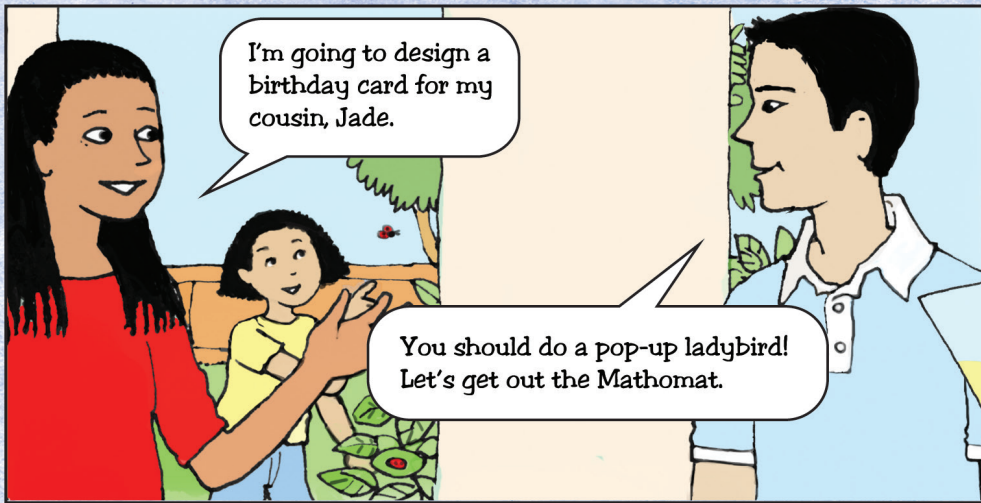
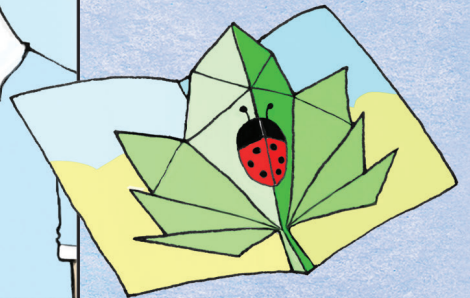


Be a paper engineer

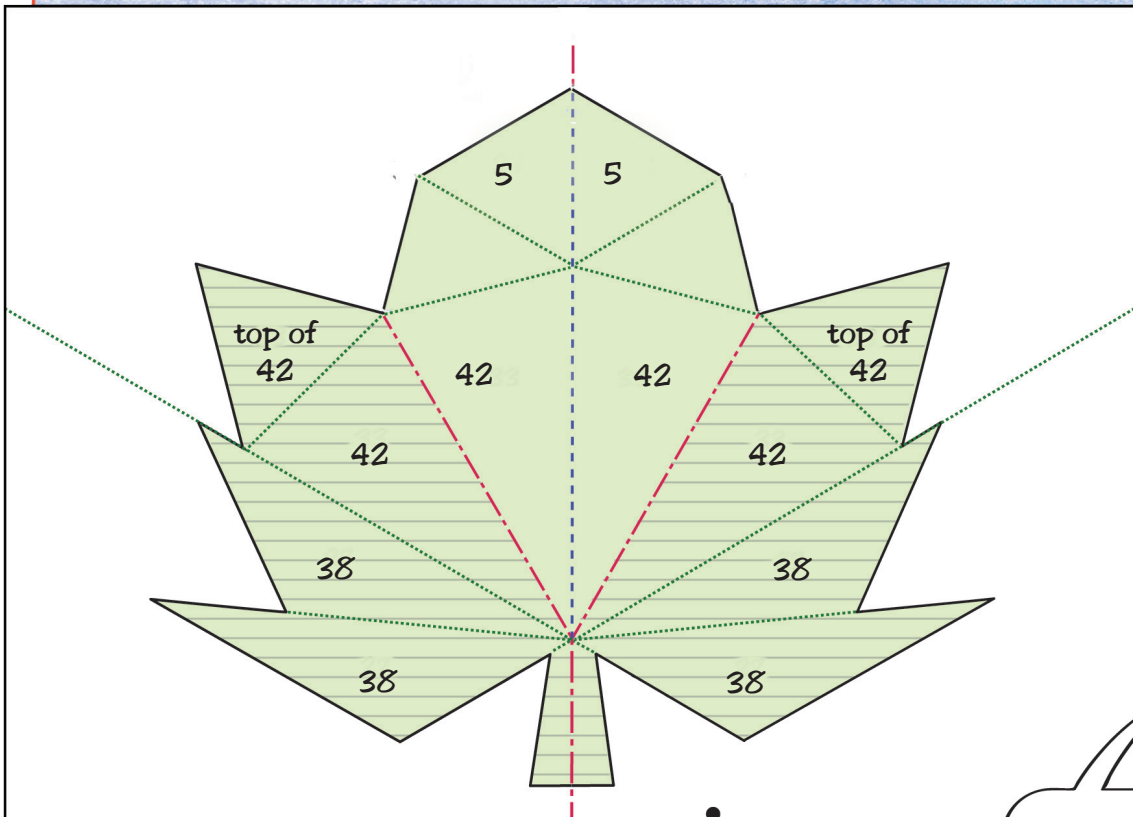
Use mathematics to make models of real-life objects using Mathomat.



There are many ways to create pop-ups... experiment and make notes on what works.



Erin's design is made with a symmetrical drawing of a leaf, using triangles on the Mathomat V7. Sometimes only the top sections of shape 42 are used.



Planning is important. Erin draws her design then tests it by cutting it out. She folds the top section along the centre line as a hill fold and makes the valley folds as shown.

The flat areas are glued to the birthday card, which must be wide enough to hide the folded leaf shape.

She adds a cut out ladybird.



The pop-up must be hidden when the card is closed. Can you mark where the top point would sit when the card is folded in Erin's design? Test it to see if you're correct.

KEY

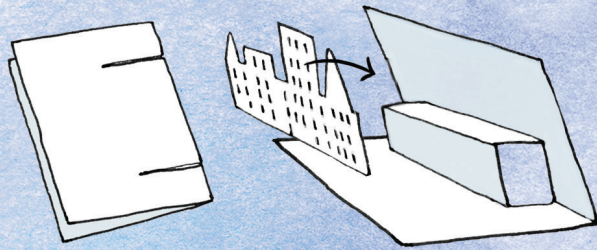
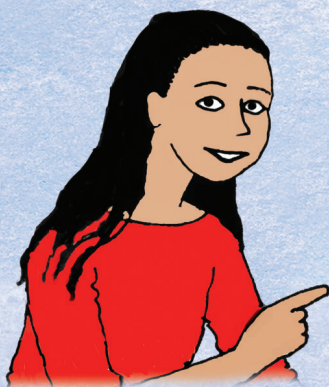
- area to be glued
- valley fold
- hill fold
- construction lines
- cut lines



The lady bird can be drawn on, or added afterwards. It's symmetrical too.

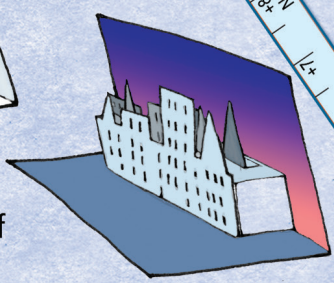
The design can be scaled to make a bigger card.

Design your own 'fold-outs'



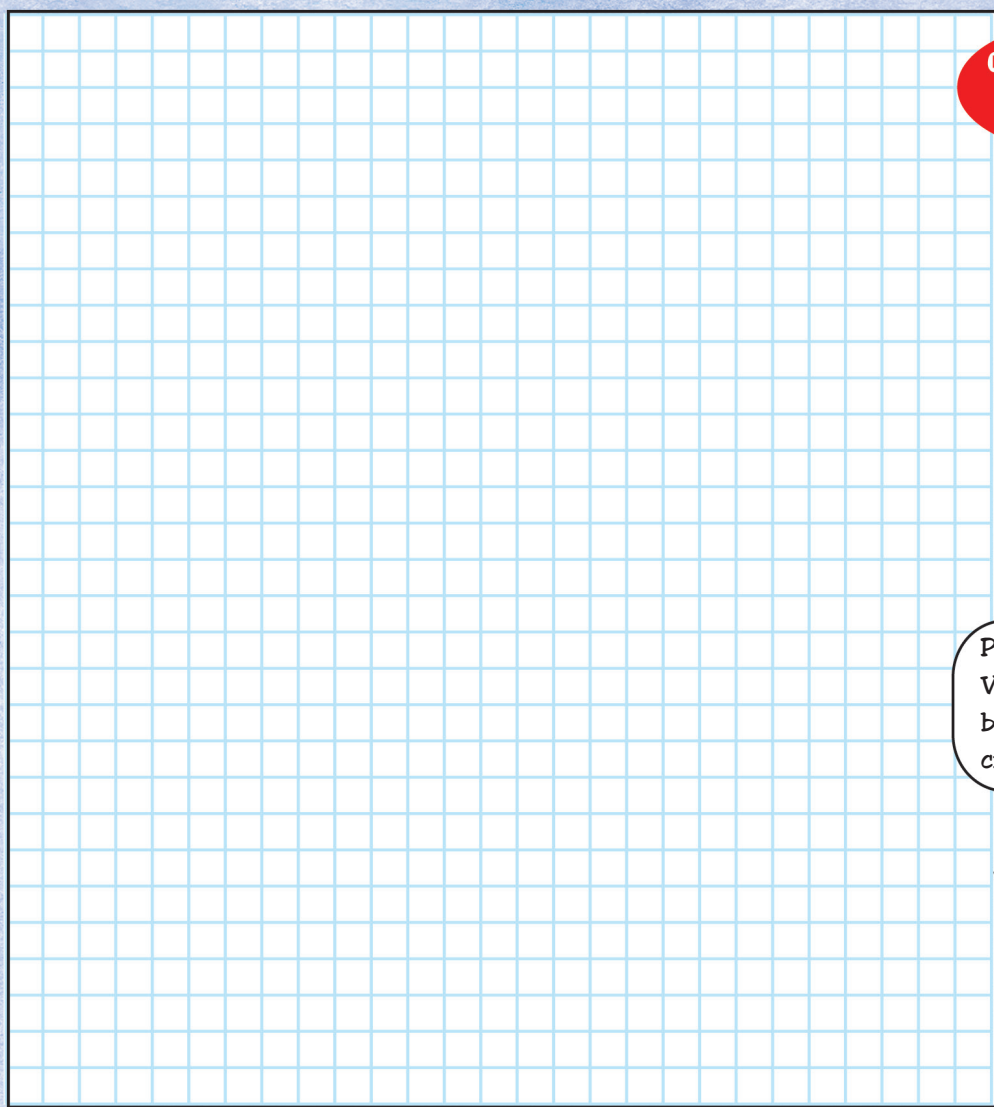
Start with cutting perpendicular slits into a folded sheet of paper. You could add a layer of sky scrapers (don't forget the tabs). How tall can they be?

Use the perpendicular guide on the Mathomat.

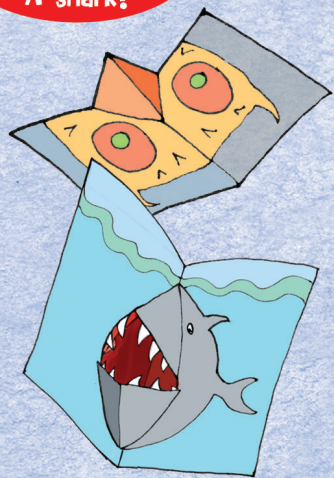


Can you predict what shapes you will get with folding different angles?

Experiment with angles



Can you create a beak? A shark?



Pop ups were popular in Victorian times and have become so again. They build creative problem solving skills.



Test out ideas. Draw your design. Use the key to show folds and cut lines.