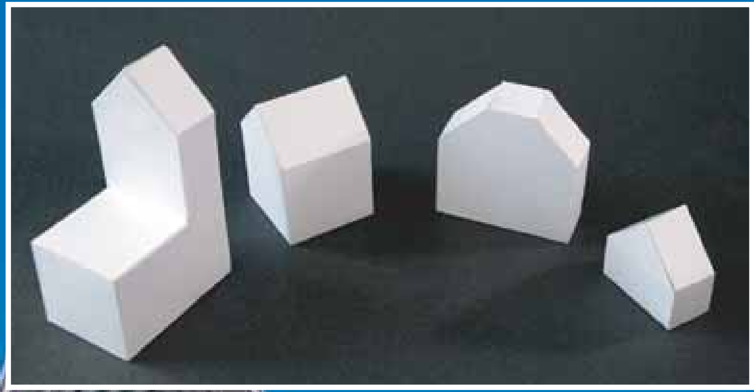
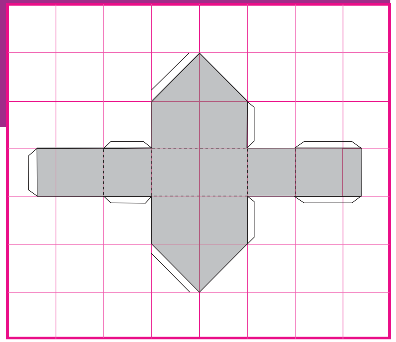
nets

Here is a simple model of a church and some houses.



building for the future

Here is the **net** for one of the buildings:



Design **buildings** you might find in your village or town.

Keep your buildings simple to start with.

Draw a net of each your buildings

Think about the lengths of sloping roofs

create maths

Building for the future : Building a town

Description

This topic explores aspects of the 3-D thinking involved in developing architectural ideas and making models.

Activity 1: Designing nets

Designing nets is an extended activity in which the pupils design and create models of simple buildings they see in their villages or towns.

A selection of cardboard models of simple buildings is illustrated on the pupil activity sheet. It is a good idea to make buildings first using multilink.

This is followed by experimenting with paper to construct an accurate net. Once this is achieved, the design is transferred to card and the final product is produced.

You will need to have your pupils working in groups of at least 3 or 4. Each group will need some scissors and glue, a selection of multilink cubes and prisms, some squared paper and some card. (2cm squared paper works well because it matches the side length of the multilink, making it possible to check the nets more easily. Medium board, that is card of thickness 380 microns, is a good choice because it's rigid enough and can be easily cut with scissors.)

Buildings with sloping roofs offer opportunities for experimenting and measuring or calculating in order to draw accurate nets.

Your pupils may suggest making models of more complicated buildings and you could extend their thinking by asking them how to construct buildings with different shaped roofs – conical, domed, barrel-shaped and so on.

The pupil's work can be combined to make a 3-D poster for the wall by gluing their cardboard models to a stiff sheet of card, adding roads and other details for effect. Alternatively, display digital photographs of the village or town produced by the class. With these end products in mind it may be easier to add details, such as doors, windows and roof tiles, to the net of the model before the cutting and gluing stage. This provides further opportunities for 3-D visualisation.

Resources

Multilink is available from Arnold.
http://www.nesarnold.co.uk/

Photos by Peter Smith Associates

The mathematics

Designing nets requires thinking about and interpreting geometric information presented in different forms, moving from one form of representation to another.

The activity requires the construction of nets and provides an opportunity to work with Pythagoras' theorem when including roofs in the net design. Extending the activity to include the construction of models with more complicated roof structures could provide opportunities to work with the formula for circle circumference.