



Making a car body

Design and make a card model of a car body from a net

Subject(s): Design & Technology, Mathematics

Approx. time: 30-60 minutes

Key words / Topics:

- > Body
- > Car
- > Card
- > Fold
- > Net
- > Scissors
- > Tab

Suggested Learning Outcomes

- > To know that 3D shapes can be constructed from nets using folds and tabs
- > To be able to make a complex 3D shape from a 2D net

Introduction

In this series of activities pupils will learn about nets and wheels and axles. They will combine these technologies to make the base and body for a vehicle made from card.

This activity introduces the builds on knowledge of nets to make a complex three-dimensional shape suitable for the body shell of a car. It could be used at Key Stage 1 to develop practical skills making nets.

Purpose of this activity

In this activity pupils will make a card model of a car body from a net.

Activity

1. Introduction and demonstration (10 mins)

Show the 'making a car body' slide on the presentation and demonstrate how this is made, pointing out the cut lines, the fold lines and the tabs.

If necessary, reinforce how scissors are used safely.

2. Making the car body (20-50 mins)

Pupils make the car body using the handout:

1. Cut out the outline of the appropriate net
2. Fold the net along the dotted lines (so the dotted lines are on the inside of the fold)
3. Put glue on the tabs and assemble the car body

Teacher notes

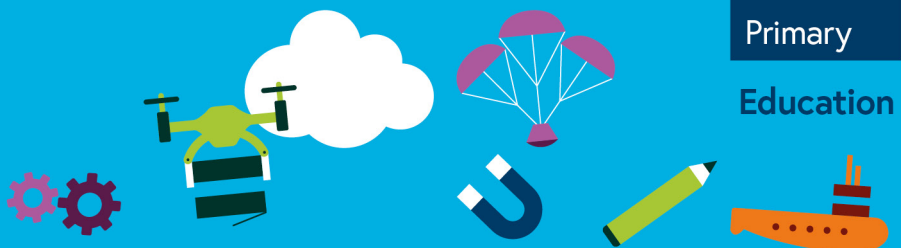
The presentation associated with this activity includes detailed instructions for the making task.

Pupils may want to customise their car bodies by adding colour or graphics - however this needs to be done before the body is stuck together. Further, it can reduce the risk of tearing if this is done before the net is cut out.

The fold lines on the handout are all 'valley' folds – that means they are on the inside angle when produced. If they were on the outer face they could be referred to as hill folds.

Additional guidance for making:

- > Accurate folds can be started by using a ruler along





the fold line.

- > To make a 'sharp' or precise fold, the card should be fully folded over and pressed along the length of the fold.
- > If needed, the folds can be scored on to the card using scissors and a ruler.
- > The fold lines on the handouts should be on the inside of the assembled shape.
- > Glue sticks or applicators can be used to apply glue to the tabs. Alternatively, double sided sticky tape could be used, or regular sticky tape applied from the outside.
- > It is advantageous to use a hole punch to create the holes on the body (these are for axles). Alternatively, these could be made by pushing through the card with a sharp pencil, into a piece of modelling clay.
- > If there are any tears in the body, these can be addressed by using sticky tape on the inside.

Differentiation

Basic

- > The net could be pre-cut to size
- > Sticky tape could be used to stick the shape together from the outside.
- > An exemplar could be used to illustrate what the folded net should look like.

Extension

- > Colour could be used to customise the body shells prior to assembly.
- > Pupils could select an alternative design (e.g. from those shown on the sites listed in the additional websites below) and adjust the size so that it would fit on the same base.
- > Pupils could customise the design of their vehicles, or even design their own body shells.



Resources

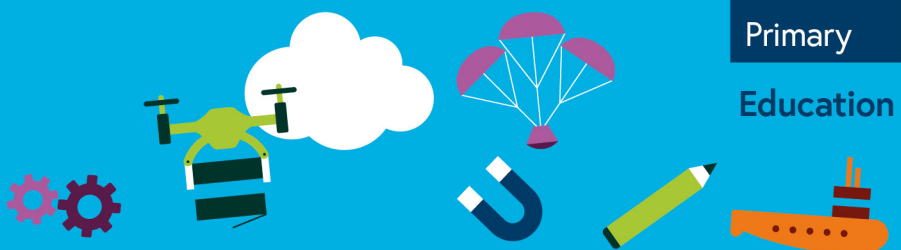
Copies of the car body handout, printed on card, 1 per pupil (plus spares)
Scissors
Glue sticks

Optional:
Sticky tape or double sided sticky tape
Coloured pencils
Hole punches (ideally single hole punches)
Pre-made model of the example shape, for

Required files



-  Car body
-  Car body (handout)





demonstration (this could be made large size, for example by printing out on A3 card)

Additional websites

- > Examples of nets for different vehicles (images can be saved by right clicking and 'save target as')
<https://www.template.net/business/paper-templates/paper-car-template/>
- > Examples of vehicle nets on pinterest <https://www.pinterest.co.uk/pin/348043877428335040/>,
<https://www.pinterest.co.uk/pin/168744317266140542/> and <https://www.pinterest.co.uk/pin/196047390004681795/>.
- > Video clip of the assembly of a very complicated car net, including a link to a downloadable version of the net:
<https://www.youtube.com/watch?v=3QRSH4ri-0U>.
- > Index page on nets at [technologystudent.com](http://www.technologystudent.com) – useful to provide teachers with a thorough understanding of nets and also includes printable worksheets http://www.technologystudent.com/despro_flash/graphics_dev1.html
- > Commercial websites for cardboard engineering models <https://www.flying-pig.co.uk/> and <https://www.robives.com/>.

