**LESSON PLAN**

**6. Environmental impacts of meat/animal proteins**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lesson** **title:** | | The aim of the lesson is to introduce the environmental impacts of food and the concept of Greenhouse Gas (GHG) emissions and particularly how that relates to animal proteins (meat and dairy) | **Learning objectives:** | • Understand the need to rebalance the protein in our diets  • Introduce strategies and techniques to reduce red meat in recipes and identify optimal portion size when serving red meat  • Evaluate the sensory characteristics of the modified recipes  \*See teaching tips for ways to adapt the lesson to include white meat substitutes too. | | | | | |
| **Week No:** |  | | **Date:** | | **Time:** | | **.00** | **Duration** | **:minutes** |
| **Subject Tutor:** |  | | | | **Numbers in class:** |  | | **Room :** |  |
| **Topic of lesson**  (link to SOW): |  | | | | **Venue:** |  | | **Themes embedded** | **Health & Safety**  **Equality & diversity**  **Functional skills**  **Positive Challenge & stretch**  **Sustainability** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Content – link to qualification specifications** | **Teaching, Learning and Assessment Activities** | **Embedded**  **Elements** | **Resources** |
| As per SOW | **Start (including recap, objectives, key questions, links to previous lesson, lively starter activity)**  **Starter activity**- **Icebreaker:** How do like your steak (rare, medium or well done)? How many grams/ounces do you use for a portion?  ***(about 15-20 minutes)***  **Main (including teacher exposition, active learning, mini plenaries and checks on learning)**  **Activity 1:**   * Tutor explain the learning outcomes * Explain the sensory evaluation activity to determine the impact of reducing red meat recipes and eating experience. * Divide class in to 3 groups (A, B & C) * Group A produce original recipe * Group-B Produce recipe with 75% beef and substitutes * Group-C produce recipe with 50% beef and substitutes * Tutor will provide list of substitutes- see handout * Closing checks- kitchen   ***(about 2 hours max)***  **Mini plenary:**  Write 3 sentences on what you have learnt so far and share with your neighbour  **Activity 2: Sensory evaluation**   * Students Complete the sensory evaluation hand out and compare their results (Tutor and students led)   **End (including summary of session/plenary, learning checks, bridge to next session)**   * Tutor to check results and recap key points * Student to complete objective sheets/ learning log etc | **FSM**  **E&D**  **S**  **FSE**  **E&D**  **FSE**  **H& S** | Theory presentation – Environmental impacts of meat / animal proteins (PowerPoint)  Spaghetti Bolognaise recipe (with plant-based substitutions) (PDF)  Sensory evaluation handouts (in Extra Resources below)  East Lancet Commission Food brief for Food Service Professionals (PDF)  Link to Chefs’ Manifesto Action 6. [**A FOCUS ON PLANT-BASED INGREDIENTS**](http://www.sdg2advocacyhub.org/actions/ActionPlanArea6) |
| **SMART Learning Objectives** |
| **All learners will be able to:**  **Most learners will be able to:**  **Stretch & challenge learners will be able to:** |

|  |  |
| --- | --- |
| **Evaluation of lesson:** | **Make notes on how it could be improved:** |

**Teaching Tips**

* *“Exposing the students to meat replacements was a real eye-opener. Even I haven’t used them that much. It does take some skill and knowledge to get good flavour out of some of them. So we talked about texture, taste and flavour profiles with the students, and had some really great discussions*.” Tarik, UWL Lecture
* It’s important to also talk about the environmental impact of all animal proteins during this lesson, not just red meat. White meat is largely farmed through intensive systems that rely on feed with a massive impact on land, water and biodiversity. Introduce the idea of less and better meat of all types, not just a reduction in red meat.
* The above lesson can be adapted to also incorporate plant-based alternatives to white meat too – and explore both processed alternatives (of which there are many for chicken) and more traditional vegetables and pulses.

**EXTRA RESOURCES**

**Activity 1.**

Substitutes to choose from:

* Quorn
* Mushrooms\*
* Range of pulses (Puy lentils, kidney beans, chickpeas etc…)

\*Note: it is recommended to finely chop and cook the water out of the mushrooms before adding to the Bolognese.

**Activity 2.** **Descriptive words table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Appearance** | **Flavour** | **Smell** | **Texture** | Sound |
| Appetising Attractive  Brittle  Burnt  Cellular  Clear  Cloudy  Cold  Colourful  Colourless  Creamy Crumbly Dark  Dry  Foamy  Fresh  Grained  Greasy  Healthy  Moist  Mottled  Opaque  Pale  Powdery  Shiny  Slimy | AcidicBitter Bland  Burnt  Buttery  Creamy  Fatty  Herby  Hot  Musty  Piquant  Salty  Sharp  Smokey  Sour  Spicy  Stale  Sweet  Tangy  Tart  Tasty  Tasteless  Undercooked  Watery | Aromatic Astringent  Burnt  Coffee  Fermented  Floral  Fresh  Fruity  Musty  Pungent  Rancid  Roasted  Smokey  Sour  Spicy  Stale | Adhesive Airy Brittle  Bubbly  Chewy  Coarse  Cohesive  Cold  Crisp  Crumbly  Crunchy  Crystalline  Dry  Effervescent  Elastic  Fibrous  Fine  Firm  Fizzy  Flaky  Flat  Foamy  Grainy  Greasy  Gritty  Hard | Bubbling  Crackly  Crunchy  Grating  Fizzy  Percolating  Sizzling  Snapping |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Appearance** | **Flavour** | **Smell** | **Texture** | Sound |
| Smooth  Soggy  Sticky  Thick  Translucent  Watery |  |  | Juicy  Lumpy  Moist  Mushy  Powdery Rubbery Slimy  Smooth  Soft  Spongy  Sticky  Tender  Tough  Watery |  |