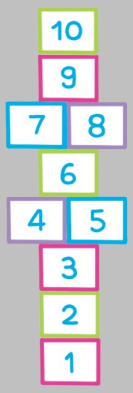

LIVING IN THE PAST. TOYS

This is a great little home made toy for all ages and it's fun seeing all the patterns that emerge when spinning.

Draw a circle on a piece of card, around 7cm in diameter. It might be interesting to see if a smaller spinning top or a larger spinning top is better? You could draw around a mug to create a perfect circle.

Cut the circle out carefully with scissors.

Draw a pattern on the card with felt tip pens. Patterns that start at the centre of the cardboard and work out to the edge will look really good when the top is spinning. The more creative you are, the more dramatic the top will look when spinning. Add some sequins to make it sparkle.

Take your skewer or small pencil and poke it through the centre of the circle of card so the point sticks out by a couple of centimetres.
***TOP TIP: to help find the centre of your circle cut a circle out and fold in half, turn 180 degrees and fold again, where the folds meet in the middle is the centre of your spinning top. You can mark the centre by asking an adult to push a pencil point or skewer through. Now use your template to make more circles with the centre in place.**

When complete and assembled use a small piece of blue tac to hold the skewer or pencil in place.

It will work best on a flat surface, but remember it is a pencil so will leave a mark. Use it outside or on newspaper if you use it indoors.

You will need:

A piece of cardboard

A stick – a skewer, a cocktail stick or maybe a small pencil

Scissors, Felt tip pens , blue tac.

Fun facts and more on page 2.

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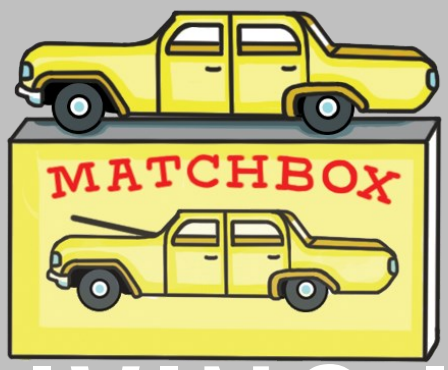

LIVING IN THE PAST. TOYS

FUN FACTS

What's the science behind spinning tops? What makes a spinning top spin? Forces!

When we use our fingers to set a top spinning, we are giving the top a force that converts its potential (stored) energy into kinetic energy (the energy of motion).

The law of the conservation of angular momentum states that if there are no other influences, something that is spinning will keep on spinning.

When the spinning top is spinning, it's balancing on the fine point of the stick or pencil. This tiny tip minimises the amount of friction generated by its contact with the surface it is spinning on.

With only a tiny amount a friction influencing the spinning top it keeps on spinning for much longer.

After a while, friction does slow the spinning. The spinning top will start to wobble and eventually stop spinning on the axis of the tooth pick and it will fall to one side. This change in orientation is called precession.

When the spinning top beings to tip, the force of gravity exerts a torque on the top. This makes it swing out more. The slower the top spins, the faster it tips. This is why you see it lurch outwards just as friction finally makes the top stop spinning.

Try these patterns to see some great illusions!

Victorian children, especially those who came from poor backgrounds, did not have the money to spend on toys. However they could make simple toys at home. One of the most popular toys during Victorian times was a spinning top.

Spinning top experiments

Give your spinning top a twist and see how it spins. What do you notice about how the spinning tops work?

Here are some questions you might like to consider

Which size spinning top works best?

How does your design look as the top spins?

Does the way you use your hand to spin the top make a difference to how well it spins?

What do you think makes the tops spin and not fall over?

What makes them stop spinning?

What happens if the top of the stick or pencil gets blunt?

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