



Teaching resource 7

Kite projects for design and technology 1: Sled for KS2

Kite projects provide an excellent opportunity for pupils of all ages to engage in a fun activity involving research, drawing and construction followed by, for more advanced projects, detailed design, manufacture and evaluation techniques.

Within any course, the activity:

- can be varied to match pupil ability
- encourages skills such as attention to detail and creativity
- can be widened to include appreciation of materials, mathematical concepts
- can be measured on both planning and construction of the kite but also on its ability to fly

Materials are relatively low cost and work can be done by individuals or in a small group.

The following resource is taken from the book *Kite Projects for Design & Technology* sold by Cochranes of Oxford which includes a selection of kite projects for students aged from 7 to 16 as well as providing information on kite making materials and techniques.

Materials to make the Standard Sled featured can be purchased from Cochranes of Oxford in packs containing everything you need to make 10 kites or as individual parts.



4007 Standard Sled (10pk)



0695 Standard Malay

Recommended products:

0685 Standard Malay (10pk) Age 8+
4007 Standard Sled (10pk) Age 8+
4038 Kite Projects for Design & Technology - Book

Or you can order sufficient separate kite parts, including sail material, spars and fittings for your individual needs.

A kite project for students aged 7 to 11, year groups 3 to 6 (KS2)

Kite Design for Key Stage 2

Standard Sled Kite



Tools needed

Scissors, saw, leather punch.



Materials needed

Sail material; this could be plastic sheet (a large carrier bag would do), tyvek, ripstop nylon, sticky tape, 4-5mm wooden dowel, 1m waxed line, 30m flying line, handle, newspaper.



The Sail

Draw up a full sized sail on some paper, a piece of newspaper would do. Pin the paper to the sail material and cut out the sail, taking special care in cutting out the vents. Strengthen the wingtips with 3 layers of plastic sticky tape and punch a hole 5mm from the end of each wingtip. A leather punch could be used for this.



The Spars

Cut 2 spars from 4mm to 5mm wooden dowel each 400mm long. Stick the spars onto the sail as shown in the diagram using pieces of plastic tape; 4 pieces per spar should be enough.



The Tails

Cut 4 pieces of plastic sheet 500mm long and 20mm wide. Stick these to the trailing edge of the kite, 2 on one side and 2 on the other.



The Bridle

Take 1 metre of waxed line (use flying line if no waxed line available) tie between the wingtips and tie a loop in its centre. You can find the centre by holding the wingtips together.



Pre flight checks and the launch

Hang the kite from the loop on the bridle and make sure it hangs symmetrically.

Write the following words on the kite sail using a spirit based felt tip pen **“Do not fly near overhead power lines or in thunderstorms”**.

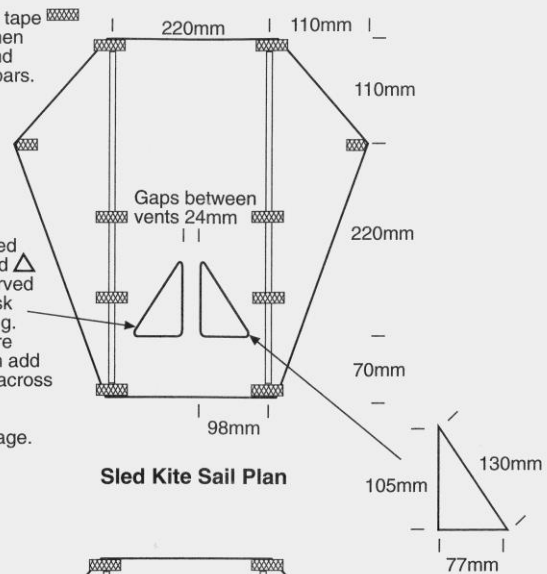
If you have a kite line handle, tie an end of your line to it and wind the line (30m will do) onto the handle.

Now tie the loose end of the line to the loop in the bridle.

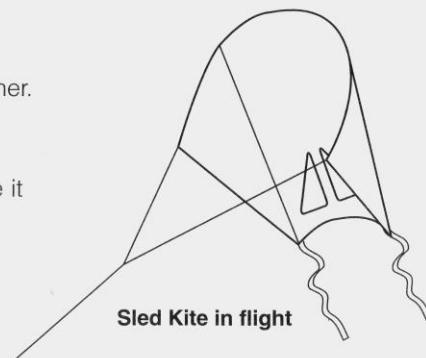
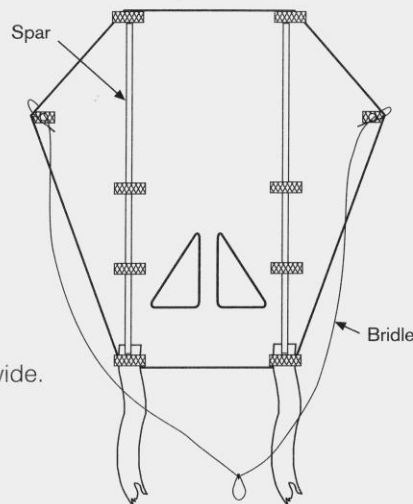
Find a breezy spot well away from trees and buildings. Ask a friend to hold the kite above their head, with the side with the spars on it facing the wind. Walk upwind for some 10 paces letting out the line as you do so. Pull the kite gently from your friend's hands.

Use sticky tape to strengthen corners and position spars.

The vent is based on a right angled \triangle with vertices curved to reduce the risk of the sail tearing. If the vertices are not curved, then add a piece of tape across each vertex to strengthen it. See following page.



Sled Kite Sail Plan



Sled Kite in flight