Resource: 8. A Turtle's Life
Appendix: 8.11 - Background information for educators

Three turtle species used to breed in the Mediterranean Sea: ***Loggerhead*** turtle (considered vulnerable), **Green** turtle (considered endangered), **Leatherback** turtle (considered endangered & the Mediterranean subpopulation is thought not to nest any more in the Mediterranean Sea).

The Loggerhead turtle is the **most common** one. Most turtle rescues by the Wildlife Rescue Team of Nature Trust FEE Malta (NTM) involve this species. It eats hard food like crustaceans and molluscs, and soft food like jellyfish and seaweed. It reaches sexual maturity at 35 years of age, therefore saving every single turtle in need is crucial. The best way to help an injured or sick turtle is always to call the rescue team rather than try to give it first aid your own way.

What is the estimated average lifetime of a litter item, once it has entered the sea?

Item	Approximate time to degrade
Newspaper	6 weeks
Apple core	2 months
Cotton gloves	1-5 months
Wool gloves	1 year
Plywood	1-3 years
Painted wood	13 years
Tin can	50 years
Disposable diapers	50-100 years
Plastic bottle	100s of years
Aluminium can	80-200 years
Glass bottle and jars	undetermined

Source: Mote Marine Laboratory, 1993

These are only estimates. The lifetime of a litter item, especially if made of plastic, depends on where it ends up... a sunny Mediterranean shore? Or at the bottom of the dark, cold North Sea?

Among the treats, it can get caught by fishermen, particularly shrimp trawlers, as **bycatch** or get entangled in **abandoned fishing gear**. **Plastic** is a huge problem too as it easily confuses plastic bags for jellyfish which suffocates or starves them to death. For baby sea turtles, just **half a gram** of ingested plastic can kill them through gut blockage or perforations. Young turtles swim nearer the surface in offshore waters where plastic floats, and drift with plastic-rich prevailing currents. So, **their best chance for survival** is by keeping plastics and other marine litter away from beaches and from entering the ocean.

Marine litter is any persistent solid waste that ends up in our oceans and coastal areas. The main causes are **land-based** human activities but **sea based** activities are also significant. Waste from land based activities finds its way into the sea via wind, tides, rivers, sewage outlets and storm water outflows. The waste can travel long journeys across the oceans because of large system ocean currents known as **gyres**. These caused the formation of five huge **garbage patches** in the world oceans, the largest being the North Pacific Garbage Patch. Marine litter in the Mediterranean also travels long distances.

From **60 to 80 %** of the marine litter found in European Seas is **plastic** which takes **long to degrade**.

Source: Marlisco leaflet.pdf

The **time** for the same objects to degrade **can vary** because it depends on where the litter finds itself along its journey. The same type of plastic bottle that ends up on the bottom of the Antarctic would be different from that of another one which ended on a beach in the scorching Mediterranean sun.
The top ten items in European seas are as follows:

Source: https://safety4sea.com/top-10-garbage-items-collected-from-beach-clean-ups-worldwide/

Waste keeps breaking down into ever-smaller particles. This is also true for plastics which forms **micro-plastics** once the pieces are **5mm** or smaller and eventually become microscopic. Another source of micro-plastics is the loss of lentil-sized plastic pellets used as the raw material for any plastic object or packaging we use, known as **nurdles**.

Nurdles and other microplastics.

Other sources include **microbeads** in cleaning and personal care products, synthetic fabrics which release **microfibers** upon washing and **glitter** in ornamental and beauty products.

While **macro-plastic** (> 2.5cm) is visible and we easily comprehend that it poses problems (the garbage found in autopsies of dead stranded whales and dolphins is enough to witness the extent of the problem), micro-plastic eventually becomes invisible to the naked eye. Micro-plastics are ingested by marine wildlife including **filter feeders** like mussels which feed on plankton with which microscopic micro-plastic is mingled. They **accumulate** in **organisms** and along the **food chain** and we eat them in our food. So do the **toxins** that micro-plastics absorb from polluted waters.

Therefore, marine litter is a problem because it affects **wildlife**, **ecosystems**, **people**, and **livelihoods** in several ways. Action is needed at individual and community levels, locally and globa