

Low-Cost Experiments in STEM Education



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The Wonderful World of Tops!

Accessible to all age groups, all abilities and all budgets

There is enormous potential in spinning tops in education.

Tops have been providing fun for generations, readily available in toy shops or online, and can be produced from natural products (such as acorns!).

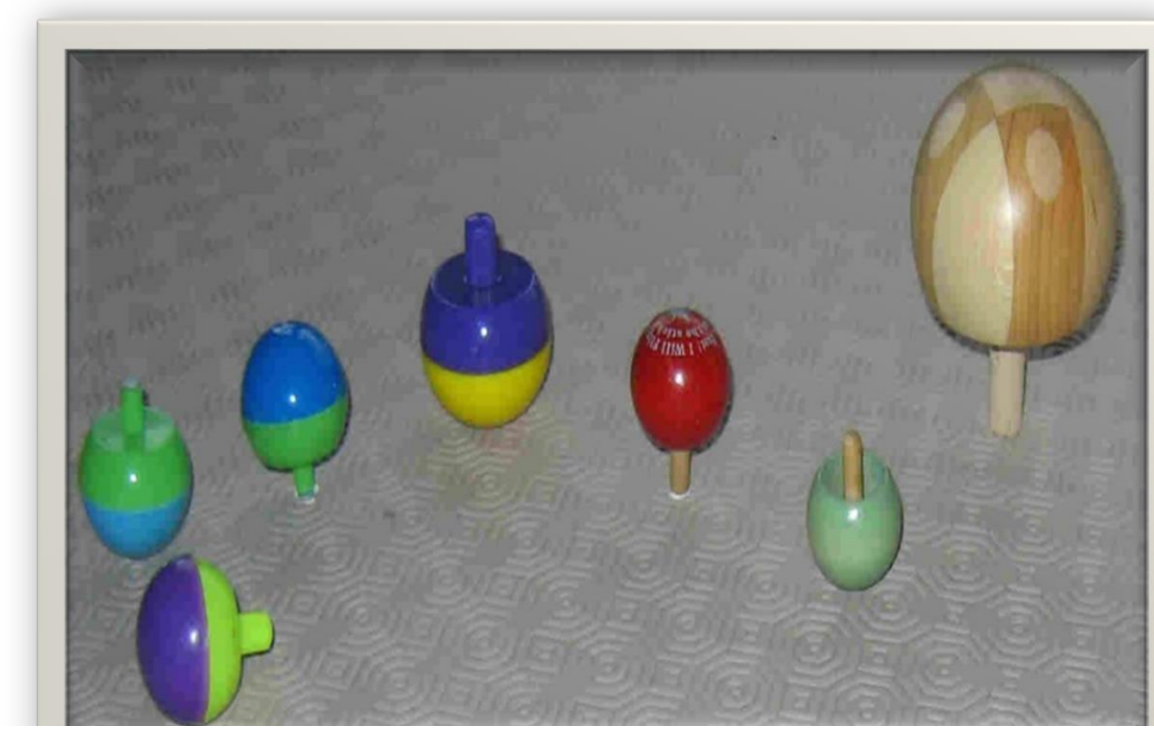
Despite this they are under-used, if used at all, for educational purposes.



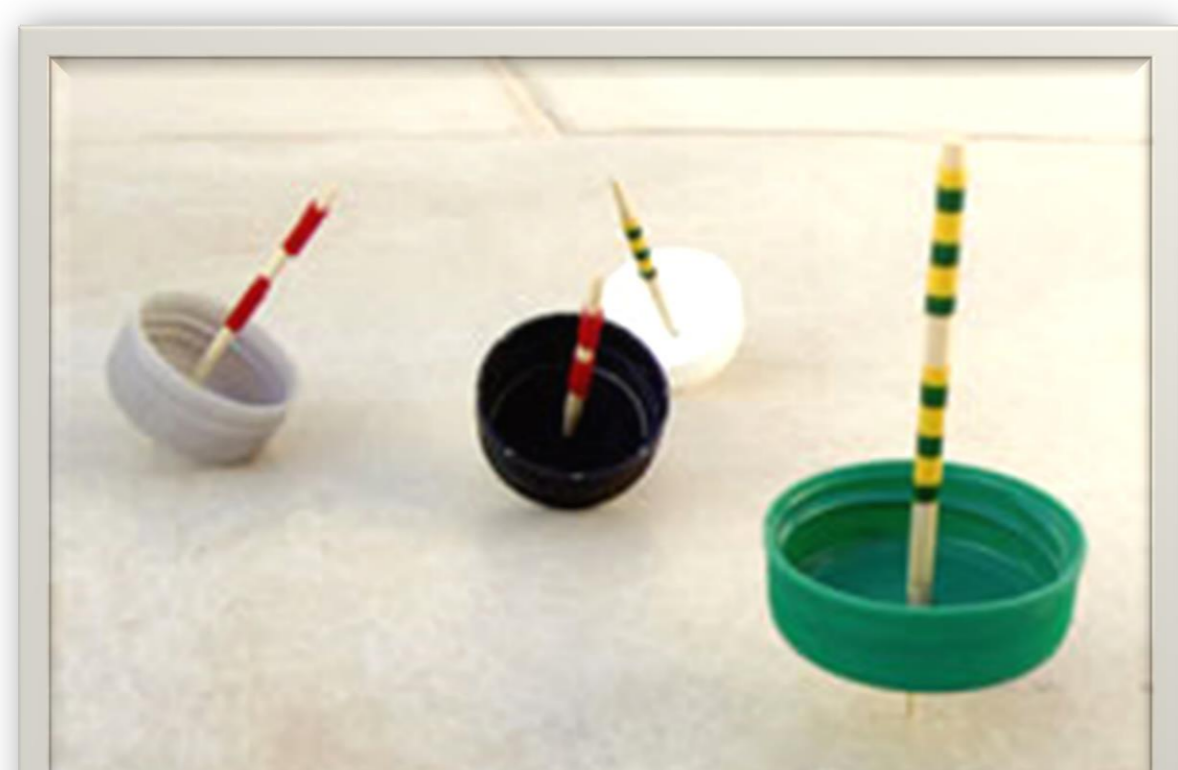
Coloured card with a central hole containing a marble can be used to demonstrate colour addition.



A paper clip has been bent into a circle leaving a 58 degree (1 radian) gap to minimise any wobble.



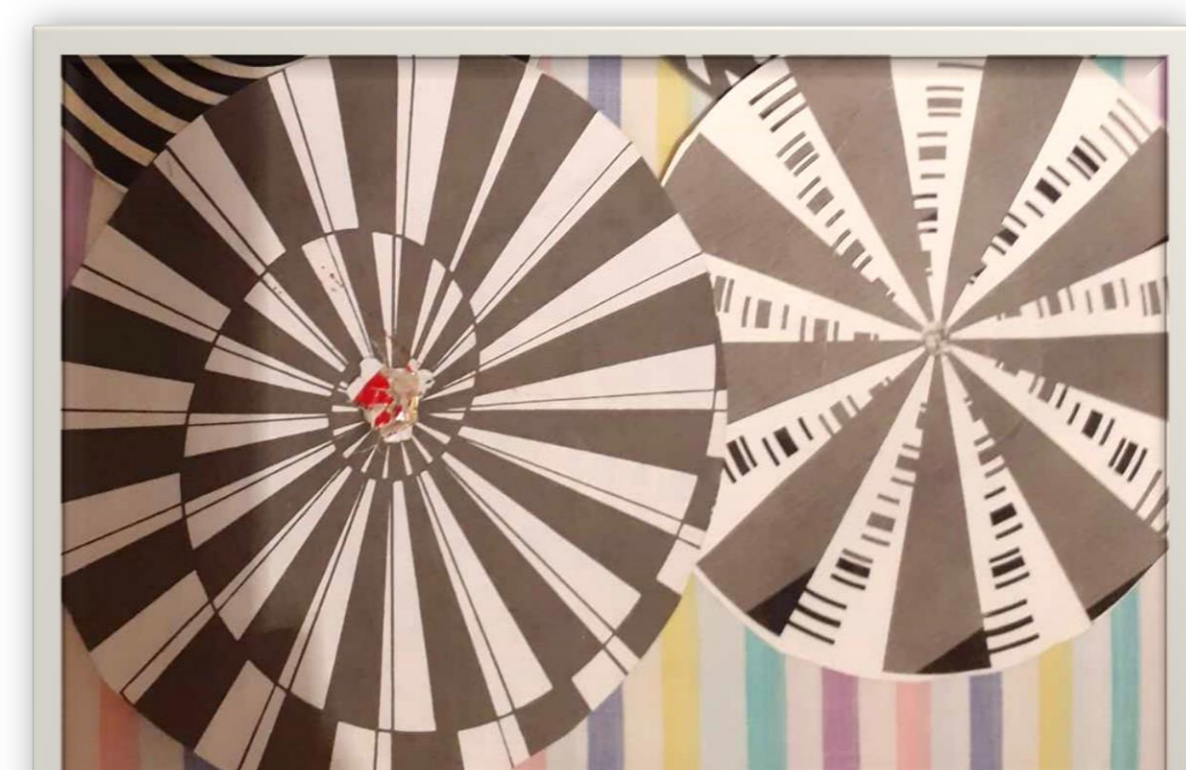
Tippee Tops - when spun, these tops invert themselves to spin on their stems; angular momentum magic.



These tops are made from sticks (with rounded ends) and milk bottle tops. Best results if the hole in the top is in the exact centre!



Paper tops are made by wrapping strips of paper around a pencil.



A rotating Blenham's disc appears to produce colour. This is due to retentivity of different cones in the retina.

Spinning tops can enhance teaching across topics and stages of learning, from basic energy transfer to conservation of momentum, appropriate from primary school science to studies of neutron star precession. The wonders of tops will appeal to all!