

## 6. Egg-spress delivery



2-3 hours  
activity

Children are challenged to this mini-enterprise activity to design packaging that will protect a fragile product.

### OBJECTIVES

- Compare, sort and group everyday materials on the basis of their properties, including shock absorption
- Pupils should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas

### RESOURCES

(per group)

- A selection of packing materials (see previous activity) Adhesives e.g. Sellotape or glue
- Plastic money (maths equipment)
- Fragile item
- Activity Sheet A6a and A6b and A6c for the certificate
- Calculators (optional)
- List of Royal Mail parcel charges
- Weighing scales and weights
- Postage stamps (or a trip to the Post Office to post the parcels)

### CARRYING OUT THE ACTIVITY

To extend the previous activity a mini-enterprise challenge is set. The challenge is to design a package that would carry a fragile item through the Royal Mail system without being damaged. Activity Sheet A6a provides the children with a letter from "Eggcellent Eggs Ltd." who are asking for tenders to provide such a packaging.

Groups of children could set themselves up as companies to put in a tender. Each 'company' is given a fixed budget in plastic money from the maths equipment and they then have to buy packaging materials and adhesives from a 'supplier'. The supplier could be the teacher or a group of children in the class. Prices will need to be allocated to each item and sold in units of length, area, volume or weight as appropriate. If time allows, choosing these units of sale provides an extra activity.

Each group can record its expenditure on the budget sheet provided on Activity Sheet A6b. Children are given the option of using a calculator to complete their budget sheet. Before each group begins, the teacher leads a class exercise showing how to fill in this sheet. An example is given overleaf.

Money allocated	Material bought	No. of units	Cost per unit	Total cost	Money remaining
150p	Cotton-wool (unit=100g)	1	10p	10p	140p
	Bubble packing (unit=100 cm <sup>2</sup> )	3	10p	30p	110p
	Sellotape (unit=1metre)	1	5p	5p	105p
	Thin card (unit=100 cm <sup>2</sup> )	4	8p	32p	73p
	Postage stamps			68p	5p

The children will need to be aware of the weight of their package as the cost of postage stamps will be included in their expenditure. The children could refer to the list of Royal Mail charges during the making of their package. The teacher should point out that a weight change of 10 grams can increase or decrease the price of postage substantially if near the weight limits of any price band.

Total cost of material	=	77p
Cost of posting package	=	68p
<b>Total expenditure</b>	=	<b>145p</b>

To test the products each group addresses the parcel, containing their fragile item, to themselves at school and posts it!

Whilst waiting for their parcels to return, the children could spend a lesson taking part in role- play, simulating the journey of the parcels from the Post Office back to the school.

On return delivery the packages are opened and the groups evaluate and describe the state of their eggs. The groups report their findings to the rest of the class.

The group with no damage to their egg would win the contract certificate on Activity Sheet A6c. If several groups have no damage to their eggs, the one with the cheapest production costs would win the contract. In the case of all the eggs having some damage, the group with minimum damage could be chosen to win the contract with suggested modifications to their design.

At this stage the whole class could be involved in brain-storming modifications to design one class 'super-package' that can be made and posted for testing, if time permits.