

# Understanding Sustainability

## Sustainable strawberries

Compare the production of strawberries from different locations.

## Life cycle analysis - sustainable strawberries

### Strawberries from plant to plate

Activity looks at strawberries from three different sources to see which is the most sustainable. The activity also illustrates the complexity of a product's life cycle.

Students work in groups of 3-4 (30mins)

**Resources** Photocopies of sheets and scissors to cut out cards.  
2 copies each of sheets *Sustainable strawberries 2* and *3*.  
1 copy of sheet *Sustainable strawberries 4*.

**Activity** Have students use the cards (next pages) to produce three 'flow diagrams' to show the production and sale of strawberries from different sources:-

- Supermarket strawberries grown in polytunnels in southern Spain.
- Strawberries grown under heated greenhouses or polytunnels in the UK.
- Strawberries from a local pick-your-own farm.

Prompt students with an initial discussion of the process:

- Growth.
- Processing (cleaning, grading etc).
- Packaging.
- Transport.
- Retail shops.
- Disposal of any wastes.
- Areas where energy is used.

Also highlight the social aspects:

- Employment and wealth creation.
- Availability of strawberries (nearly all-year round from Spain, summer only from UK growers, pick your own for only a few weeks).

On completion of the life cycles, students discuss the three sources of strawberries using these questions as a guide.

1. Which strawberries are the most environmentally-friendly?
2. Which strawberries are the best for creating jobs for people?
3. Which strawberries are the most convenient?
4. Should we only allow UK strawberries? Should we ban imports of strawberries when they are not in season in the UK?
5. How easy is it to think about a life cycle? Where should the 'boundary' be drawn to stop it spreading out further and further?

Some points to look for in a discussion include:

- Lots of things can be brought into a life cycle. For example, the energy needed to make the car that you drive to the supermarket. Stress that there must be a decision made at some point to limit its scope.
- Growing strawberries uses up land resources. Polytunnels in southern Spain are having a large environmental impact (land and water use). However, they do not require heating. Greenhouses in England may require heating during early spring.
- Farming, harvesting and processing employ people.
- Strawberries are also used in the production of other foods – jams, cakes etc. If strawberries were only available during the UK summer, what impact would that have on the producers of these foods?
- Energy is required to harvest and process the strawberries.
- Packaging helps to protect the strawberries. It can contain information such as sell-by dates and nutritional details but excessive packaging causes unnecessary waste.
- Energy is used in transport. E.g. aeroplane or overland lorry from Spain, lorries from English growers, cars to pick your own farms and cars to supermarkets.
- Waste (from the empty packaging) has to be collected from our homes for disposal.
- A wider analysis may also consider manufacture of other items used in the life cycle. Students should consider where the boundary of a life cycle analysis should be drawn.

## Sustainable strawberries: from plant to plate

Strawberries can be eaten as fruits or made into jams, cakes and ice cream.

Strawberries sold in the UK could come from these three sources.

### Imported strawberries

Strawberries are imported from places such as Holland, Spain and even by from the USA. This gives an all-year-round supply.

Producing and selling strawberries for sale during winter can be very profitable. The prices in the shops are higher than strawberries in the summer season.

### English strawberries

Strawberries are grown in greenhouses or polytunnels. Sometimes the greenhouses need heating which uses energy.

Using polytunnels mean a longer growing season for English strawberries. They may be available through the spring and summer.

### Pick your own strawberries

Some local farms have 'pick your own' schemes. Strawberries are grown in open fields. People go to the field and pick the strawberries that they want to eat.

These strawberries are usually only available for a few weeks each summer.

### Your task

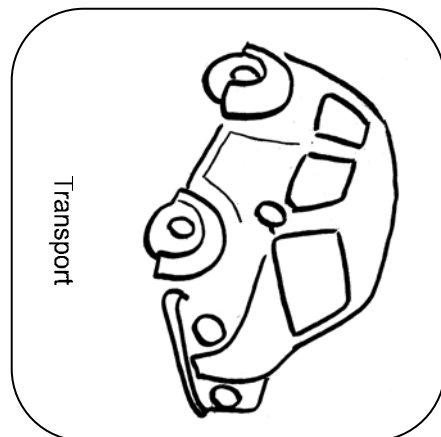
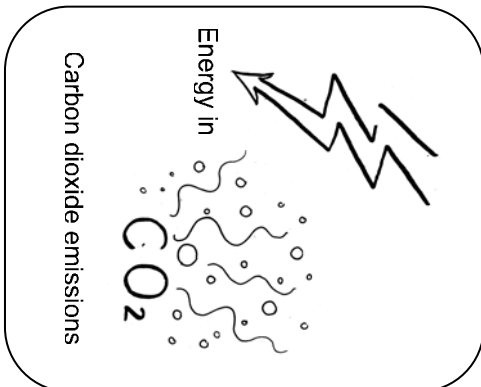
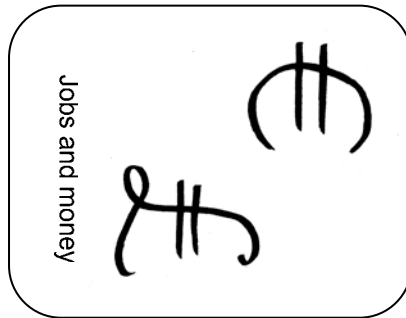
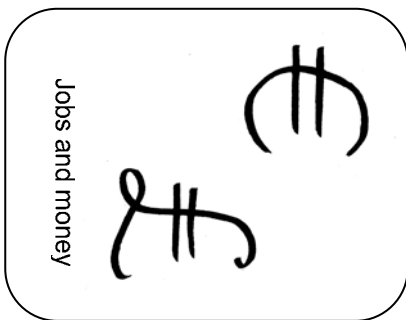
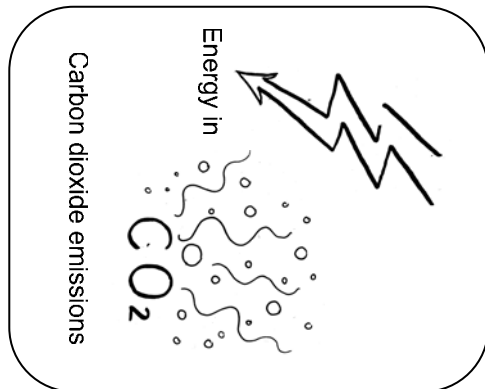
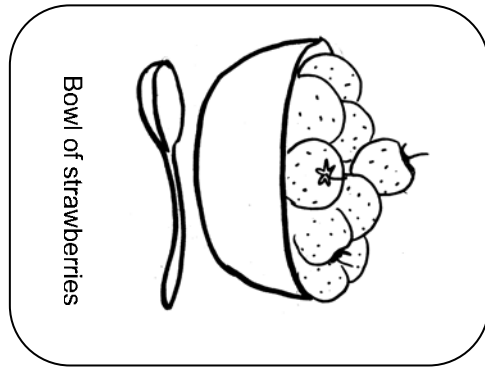
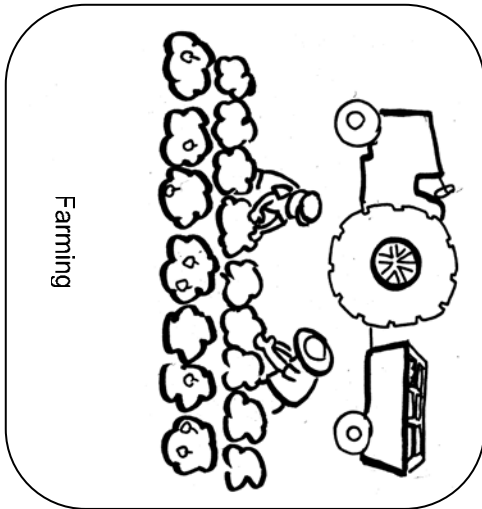
Use the picture cards to produce **three** flow diagrams that show how strawberries get from the field to your plate. Show this for:

- imported strawberries;
- English strawberries;
- pick your own strawberries.

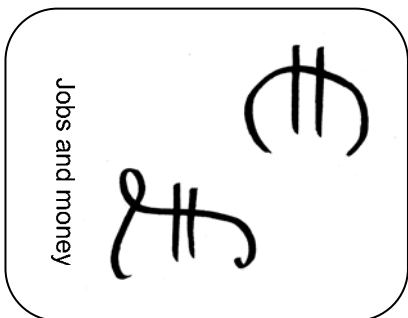
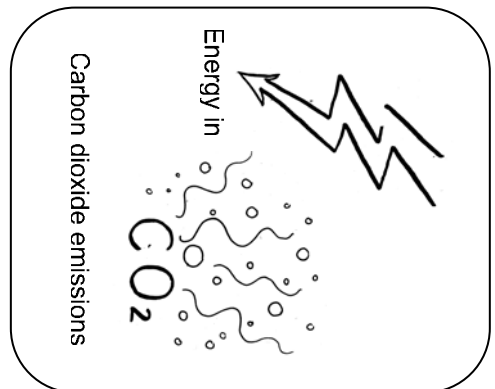
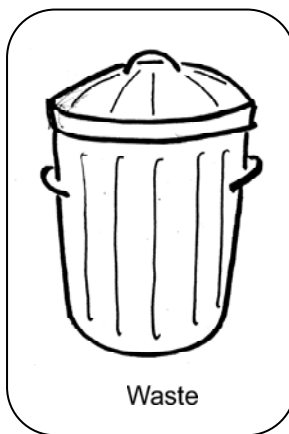
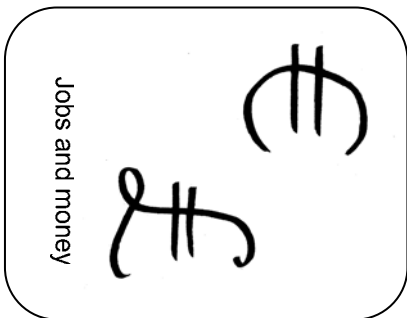
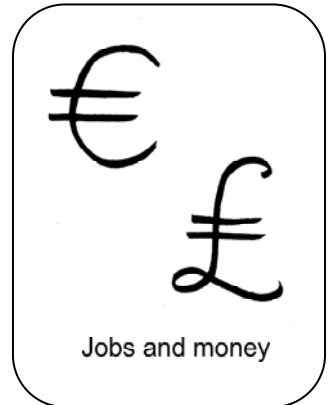
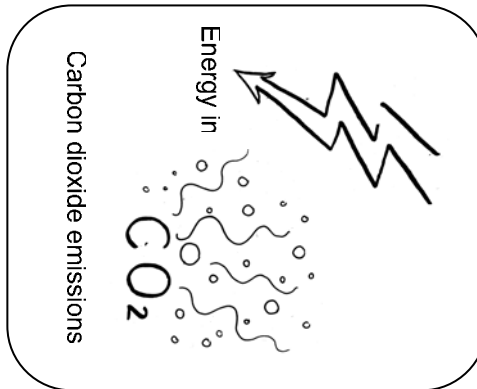
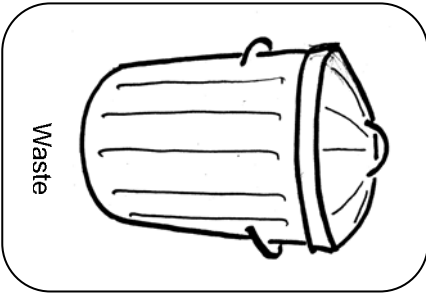
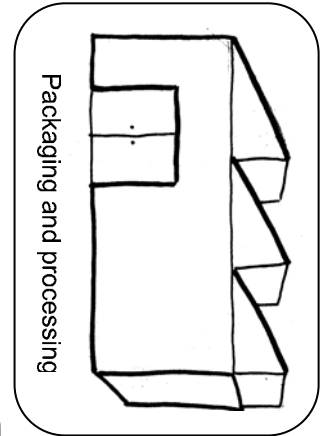
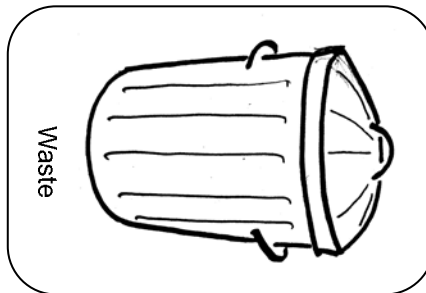
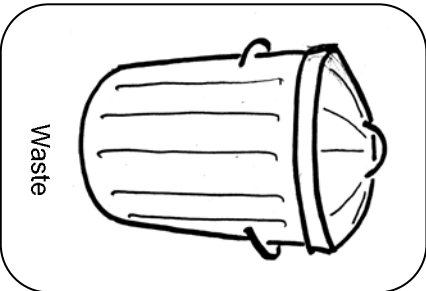
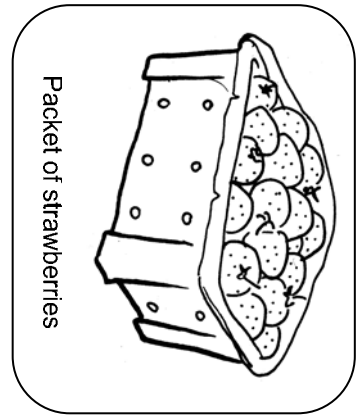
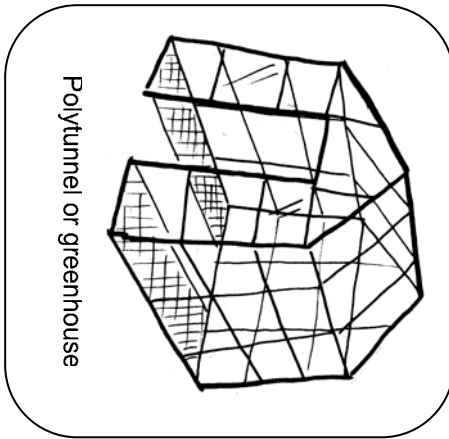
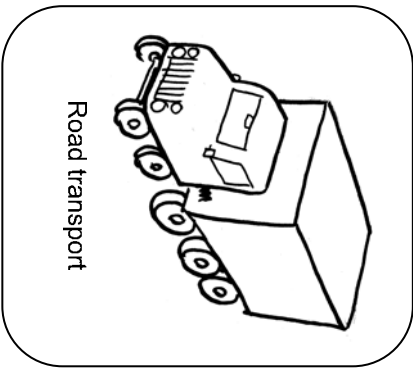
### Questions

Look at the three flow diagrams you have constructed.

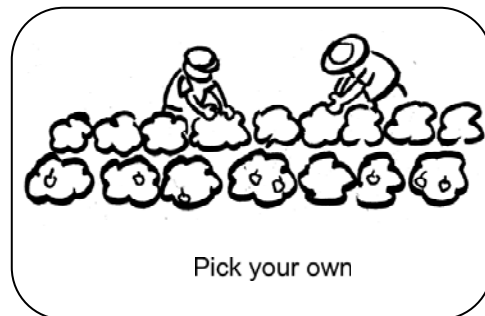
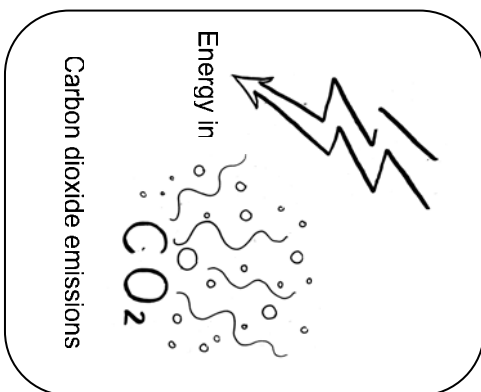
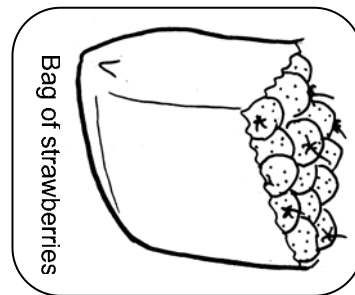
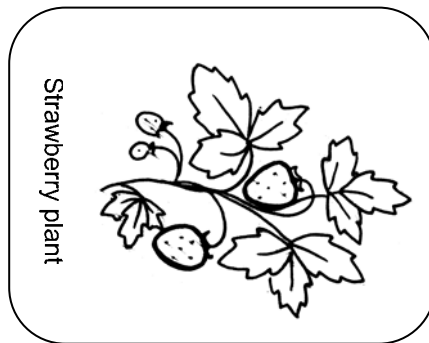
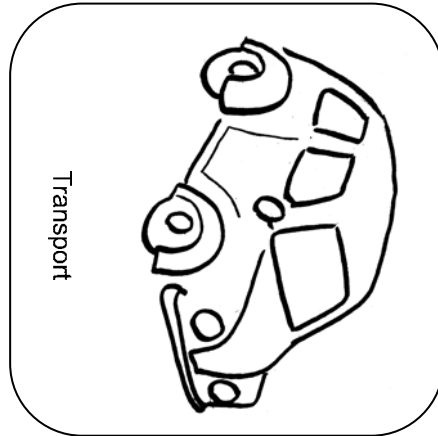
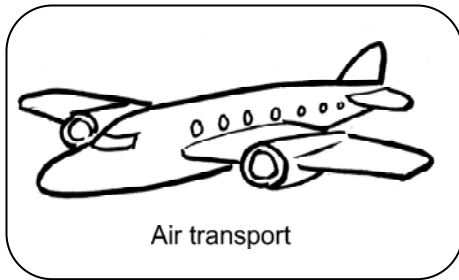
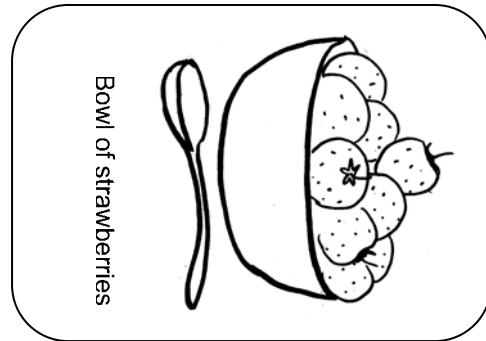
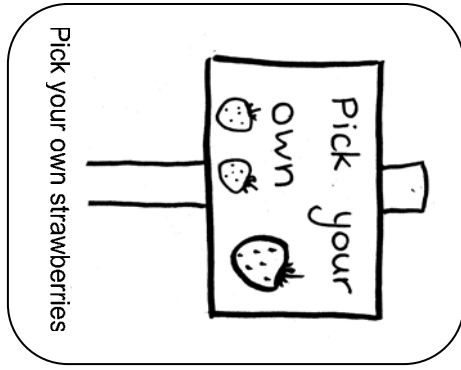
1. Which strawberries are the most environmentally-friendly?
2. Which strawberries are the best for creating jobs for people?
3. Which strawberries are the most convenient?
4. Should we only allow local strawberries? Should we ban imports of strawberries when they are not in season in the UK?
5. What extra things could you link in to the strawberry life cycle? Where should the 'boundary' be drawn to stop it spreading out too much?



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