elements in more detail. Remember, you are in "business planning" mode so it's okay to make big guesses based on your imagination!

Name of your business:	
Description of your business. What will your business do?	
What problem will your business solve?	
How will your business make money?	
Who will be your customers? Who will buy from your business?	
Where will your business be located?	
How will people find out about your business?	

