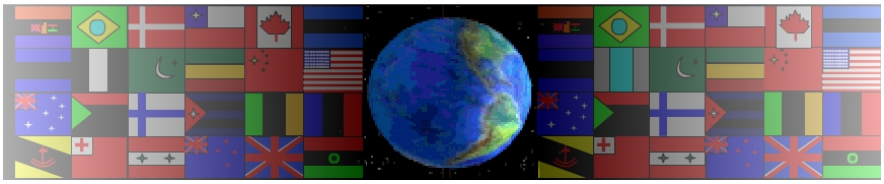
# ANOTHER MECHANICAL TOY





On behalf of The World Association of Technology Teachers

# W.A.T.T.

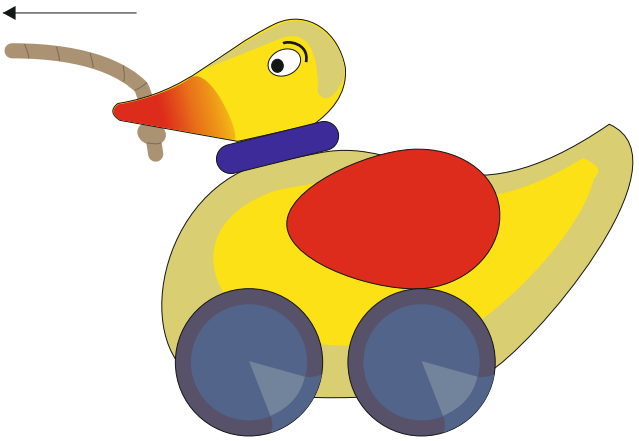


World Association of Technology Teachers

This exercise can be printed and used by teachers and students. It is recommended that you view the website (www.technologystudent.com) before attempting the design sheet .

# ANOTHER MECHANICAL TOY

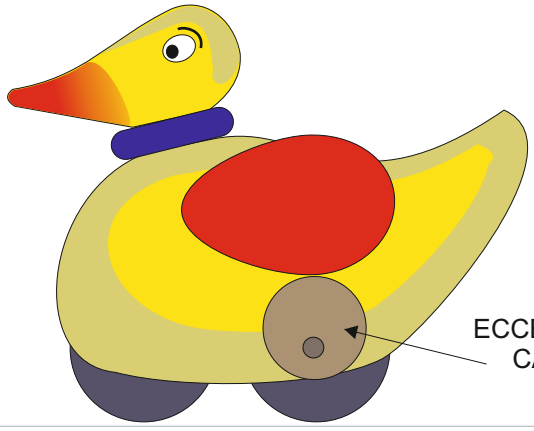




As the mechanical duck is pulled forward the wings flap upwards and downwards. This is achieved through the use of a eccentric cam fixed to each axle. The diagrams below show how the mechanism works.

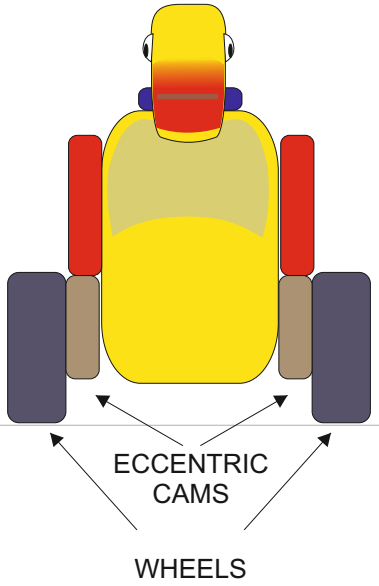
As the wheels and axle rotate the eccentric cams also rotate. As the eccentric cams move upwards they also push the wings upwards. As the eccentric cam rotate downwards the wings drop down. The faster the toy is pulled forward the faster the wings flap.

SIDE VIEW

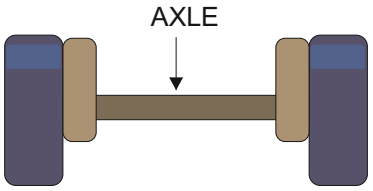



SIDE WHEELS HAVE BEEN REMOVED SO THAT THE ECCENTRIC CAMS CAN BE SEEN

FRONT VIEW




1. What materials could be used to manufacture the body of the duck / mechanical toy ?

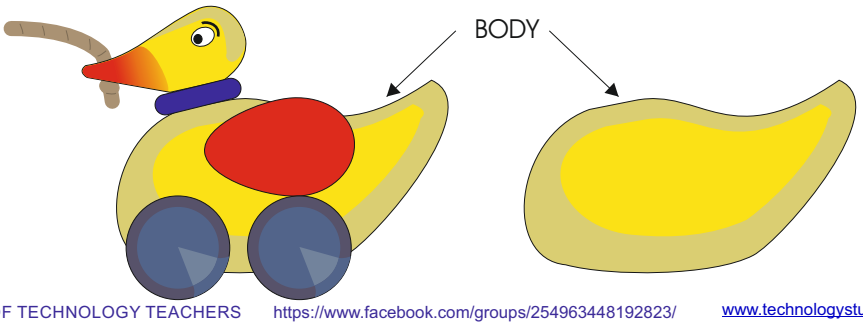



2. What are the properties of the material you have chosen ?

3. Name an alternative material that could be used to manufacture the body of the duck / mechanical toy ?

4. What are the properties of the alternative material you have chosen ?

5. A manufacturer is hoping to make hundreds of the mechanical duck from a plastic material using 'blow' moulding as the process.






5A. Name a suitable material for use in the process blow moulding: _____

5B. Why have you chosen this material? _____

Diagrams representing the blow moulding process are seen below. Add notes to diagram 1 and 2 to explain how the process works.

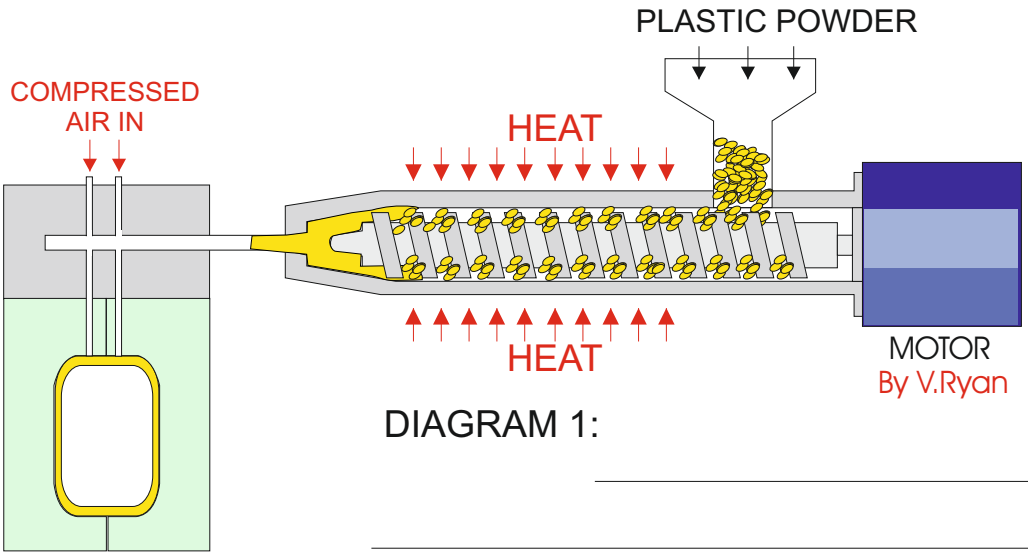



DIAGRAM 1:

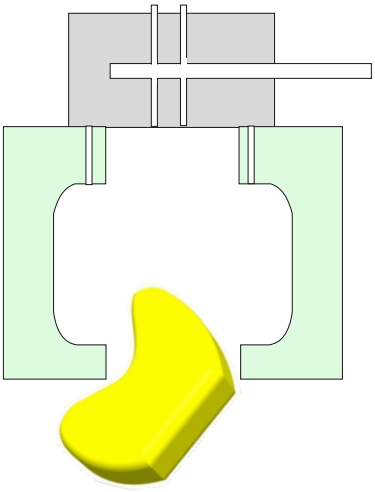


DIAGRAM 2: