TEACHER OUTLINE:

OVERFISHING

[Version 1.3 – 2024]

OVERVIEW

Overfishing is when fish are fished too much. When overfished fish stocks cannot reproduce to a healthy number, and they begin to decline.

Overfishing does not leave enough fish in the sea and can affect whole marine communities. When one type of fish is overfished, it affects the whole food web.

Overfishing also means catches decline and fishers no longer have their livelihood.

Activities here investigate overfishing and how it impacts people and environments.

See accompanying slide set Overfishing.

FOCUS QUESTIONS

- *What is 'overfishing'? What impact does overfishing have?*
- *What new words and concepts have we learnt?*

LEARNING OBJECTIVES

- Explain 'overfishing' and how it impacts people and / or environments
- Use scientific and fisheries related vocabulary

LOCATION

Indoors

DURATION

45 mins +

LEVEL

Level 3 - 5

CURRICULUM

Science

Social Science

Pūtaiao

Hauora

Tikanga-ā-iwi

NEXT STEPS

- Blue fish tick label
- Sustainable fishing
- Science & the sustainable catch
- Fishery management

MATERIALS

- Slide set Overfishing
- This Teacher Outline
- Something to write with
- Warm up Overfishing cards (Page 6)
- Prior Knowledge Overfishing Chart (Page 11)
- Access to internet (for film clip)

PROCEDURE

1. DISCUSS the impacts of overfishing [slides 12 and 13] and what the ocean might look like if fishing occurs sustainably vs overfished [see slide 13].
2. If some prior knowledge exists, then you could complete the prior knowledge BRAINSTORM here (see point 4 below)
3. Complete a warm-up picture and idea cards using the Overfishing Cards (see page 11) to COMPARE what the ocean might look like if fishing occurs sustainably vs overfished. The aim is to introduce ideas of sustainable fishing & overfishing.
    a. Which concept is best represented in the two warm up pictures - sustainable fisheries or unsustainable fisheries? In pairs, decide and justify choices.
    b. In pairs, put warm up idea cards in two piles. Pile one: those that best match 'sustainable fishing'. Pile two: those that better match 'unsustainable or overfishing'? Explain reasoning for choices.
    c. Reinforce learning. Discuss each of the following aspects of sustainable fishing (used by the Marine Stewardship Council to determine a fisheries sustainability):
        i. Fishing leaves enough fish in the sea so that fisheries can replenish, and fishing can continue indefinitely.
        ii. Fishers can earn a living and continue to do so long into the future.
        iii. Vulnerable marine environments are looked after.
        iv. Fishing supports rather than inhibits recovery of endangered species.

d. Review and discuss. What did we learn? What do we want to know more about? How might we find it out? Discuss new words.

4. BRAINSTORM what we already know about overfishing and complete the 'overfishing prior knowledge chart' [slide 14] (see page 11)
5. WATCH the short film Overfishing [2:55]. CONSIDER what is overfishing and why it is a problem [slide 15]. Add new knowledge to Overfishing Prior Knowledge Chart.
6. DEFINE key terms and explore the definitions and the idea that overfishing affects population sizes [see slides 16 and 17]. Have learners WRITE their own definitions of key terms (fishery, sustainable fishing, overfishing…). Have learners CREATE a diagram showing how overfishing affects the size of a fish population.

KEY WORDS

Overfishing
Sustainable fishing
Fishery
Marine
Migration

CURRICULUM LINKS

Nature of Science (Level 3-5)

- Investigating in science
- Communicating in science
- Participating and contributing

Living World (Level 3-5)

- Ecology

Social Science (Level 3-5)

- Understand how people make decisions about access to and use of resources (Level 3)
- Understand how formal and informal groups make decisions that impact on communities (Level 4)
- Understand how people's management of resources impacts on environmental and social sustainability (Level 5)

Tikanga-ā-iwi

- *Kotahi tonu te matua o te tangata Māori, ko Ranginui e tū nei, ko Papa-tū-ā-nuku e takoto nei.* Place and Environment
- *E tama, e hine, tangata i ākona ki te whare, tū ana ki te marae, tau ana.* The Changing World
- *E kore e ngaoko te rākau ki te tīkina i te pūtake whakangaoko ai engari, me tiki ki te matamata.* The Economic World

Pūtaiao

- The Natural World: The Biological Environment: Investigate the effect of human actions, and natural processes, on an Aotearoa ecosystem (Level 6+)

Hauora

- Relationships to earth and sky (natural environments) (Level 4+)

OVERFISHING: WARM UP PICTURES!

OVERFISHING: WARM UP IDEAS!

Lots of fish in the sea

Not much fish left in the sea

Fishers can continue to make a living from fishing

Fishers can no longer make a living from fishing

Special places in the sea are destroyed

Special places in the sea are alive and healthy

Some special sea animals [like blue whales] are almost all gone [extinct]

Special sea animals are thriving in good numbers

PRIOR KNOWLEDGE CHART

OVERFISHING

PRIOR KNOWLEDGE CHART

What we know	What we would like to know	What we have learned