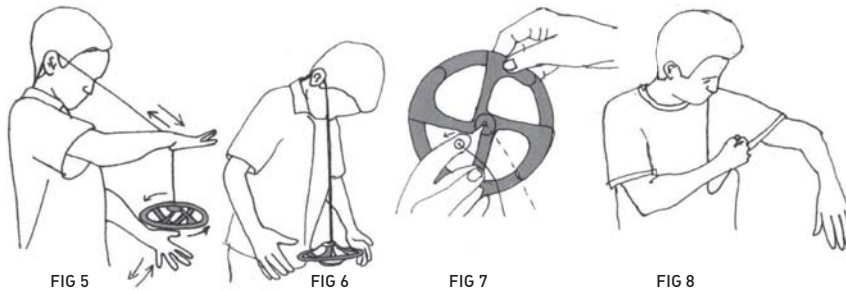


Technique 2

Lean in and tilt your head forward and slowly lower your hands so the UFO is simply hanging from your ear (Figure 6). Move your hands slowly above and below to show it is not connected. At this point turn your whole body around 360 degrees to show that the UFO can float all the way round you.

The finale

Once you have floated and landed/ caught the UFO a few times, secretly remove the putty from the UFO and stick it somewhere it cannot be seen. Attaching the putty under your arm works well (Figure 8), so your hands are completely free. It can be easily re-attached if you want to do the illusion again later. Explain to the spectators that it can also be flown like a disc, and throw the UFO like a Frisbee for someone to catch. This will convince them there are no threads attached! You know that no matter how hard they try they will not be able to make it fly!



Storing the Threads

Keep the unused threads on the posts in the packaging. The threads can be used over and over again – if handled with care! Use one thread at a time. When you are finished using it, stick one end to a wall and allow the other end to hang vertically. This will help untangle the threads. If you have to move location, then the used thread can be carefully wound around the posts.

The thick practice thread can be separated into three thinner threads for invisible use. This is best done by holding up the ends to a white piece of paper so threads can be separated.



Suitable for children aged 6+. Not suitable for children under 3 years old due to small parts and small ball (putty and glue), which may represent a choking hazard. Monofilament thread may represent a strangulation hazard. Adult supervision required.

Do not allow the putty included to come into contact with mouth or eyes. Wash hands after use. Keep small children away from putty.

Do not allow tensioned thread to come close to or in contact with eyes. Do not play with the toy for prolonged periods of time, as this may result in tightening or wearing of body joints (e.g. neck) and prolonged scratching of the monofilament on skin. Do not wrap the monofilament around fingers as this may restrict circulation of blood. Do not twist monofilaments together to form a strengthened thread. A strengthened thread may increase the risk of strangulation.

Keep the thread & toy away from fire. Please read & retain these instructions for future reference.

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My Mystery UFO

science museum uk

What does it do?

The mysterious flying saucer spins rapidly while appearing to float in mid air.

How does it work?

A thin string of para-aramid synthetic fibre (usually known by its trade name Kevlar®) is strung between the UFO and the operator. The operator appears to control the levitation of the UFO with his hands while it is suspended by the unseen string.

Did you know?

The invisible string that holds your UFO aloft is known as a para-aramid, or "aromatic polymer." A polymer is simply a large molecule and the long, thin molecules in the UFO's string are essentially similar to the protein molecules in your body. Proteins have many functions, including carrying the genetic code as DNA.

"Aromatic" refers to the very strong way in which the polymers in the UFO string bond together. Ring shapes in the polymers force electrons to orbit two atomic nuclei at once, creating especially strong bonds. The result is a string said to be five times stronger than steel of the same weight.

Try it out

To really pull off the illusion well takes a bit of practice and showmanship. Imagine how you might actually lift the UFO without the string. Could you project mental energy through your hands to lift it? Would it seem heavy or light?

Fact files

Kevlar® is one of a class of synthetic fibres developed by the DuPont company starting in the 1930s. The first was nylon, which quickly proved to be better for many applications than natural fibres such as cotton, wool, or silk. Nylon as a substitute for silk was especially important to the Allies during World War II because silk supplies from Asia were cut off by the Axis countries, and parachutes were traditionally made from silk.

Kevlar® is even stronger and lighter than nylon, and it is used today in all sorts of things, from bicycle tyres to spacecraft. Perhaps the most well known use of Kevlar® is for bullet-proof vests. Although they are often called Kevlar® vests, similar para-aramids such as Twaron® serve the same function. Of course nothing is entirely bullet proof, but the characteristics of these para-aramids allows them to quickly absorb the energy of a bullet and spread it out.

National Curriculum coverage

The Mystery UFO can help students think about forces, part of the Key Stages 1 & 2 science curriculum.

In the Science Museum

You can learn more about the uses of Kevlar® and many other remarkable materials in the Science Museum's Challenge of Materials Gallery on the first floor.

My Mystery UFO

Instructions.

To get the most from this product, it is recommended to use the My Mystery UFO Tips & Tricks DVD.

The Secret

My Mystery UFO has three incredibly thin Kevlar® threads connecting the UFO to the player. The threads are so thin they are difficult for anyone to see. My Mystery UFO comes with 8 posts with thread wrapped around each, with sticky putty attached to each end of the threads. You will notice that on one of the posts the thread is thicker. Use this to practice with as it is stronger than the other threads, and is made up of many Kevlar® threads woven together.

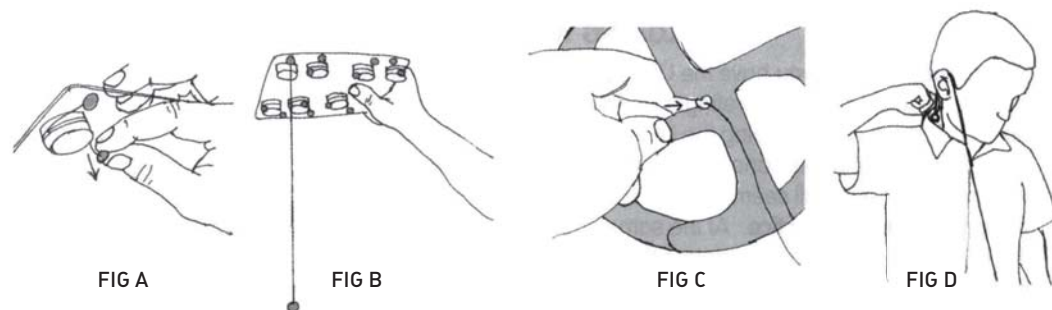
Set Up

Turn the thread post sheet upside down and carefully pull off one piece of putty from the top of the post as shown in Figure A. The thread will unwind and hang straight down with putty dangling as shown in Figure B. Place the thread through the slot in the top of the UFO and firmly stick the putty underneath the top of the UFO as shown in Figure C. Remove the other piece of putty from the base of the post. Pull this over your ear, and attach the putty to the inside of the back of your shirt by firmly smearing the putty on to your inner collar.

The UFO should hang down to near your belly button area. If it hangs too low, adjust by either re-positioning on your body, or shortening the string by winding it up in to the putty. You are now ready to amaze people.

My Mystery UFO works best indoors and in dim lighting when the threads are almost impossible to see. It is best to wear a dark shirt, preferably with a pattern on it. Try to avoid bright lights and white walls, which may highlight the strings.

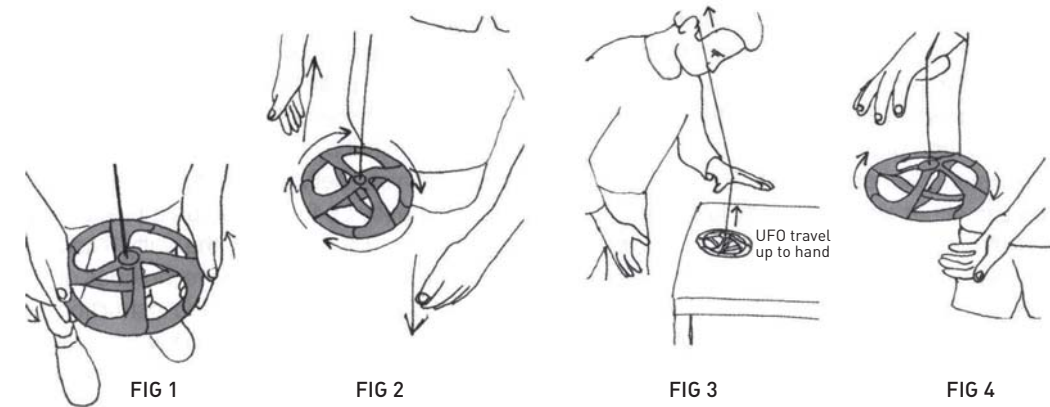
The key is to practise as much as possible before showing this illusion to your family and friends. It is recommended that you practice with the thicker thread to prevent breaking the thin ones as you learn techniques.



Start it Spinning

For a much more believable scenario it will look much better if the UFO is spinning as it flies. Lean forward so the UFO hangs freely and hold it in both hands as shown in Figure 1. Rapidly spin the UFO by flipping your hands in opposite directions as shown in Figure 2. The faster and smoother the spin the better it will look and the longer it will spin for. It is recommended that when spinning slows down you catch the UFO or 'land' it on a table. If you have difficulty in obtaining a fast smooth spin, first get it spinning on a table and then slowly lift your hand. The UFO will float up to your hand as shown in Figure 3.

Once you have spun the UFO in one direction for a while, spin the other way to minimize twisting of the threads.



Flying Your UFO

Once you have mastered spinning the UFO, you need to practice how to make its flight look as realistic as possible. Below are some basic techniques, for more detailed tips & tricks please see the My Mystery UFO Tips & Tricks DVD.

Technique 1.

Once spinning smoothly, place the thread between your thumb and forefinger, so you can guide the flight of the UFO. Do not grab the thread but allow it to move up and down smoothly between thumb and forefinger. See Figures 3 and 4. The key element is to give a convincing performance. Practice in a mirror to perfect your individual technique. Try:

- Slowly wiggling your fingers to give a magical appearance while it flies
- Moving your hand along the string is very important as this indicates that the UFO is not connected to your hand. It is important to become good at this.
- Move your other hand slowly up and down beneath the UFO, again to 'show' people there is nothing connecting it to the ground and it is indeed floating (Figure 5). For a bit of fun, explain to people that it is floating due to magnetism or static electricity build-up on your hands.