# Teacher notes Why recycle?

Production of items uses energy. Energy is used during the harvesting of raw materials, manufacturing of products and disposal of these items. By recycling, we can save energy at each of these stages.

## Harvesting raw materials: by using materials from old products to make new products, we reduce the amount of raw materials we must harvest.

**Manufacturing:** it may use less energy to manufacture materials such as steel from processed steel, obtained from used cans, than extracting fresh metals from ore.

**Disposal:** once many of the products we use reach landfill, they decompose very slowly or do not decompose at all. This is an environmental concern, as it can produce greenhouse gases or leach toxins into the local environment if not properly managed. By recycling, we can reduce the amount of items that end up in landfill.

**Recycle** means that if we are throwing out items like plastic bottles, these items don’t end up in landfill, but are used to make a new product. Unfortunately, most plastics lose quality when they are recycled and can only be recycled once or twice before eventually going to landfill.

## What can and can’t be recycled?

This is a complex issue, which has a different answer depending on which local authority you live in. There are some ways your class can begin to figure this out.

**Recycling symbols:** Encourage pupils to look at the waste items for the symbols shown on the ‘Recycling Symbols Key’ in the presentation. If the item shows a clear recycling symbol then it can be recycled.

**No symbols:** Not all waste items will display symbols, this may mean that they are non-recyclable, or simply that the manufacturer has not provided this information. In this instance, the pupils will have to determine the material type to try to figure out if it is likely to be recyclable. If it is made of cardboard, paper, aluminium or steel it is likely to be recyclable, if it is made from an unidentifiable material or a mix of materials it is unlikely to recyclable. Only some plastics are recyclable.

**Mixed materials:** Generally if an item is made from multiple different types of materials then it becomes harder to recycle. For example, milk cartons are made from cardboard with a plastic film and foil layers to keep them waterproof. These materials cannot be separated, and so these are generally non-recyclable. If an item is made from mixed materials that can be easily separated, for example, a glass jar with a removable plastic lid, then the pupils should separate these items prior to sorting.

**How could it be made easier?** Some of the issues outlined above may provide useful discussion points for the question: “What would make it easier to recycle?” or provide inspiration for the design of the pupils’ recycling plants in the ‘Build a Recycling Plant’ activity.

## What can and can’t be recycled?

In the presentation and the carbon savings tables provided, you will see how much carbon dioxide can be saved by recycling 1kg of certain materials. To calculate how much the class could save by recycling all of the materials collected, you can carry out the following calculation in the table:

Example:

**We know:**

CO2 saved by recycling 1kg of plastic = 1.0kg

Plastic collected by class = 2.3kg

**So:**

CO2 saved (kg) = CO2 saved by recycling 1kg of plastics x kg plastics collected

CO2 saved (kg) = 1.0 x 2.3

CO2 saved (kg) = 2.3