

**PLAYFUL SCENCE    David Featonby   Deputy Chair Science on Stage Europe**

**It's not magic it's science you don't see !**

**See them on my stall!!**

**MIRRORS**

The simple production of an image in a plane mirror can be converted into magic if the observer does not see what is happening, either misunderstanding the image formation or simply not seeing the mirror itself. The image is a replica of the objects in front of the mirror

**MIRROR WRITING** Observing the different symmetries of the letters gives an understanding of these changes in the mirror.

A picture can be changed by creating the image of part of the object



**MIRROR BOXES**



A box can be apparently empty when all you see is the empty half twice

Magic boxes from the toy shop

Make your own with an A4 paper box and suitably sized mirror



**Mirror boxes with two mirrors**

Make your own with an A4 paper box.

Here the mirrors can be moved in front of the head of the volunteer



## MIRRORS IN CYLINDERS OR SIMILAR

The mirror down the centre of the glass or tube enables the magician to hid items behind and then reveal them with a quick rotation



**BIG MIRRORS** Large Perspex mirrors can be used to create the illusion of flying. The "second" leg is simply the image of the first (Can you see the mirror?) Or try using a shop window !!



## BODYLESS HEAD



This is an ideal display for a science fayre. The table is constructed with a large mirror between two non-adjacent legs, and the top has a hole (for someone's head) just behind the mirror, so that the body is hidden, whilst the head is seen protruding from the hole in the complete table.



Thanks to these twins for this demonstration

## MAGNETS

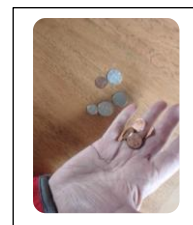
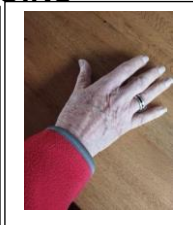
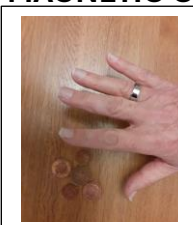
The recently developed neodymium magnets (very strong, take CARE !!!) enable several tricks to be performed and demonstrate the basic properties of magnetism. It is useful to ask which property is best displayed in each trick. ..different material's magnetic properties, magnetism a non contact force, magnetism passing through non magnetic materials etc

## CUBE EXPLOSION

The (hollow) steel and plastic dice show the difference between magnetic and non-magnetic materials



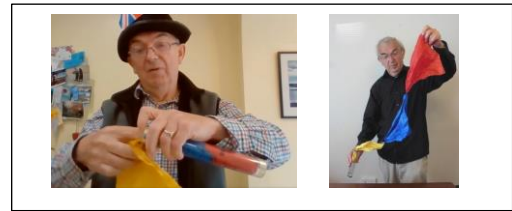
## MAGNETIC COINS



Some coins are made of magnetic material ...others are not ! Many have recently changed...so the magnetic ones can be mysteriously removed . Note the ring on my finger.

## JOINING SCARVES

Three apparently separate scarves join themselves in a tube !! Secret : Small neodymium magnets



## Having two sets of similar coins enable exchanges

### COIN IN A BOTTLE

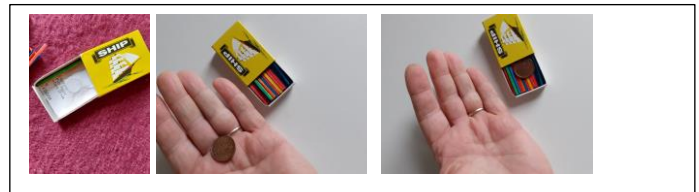
Two coins not one ! with the help of magnetic rings or hidden magnets. The secret coin is held in the bottle with the ring magnet , and the coin on the lid is removed with the magnet behind the gold ring



## MATCH BOX MYSTERY

A match box is placed on a coin held in the hand . The coin disappears and reappears again inside the match box with the matches .

An example of two coin deception



## COLOURED DISCS TRICK

Using different strength magnets enables the free coloured discs to be exchanged , so main disc appears to change colour



The magician gives the illusion of a ring hooked on a shoe lace with the help of a small hidden magnet inside the lace



“MAGIC” is used nowadays for anything we don’t quite understand , “magic cleaner” etc ..a good exercise for children is to find as many products which use such language (“magic”) in their labelling,

Further so called “magic” experiments can be seen at our SonS Webinars , my facebook “What Happens Next Experiments “ pages and also by checking out the latest SonS booklet “ The Science behind Magic “

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