Lesson 1 – The impacts of food production

In this lesson, students will learn how and where food is grown and how this affects biodiversity and the environment in different parts of the world.

Meets Design and Technologies ACTDEK021
Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy

HASS ACHASSK120 Types of resources (natural, human, capital) and the ways societies use them to satisfy the needs and wants of present and future generations

HASS ACHASSK121 Influences on consumer choices and methods that can be used to help make informed personal consumer and financial choices

Science ACSHE083 Scientific knowledge is used to solve problems and inform personal and community decisions

Sustainability OI.1-OI.9 All life forms are interconnected and actions for sustainability require evaluation of past practices and balanced judgements based on future economic, social and environmental impacts

Teacher notes

Our consumption of food is one of the greatest ways that we, as humans, have an impact upon the earth. Up to 40% of each person's carbon footprint is made from growing, producing, transporting, manufacturing, packaging and retailing of food by the global, industrial food economy, which is usually powered by fossil fuels. Most of the food we eat every day has travelled some 1,500-2,000 kilometres to reach our plates, which is a significant amount of fuel just for transport. The growing of food in the industrial marketplace also requires large amounts of artificial fertilisers, pesticides, insecticides and other inputs like fossil fuels to generate the energy required for all stages of production and transport. In general, the more processed and packaged a food is, the greater the fossil fuel input.

You will need

- Access to computers and/or the use of descriptive atlases

- If you had a world map or globe in the classroom, this might be used to pinpoint where food is grown around the world, using map pins or sticky labels.

Method

On the board/smartboard, draw the chart on the page below.

Separate the class into 9 groups, allocating one food type to each group. Using computers and/or atlases, ask each group to investigate which country or region grows the greatest amount of the food their group has been tasked with. Ask each group to write their food and matching country/region on the board (*an example has been provided in the column next to rice, see China etc*).

In their groups or as a class, discuss how and where each food is grown and how this may affect the biodiversity of an area (*e.g. if Asia grows the most palm oil, these are from plantation palm trees, the plantations are grown in what was rainforest, which affects the habitat of rainforest animals including birds, primates, and insects*).

Discuss the need for animals to have fresh water to survive, and for plants to have fresh water to grow.

If water is used for agriculture, discuss how this might take some water from rivers and lakes, affecting the natural balance, or the use of water for other people's crops. Discuss how energy is used to produce food, such as in deep sea fishing or planting and harvesting crops, and in transporting food to processors, then to the supermarket, sometimes across the globe. Energy is used to package food, which does have an important role in preserving food to stop it from spoiling. However, we are left with a lot of packaging to deal with in our environment, and a lot of that is plastic.

Discuss how the knowledge of how food is produced, packaged and transported might influence our consumer choices.

Propose alternative ways that food can be produced and moved (or not) around the world, maybe with less dependence on packaging or simpler packaging which is more recyclable.

Added activity: Watch Birke Baehr, an 11 year old boy on TEDx, who provides a critique of our food system https://www.youtube.com/watch?v=F7ld9caYw-Y

Type of food	Country or region where most of it is grown	Approx how many kilometres is this country from Tasmania?	% of world prod-uction	Resources required e.g. water, soil, fuel	Environmental impacts
1. Rice	e.g. China	9,500km	30%	Water, soil, fuel, human labour	Changing land form/use, loss of habitat for original plants and animals
2. Wheat					
3. Beef					
4. Coconut					
5. Sugar					
6. Maize/corn					
7. Soy beans					
8. Palm oil					
9. Oats					
10. Potatoes					