Islip Manor High School
Scheme of Learning Overview

Islip Manor
HIGH SCHOOL

This scheme of learning has been designed to ensure that you make progress, develop, and master key knowledge, skills, and ideas through academically rich content that reflects, values, and celebrates the diverse experiences, identities, and contributions of our school community.

Year group: 11	**Term**: Autumn 2	**Unit duration: 3 weeks**	**Number of lessons: 6-8 Lessons**	**Unit title: Ecology Part 2**

Unit assessment: End of topic test

Fertile question: Could we feed the whole world if everyone became a vegetarian?

Key skills/ concepts/ prior knowledge that students should have when starting this unit:	**Start RAG**	**End RAG**
1. Producers (plants) start food chains by making glucose via photosynthesis. 2. Biomass is the total mass of living material in an organism. 3. Decomposers return nutrients to the soil by breaking down dead material. 4. Human activities like global warming impact global biodiversity. 5. Sustainable strategies are required to protect future resources.		

Key skills/concepts/knowledge that students should cover	**Start RAG**	**End RAG**
1. **Trophic Levels:** Identify producers and primary, secondary, and tertiary consumers. 2. **Apex Predators:** Define these as carnivores at the top of the food chain with no predators. 3. **Pyramids of Biomass:** Construct and interpret pyramids representing dry mass at each level. 4. **Biomass Loss:** Explain loss through waste, urea, and respiration for heat/movement. 5. **Calculating Efficiency:** Calculate the percentage of biomass transfer between levels. 6. **Food Security:** Identify threats such as rising birth rates, new pests, and climate change. 7. **Farming Efficiency:** Explain how limiting animal movement and controlling temperature increases yield. 8. **Sustainable Fisheries:** Describe how net sizes and quotas maintain fish stocks. 9. **Biotechnology:** Describe producing mycoprotein from the fungus *Fusarium* in fermenters. 10. **GM Food:** Evaluate how genetic modification improves nutritional value (e.g., Golden Rice).		

Stretch. Key skills/concepts/knowledge that students should cover

Analyse the trade-off between intensive farming efficiency and animal welfare ethics.

Literacy. Key vocabulary/subject terminology that students should cover

Trophic Level, Apex Predator, Biomass, Food Security, Sustainable, Biotechnology, Mycoprotein, *Fusarium*, Fermenter, GM Crops.

Suggested materials teachers could/should use:

AQA Combined Science textbook Oxford University Press Kerboodle

Key home learning tasks students should complete:

Kerboodle assessment checkpoints