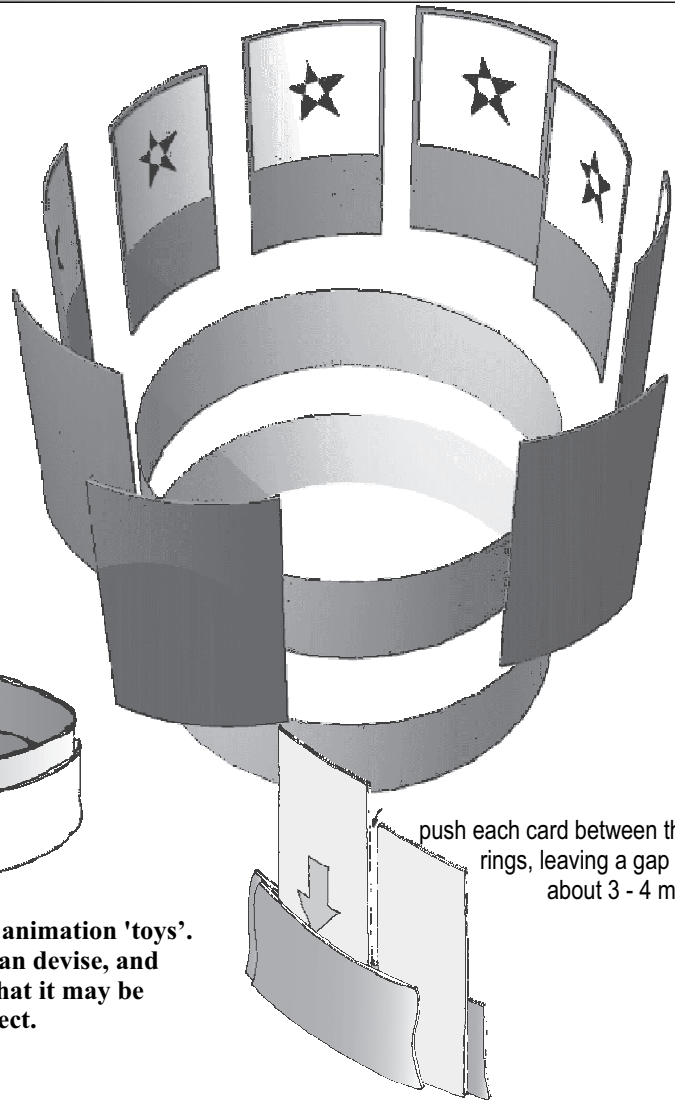
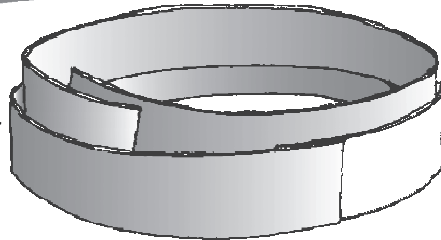


make one ring inside the other



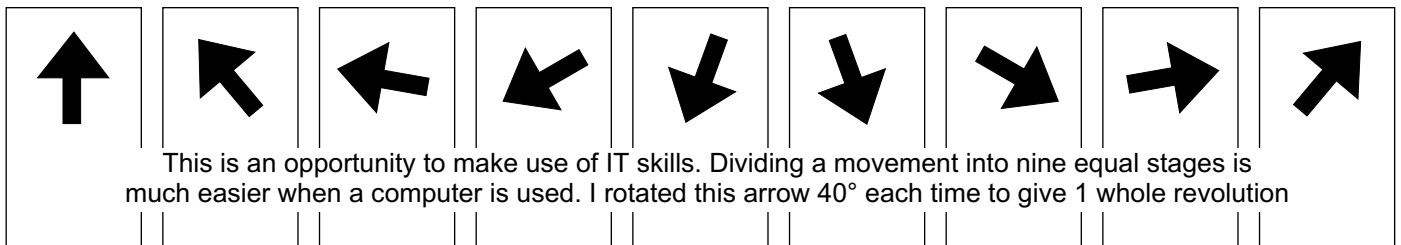
push each card between the rings, leaving a gap of about 3 - 4 mm

The zoetrope is the most widely recognised of the Victorian animation 'toys'. The method of construction shown here is as simple as we can devise, and most children should be able to cope with it. It's so simple that it may be regarded as 'disposable', making it an ideal Christmas project.

You will need 2 strips of springy card, 54 cm. by 4 cm.

You will need 9 cards 10 cm. x just over 5cm . These could be thin copying card.

- Make one of the long strips into a ring. Overlap the ends by 4cm to give a ring of 50cm circumference - let the glue dry.
- Bend the second strip round the inside of the first ring and carefully glue the ends together. Make sure that you don't stick the two rings together. Don't try to make it a tight fit - a relaxed fit is ideal. If, when you pick up the inner ring, it wants to slip out that's OK.
- Prepare your picture cards. You will want a simple animation divided into 9 stages. To start with, draw something that either rotates or moves up and down or changes size or shape. Make the shapes basic and clear - you can always make another set later. Make the backs of the cards dark, either by colouring or by gluing dark coloured paper to the backs.
- Push each card, in order, between the two rings, picture facing in. The first will go in very easily, and will probably fall out easily too, so work flat on a table. As you proceed, the small space between the rings will fill, and the cards will get harder to insert. Leave an even space between each card, (3 or 4mm). If the cards are too wide take them out and trim them.
- Punch three holes right through the rings, (*as shown above*), and attach three threads. If you tie a matchstick or paper clip to each thread they will be easier to remove. Tie the threads together at least half a metre above the zoetrope.
- To operate, spin the zoetrope and look at the picture cards THROUGH the spaces between the cards. You should see your animation. If its too dark try to stand under a light.



This is an opportunity to make use of IT skills. Dividing a movement into nine equal stages is much easier when a computer is used. I rotated this arrow 40° each time to give 1 whole revolution