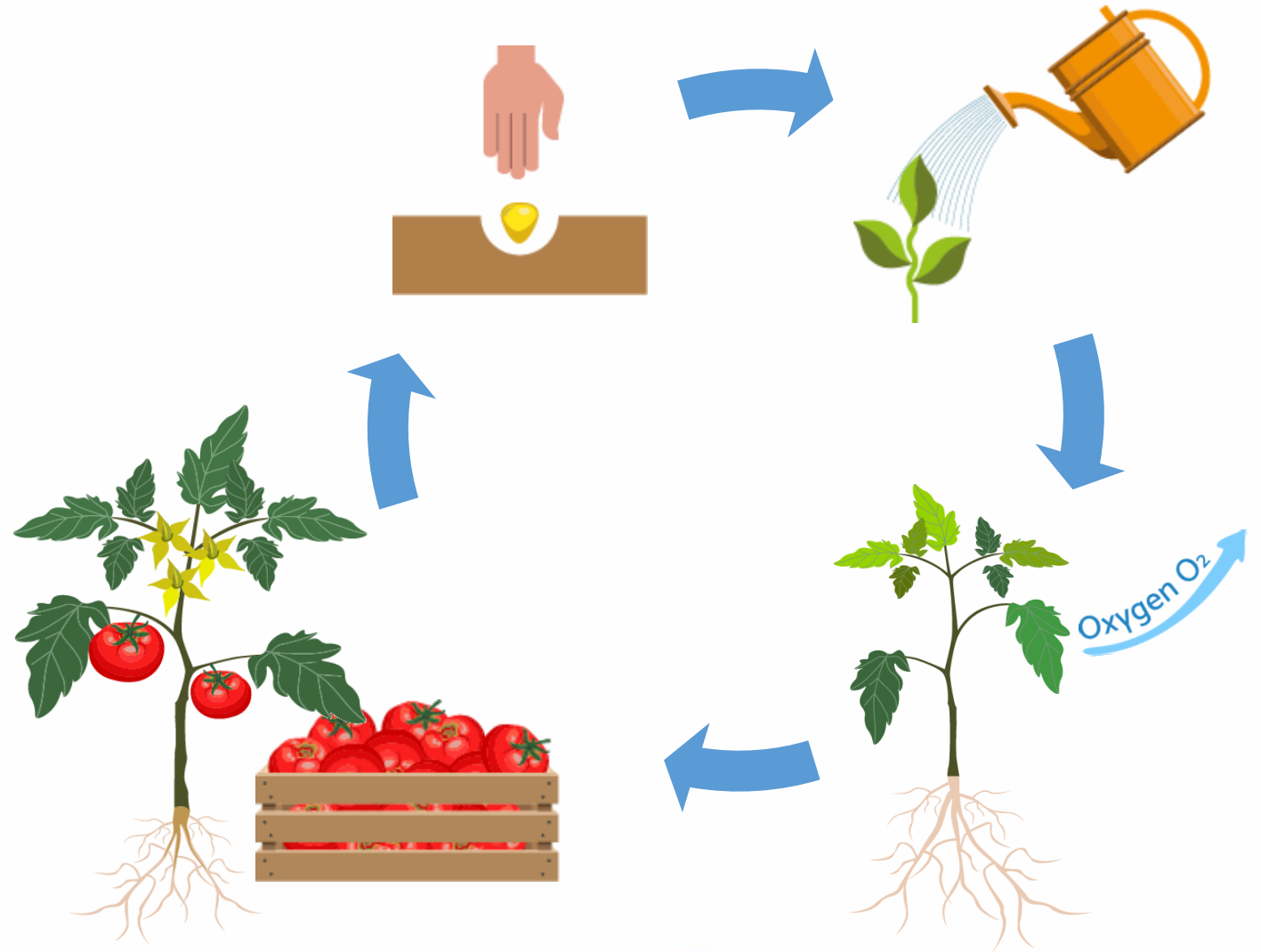


S.E.A. AQUARIUM EDUCATOR RESOURCES

PRIMARY SCHOOL
The Last Straw

Human Beings and the Environment

Human beings and the environment are dependent on each other



Positive and Negative Impacts on the Environment



Human Actions



Transportation



Excessive
electrical usage



Coolants &
Refrigerants



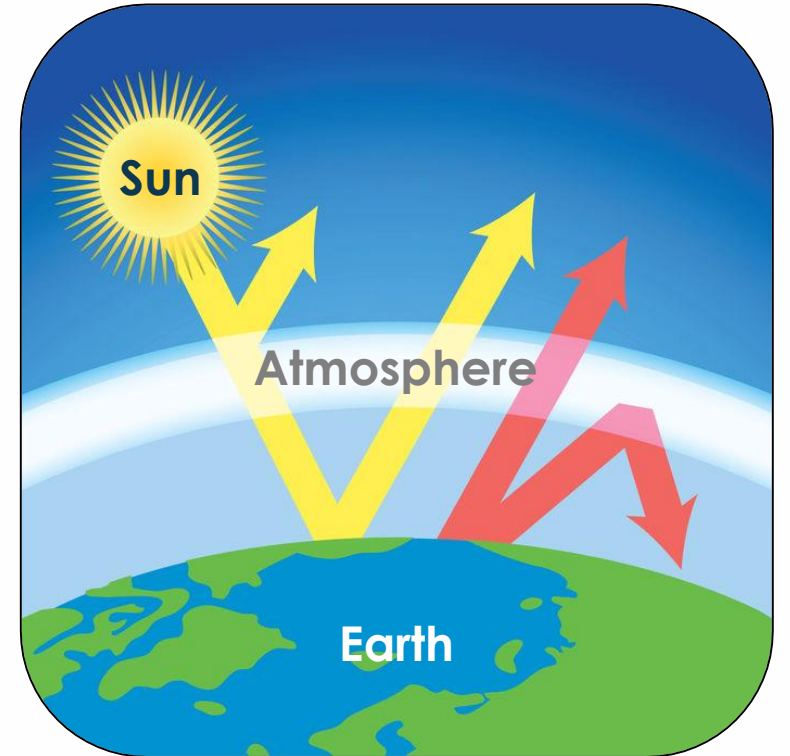
Deforestation

Contribute to excessive **Greenhouse Gases** emissions

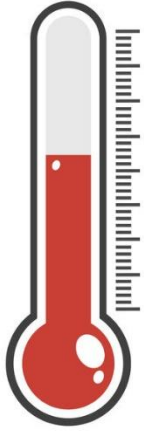


The Greenhouse Effect

- **Warming effect** caused by greenhouse gases in the earth's atmosphere keeps the earth sufficiently warm for **life to flourish**
- **Excessive** release of greenhouse gases from human actions into the atmosphere causes **more heat to be trapped**
- Results in an **enhanced** greenhouse effect = **global warming**



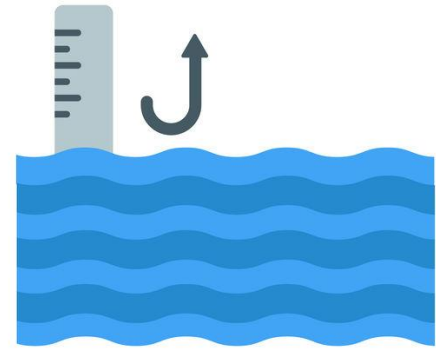
Consequences of Global Warming



Global warming



Melting of sea ice



Rising sea levels



Impacts to the Marine Ecosystem

Increased water temperature



- Corals reefs are **homes** to marine organisms
- Increased water temperature causes corals to **lose their colours**
- **Unable to provide shelter** for marine organisms



Impacts to the Marine Ecosystem

Melting of sea ice

- Sea ice are **homes** to animals such as polar bears and seals
- Increased temperatures due to global warming cause **melting of sea ice**
- **Loss of habitat** for many Arctic/Antarctic animals!



Impacts to the Marine Ecosystem

Rising sea levels



- Beaches serve as **nesting grounds** for sea turtles.
- **Flooding** of intertidal zones means the loss of these nesting grounds on beaches.
- The ability of sea turtles to **reproduce** is affected.



Human Actions



Ends up in...



Contribute to **Marine Pollution**



Marine Pollution

When **harmful substances** (pollutants) are released into the ocean.



Oil spills can coat gills and feathers of fish and birds respectively, hindering their ability to breath or fly.



Waste discharge from industrial and domestic sources can adversely affect the health of the marine ecosystem.



Surface runoff containing fertilisers can end up in the ocean and cause uncontrolled algal growths.



Litter left behind can pose dangers such as entanglement, suffocation, and accidental ingestion to marine organisms.



Top 10 Litter Found In The World's Oceans

1



2,117,931

CIGARETTES

2



1,140,222

FOOD WRAPPERS /
CONTAINERS

3



1,065,171

PLASTIC BEVERAGE
BOTTLES

4



1,019,902

PLASTIC BAGS

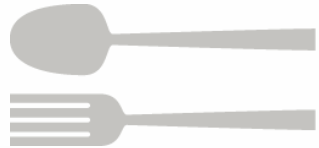
5



958,893

CAPS / LIDS

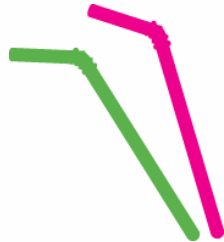
6



692,767

CUPS / PLATES /
CUTLERY

7



611,048

STRAWS / STIRRERS

8



521,730

GLASS BEVERAGE
BOTTLES

9



339,875

BEVERAGE CANS

10



298,332

PAPER BAGS



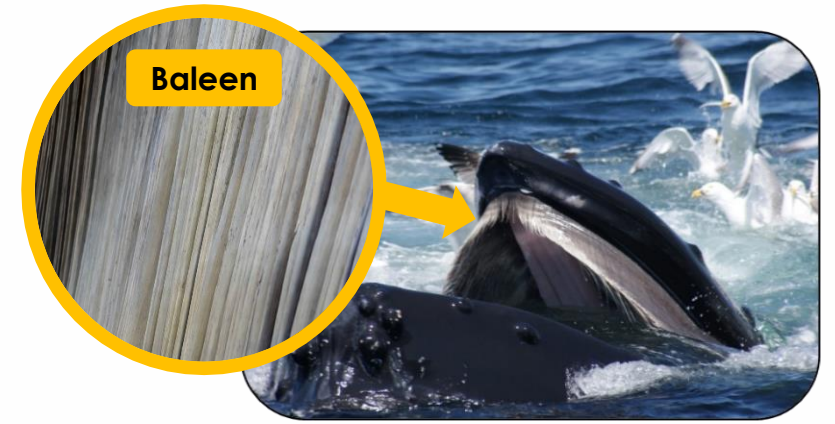
Plastic Pollution

The **discarding** and subsequent **accumulation** of **plastic** objects and materials in the environment, which adversely **affects** wildlife and their habitats!



What are filter feeders?

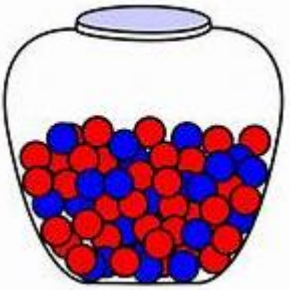
- Animals that feed on tiny animals such as krill, plankton in the water
- They feed by filtering seawater through specialised filtering structures.
- Examples: Whales, manta rays, bivalves, and some species of fishes!



Classroom Activity

Let's step into the shoes (or rather the fins) of a filter feeder!

1. 6 students are assigned the role of filter feeders.
2. Each student will “feed” **once** by using a sieve to scoop out marbles from a bag.
3. Red marbles will be added to the bag at the beginning of every round.
4. Goal: to **get as little red marbles as possible!**
5. After 6 rounds, the student with the least number of red marbles wins!



What Can We Do?

Use public transport



Switch off electrical appliances

Dispose trash into the bin



Reduce, Reuse, Recycle



Reflection

“If you want to change the world, start with yourself.”

- Gandhi

What is one thing you will do from today onwards???

