

Lesson 9

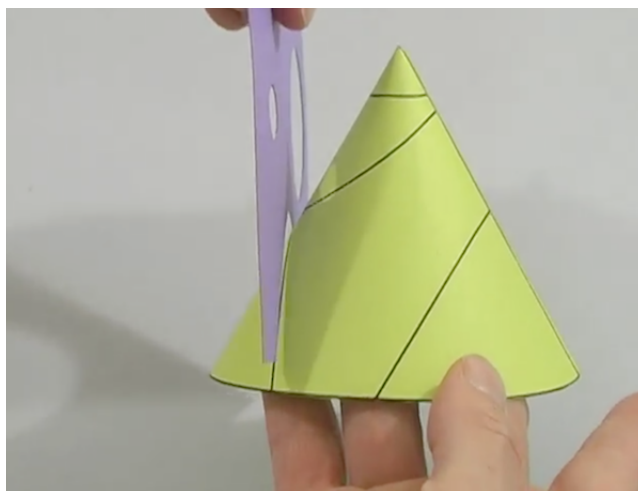
GCSE and Preparatory A-Level Mathematics Conic Sections (Simultaneous Equations IV)

9.1 A Conic Sections Model

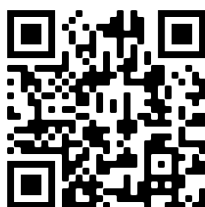
The ancient Greek mathematicians studied conic sections culminating around 200 BC with Apollonius of Perga's systematic work on their properties. The mathematical interest in conic sections arises because four seemingly different two dimensional shapes, the circle, ellipse, parabola and hyperbola, are unexpectedly connected by a single three dimensional object, a cone.

It is possible to buy a wooden cone that can be taken apart like a three dimensional jig-saw puzzle to show the four possible conic sections. Often sold as an Appolonius Cone, the 22 cm high cone costs £90, and the 50 cm version is £440 (Prices correct as of January 2025).

Rather than spend money, we can build our own version for negligible expense. The two minute instruction video is from the excellent book, “Amazing Math Projects You Can Build Yourself” (Available on Amazon, £10).



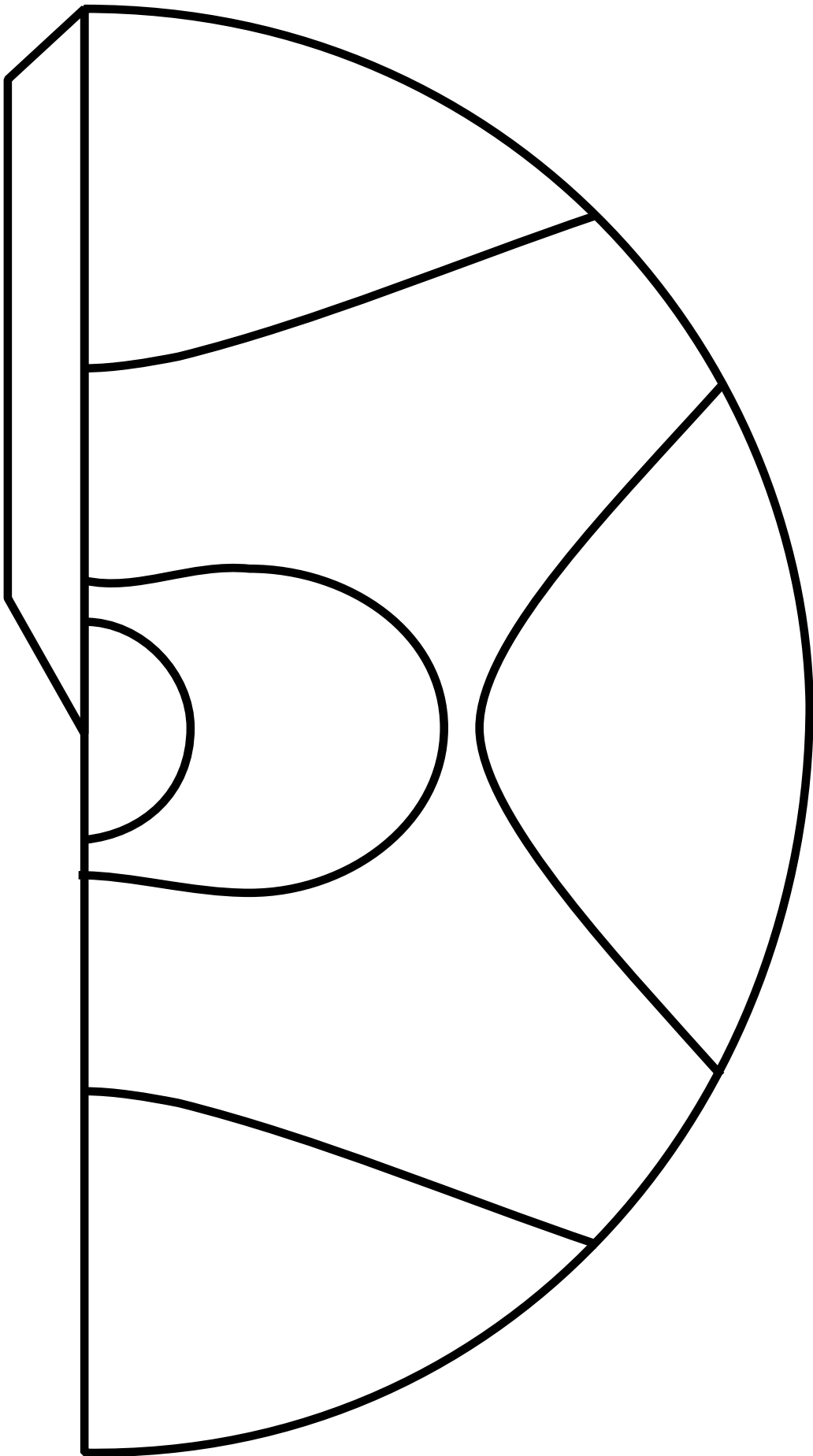
Teaching Video : <http://www.NumberWonder.co.uk/v9091/9.mp4>

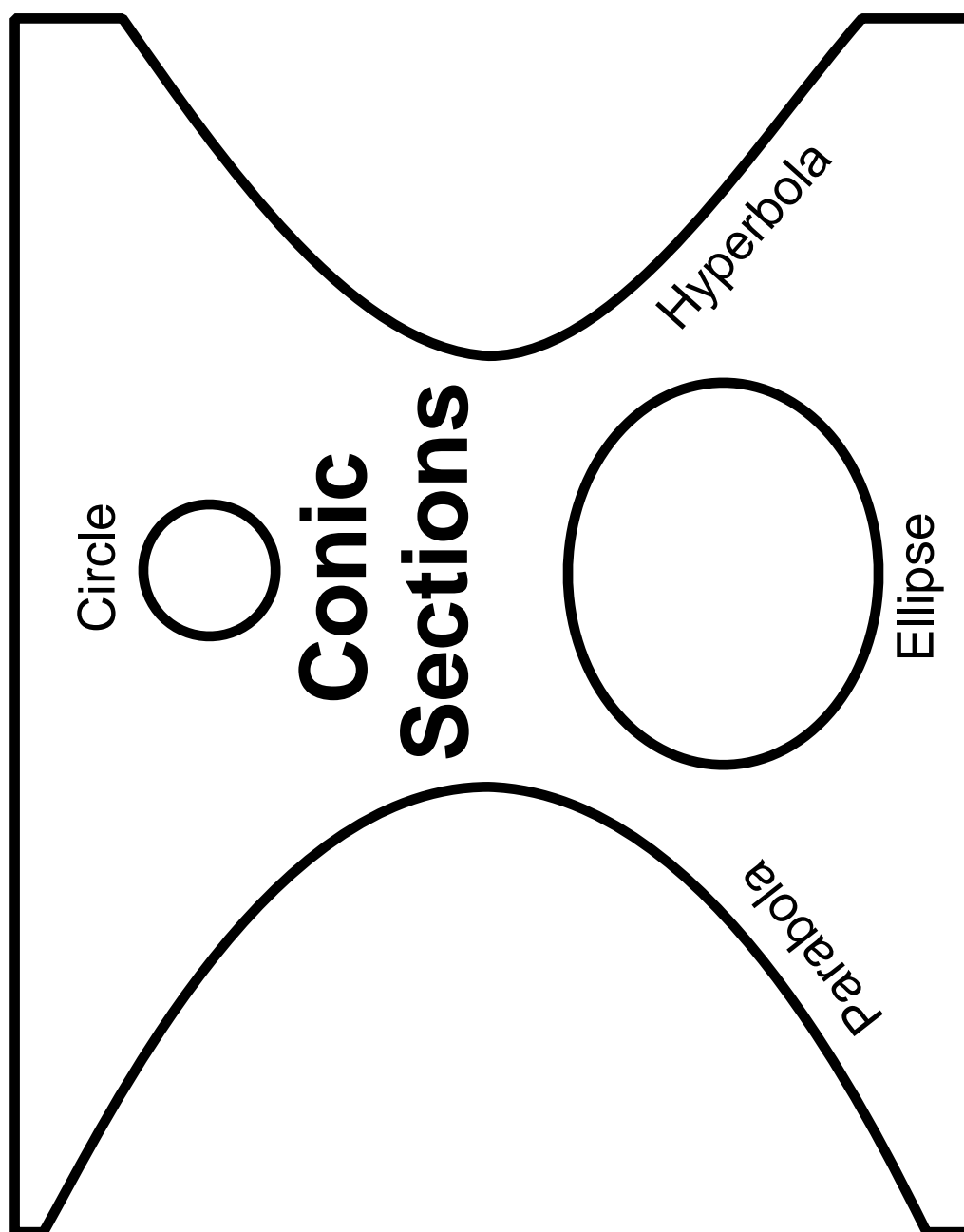


Over the page are the templates to cut out or trace onto paper from a computer screen and so make the model.

There will be a prize for the best.

(Send in a photograph).





This document is a part of a **Mathematics Community Outreach Project** initiated by Shrewsbury School

It may be freely duplicated and distributed, unaltered, for non-profit educational use

In October 2020, Shrewsbury School was voted "**Independent School of the Year 2020**"

© 2025 Number Wonder

Teachers may obtain detailed worked solutions to the exercises by email from MHHShrewsbury@Gmail.com