



## PROJECT PLASTIC SOUP EDUCATION PROGRAMME

### DRAFT ONLY

#### Week One

##### Plastics

- In 1811, Heneri Braconnot pioneered the basic principle of plastic
- Today plastics are used in our everyday lives for more things then we can imagine
- **Plastic** is the common term for a wide range of synthetic or semisynthetic organic amorhous(shapeless) solid materials suitable for the manufacture of industrial products
- Plastics are typically polymers of high molecular weight and may contain other substances to improve performance and/or reduce costs

##### The compound

- Types of plastics
  - Plastics are basically polymers which are long chain atoms held together by a covalent bond
  - Natural polymers - Shellac and Amber have been used for centuries
    - Biopolymers - Proteins and Nucleic acids play a crucial role in the biological process.
  - Synthetic polymers- nylon, Polyethylene, Teflon and Silicon are the most widely used today

##### Recyclable vs non recyclable plastics

- What can be recycled?
- Currently only 3-5% is recycled but most can be in some way
- Some plastics can be down cycled but loose quality and are not able to be used for the same purpose
- Food packaging is generally waste only
- Food packaging also has the shortest life span as is it is generally removed and binned

##### Biodegradable technology

- Corn based plastics are biodegradable but are currently more expensive to produce and are not as versatile
- Easily degraded and are a definite substitute in the future

#### Cost of plastics

- Most plastics today are versatile and low cost
- Cost can be controlled by changing quality and composition of materials
- True cost of the plastic on the environment is not taken into account

#### Benefits of plastics

- How plastic influences our ever day lives
- Packaging for convenience and to increase the life of a product
- Plastics are able to handle a wide range of different conditions
- Positive impact on humanity
- Globalisation of the worlds food sources partly due to plastics

#### Negatives of plastics

- Contamination of food and food sources
  - Aquatic and human food chains stand to be negatively impacted by plastic contamination of the environment
  - Japans example from Charles Moore in video regarding fertility
  - Pollution of land a sea
  - 60 Billion tons of plastic is being produced yearly of which most is single use
  - 80% of plastic in the marine environment originates from land and 20% from the Sea

#### Contamination of the environment

- Plastic in the oceans and waterways
- Toxicity due to additives in the plastic
- 6:1 Plastic to plankton
- Plastic is becoming part of the ecosystem/food chain
- Are we happy with this scenario when we are shown a few of the facts

### Week Two

#### Beaches

- Types of Beaches in NZ
- Beach formations
- Local beaches examples (west coast / east coast)

#### Estuaries

- Semi-enclosed coastal body of water with one or more river or streams flowing into it and with a free connection to the open ocean.
- Affected by both marine influences, such as tides, waves and the influx of saline water; and rivers full of fresh water and sediment
- The most diverse ecosystems on the coast with high and extremely important rates of species diversity

#### Natural ecology

- Coastal function in ecosystems
- Beach types and coastal zones
  - From sandy beaches to muddy tidal estuaries, the marine environment has an large amounts of life

#### It's force

- Wave energy
- Sand, rocks and mud
- Wind
- Salt, fresh water

#### It's Fun

- Recreational activities
- Open space
- Meeting place for family and community

#### It's beauty

- Forever changing and moving
- Refreshing tidal change brings new life and shape
- The end and the start of the land

#### Animal life

- Migratory birds/fish/mammals

#### Its contribution at all levels

### Week Three

#### Animals, beaches and plastics

- Statistics
- People's experiences

#### The effects currently experienced

- Statistics

- Local / Global

#### Real life situations

- What have you seen
- What is being picked up on NZ beaches
- Albatross in NZ
- Fish in NZ

#### Effects on the natural environment

- Also what has been observed
- Statistics

### Week Four

#### Site Visits

- Local beaches to practically identify issues

#### How do we take charge?

- By showing the kids that their neighbourhood has actual and potential effects on the surrounding environment
- Any positive or negative actions then can be shown to have an effect
- This is essential in empowering kids and their decisions

#### Time to ACT

- Talk about their beach, their street, their school etc To give a sense of what environments they have control over
- Identify problems and solutions which can be demonstrated by the kids in the field/street/neighbourhood

#### Where are the problems where are the solutions?

- Problems are identified globally and locally above but can be identified locally again by the kids
- Solutions need to be practical on a local scale to demonstrate that they are achievable for each individual
- This will bring the kids hopefully to the realisation that they are the solution

### Week Five

Let's build and clean up a beach

- Adopt a local beach/estuary as a class or a school
- Monitor and analyse a beach or estuary, this is done with both still and moving cameras and then uploaded into the Project Plastic Soup website
- From the clean up they are encouraged to collect all the plastic material they can and create a floating boat or some other form of "re purposing" of the materials.

### Week Six

- ⇒ Lets save and adopt an animal, let's make a significant contribution to it not happening again.
- ⇒ Let's visit Kelly Tarltons or Goat Island as an example of what to do and how to create a clean marine environment.

