



ACTIVITY:

LITTER AND ECOBRICKS

LEARNING AIMS:

- To understand the impact of dropping litter and be able to make an informed choice about alternatives
- Recognise the scale of the problem of litter and the cumulative impact of individual choices
- Develop an awareness of what can and cannot be recycled
- Describe the process of recycling and various alternatives
- Practice appropriate disposal of various types of litter

TIME:

1 hour (can be easily extended, or can be cut down by having litter pick, sorting and ecobricks all taking place simultaneously with different groups of pupils)

RESOURCES:

- Litter pickers (available to borrow from Groundwork on 0191 5364873 or Tony Purcell, Green Space and Parks Supervisor, STC on 0191 4272067, or purchase Ranger Max for durable litter pickers from www.hhenvironmental.co.uk/product/ranger-max/)
- Bin bags
- Gloves (including at least 1 pair puncture resistant gloves)
- Sharps bin
- Plastic bottles
- Bamboo canes or similar for squashing waste
- Silicone sealant



South Tyneside Council



ACTIVITY DESCRIPTION: WASTE STREAMS

Part 1 - Ask pupils to identify different ways of disposing of a used piece of paper. Support them to identify that it could be:

Recycled - Transported to a factory where it is heavily processed (e.g. torn up, bleached, etc.) to create a raw material which is then made into a new product (e.g. new piece of paper).

Incinerated - Transported to an incinerator or "energy from waste plant" where it is burnt. The heat from burning the waste is used to generate electricity and the fumes are filtered to eliminate toxins before being released.

Sent to landfill - Transported to a big hole in the ground where it is dumped. When the hole is full, it is covered over and left. It will eventually anaerobically rot away, releasing methane.

Composted - Placed into a compost bin (or transported to a commercial composter) where it is aerobically digested by worms and/or bacteria, releasing carbon dioxide. It turns into compost which can be used to grow vegetables or other plants.

Repurposed / "upcycled" - Has some work done to it to make it into a different object e.g. a paper wallet, wall decoration, or table mat. This is normally small-scale (not in a large factory).

Reused - Used again for the same purpose it was originally used or (not easy with paper except for turning it over or rubbing out pencil).

Dropped on the floor - Blows away in the wind. May break down in rain. Could end up anywhere. May be picked up by hand or by a road sweeper.

(To simplify this activity - print the above terms and definitions and ask pupils to match the term to the definition in pairs).

Part 2 – Ask pupils work in pairs or small groups rank these options above from 'best' to 'worst'. This is to prompt discussion, there is no right or wrong. Bring class together for discussion on factors that influenced their decisions: this could include contribution to climate change from direct emissions (rotting), contribution to climate change from indirect emissions (e.g. transport and processing), impact on wildlife (eating litter, loss of habitat for landfill, etc), water use, production of a useful end product, and convenience/ease for the person disposing of the waste or more.

Part 3 - Ask pupils to think about which disposal routes could be used for different types of litter and how the benefits and consequences change for different materials.



ACTIVITY DESCRIPTION: WASTE SORTING

Prior to session, work with relevant personnel in your school to identify how the collected litter can be disposed of. Particularly, can any be recycled and if so, how should it be sorted, e.g. all recyclables together, just paper, separate all different materials, etc.

Explain the waste sorting methods that have been agreed so pupils know what will be happening with the litter they collect and are able to pre-sort during the collection process to reduce contamination.

Part 1 - Litter pick

Find an appropriate space within the school grounds or nearby with a reasonable amount of litter (clearing highly littered areas has a big, visible impact and gives greater satisfaction). You are likely to find litter concentrated at the bottom of hedges or fences.

If you are working outside of school grounds, you may wish to liaise with STC (South Tyneside Council) waste team on 0191 427 7000 for disposal of collected waste.

- Pupils work in groups of 4:
 - 2 people picking litter using the pickers to collect litter
 - 1 person carrying a bin bag for non-recyclable / non-reusable litter
 - 1 person carrying a bin bag for recyclable / reusable litter

A note on Health & Safety around litter picking:

- Identify potentially hazardous litter and how it will be disposed of in advance and explain this clearly to pupils (even if likelihood of finding items is low):
 - Needles/syringes should not be touched by pupils, even with litter pickers. A competent member of staff or STC waste disposal team (contact on 0191 427 7000) should place any item found in a sharps bin and arrange appropriate disposal. If this cannot be done immediately, the site should be marked with a cone or other obvious cover and pupils should stay clear.
 - Other sharp items such as broken glass or torn cans should not go in bin bags. They should either be marked for appropriate collection by staff, or put into a container such as a plastic box for disposal directly into a bin by relevant staff. The container should be brought to the item, rather than pupils carrying the item to the container.
 - Large or heavy items that cannot be picked up using a single litter picker should be left in place. A member of staff should decide whether it is appropriate to carry the litter (if non-hazardous and light enough to safely carry) directly to a bin or to leave it for later removal by school staff or STC waste team.
- Pupils must not touch their faces during litter picking.



- Nobody should touch any litter with hands, even with gloves, unless a member of staff has inspected that item and found it to be non-hazardous. All litter must be picked up using litter pickers.
- Hands must be washed after litter picking (or after sorting if moving straight to that activity).

Part 2 - Waste Sorting (note, this could run alongside ecobricks, with different pupils taking on different roles)

- Empty the bags of waste which can be either recycled or reused onto a small tarpaulin or the floor of a sheltered spot. If emptying directly onto the floor, mark out the area where the rubbish will be placed. Nobody should step inside this area or on the tarpaulin.
- Pupils to sort the recyclable materials and distribute to the appropriate recycling point in school
- Non-recyclable (and non-hazardous) waste is to be used for Ecobricks (below)

Part 3 – making Ecobricks

- Cut the top off a plastic bottle and keep the big, lower half. Cut another bottle of the same size in half, keeping the bottom half.
- Take non-recyclable and non-hazardous pieces of plastic waste such as crisp packets, bits of rope, bags (including the bin bags used for waste collection), etc. and push into the plastic pop-bottles. Fill the larger section 90% full and the smaller section 40% full. Use the bamboo canes or similar to compact the rubbish (do not push down with hands).
- Apply the silicone sealant around the larger section at the same height as the litter reaches.
- Push the smaller section over the larger section, twist, and push together.
- Wash Hands

For more information on Ocean ecobricks see www.ecobricks.org/ocean-ecobricks/ and for details of what to do with completed Ocean ecobricks see www.ecobricks.org/exchange/

Conclusion

- Ask pupils to imagine what would have happened with the litter if it hadn't been collected. What might the consequences have been for nature? (e.g. eaten by wildlife, slowly broken down into microplastics in soils or ocean, or just sat there for 100's years).
- Then imagine what might happen now that they have collected and sorted it (e.g. recycled into new products, incinerated to create energy, ecobricks used for construction)

