EXPERIMENT MANUAL

SCIENCE OR MAGIC?

THAMES & KOSMOS

WARNING — Science Education Set. This set contains chemicals and/or parts that may be harmful if misused. Read cautions on individual containers and in manual carefully. Not to be used by children except under adult supervision.

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Dear Parents,

This magic-and-science kit gives your child the opportunity to learn about the laws of physics in a fun way. It includes amazing magic tricks that are based on physical science phenomena, and surprising experiments that make great magic tricks.

Please encourage your child to actually perform these magic tricks. Assist him or her in preparing the experiments, especially the more difficult preparation steps, such as tying off balloons or filling water balloons. Make the additionally required items available to your child, such as glue, adhesive tape, scissors, and bowl.

Support your child by helping them practice the magic tricks and also by acting as the magician's apprentice during the magic show. Your child will soon learn the skills and acquire the dexterity it takes to perform flawless magic tricks. But above all: Give your child a stage and an audience to put on a fantastic, memorable magic show!

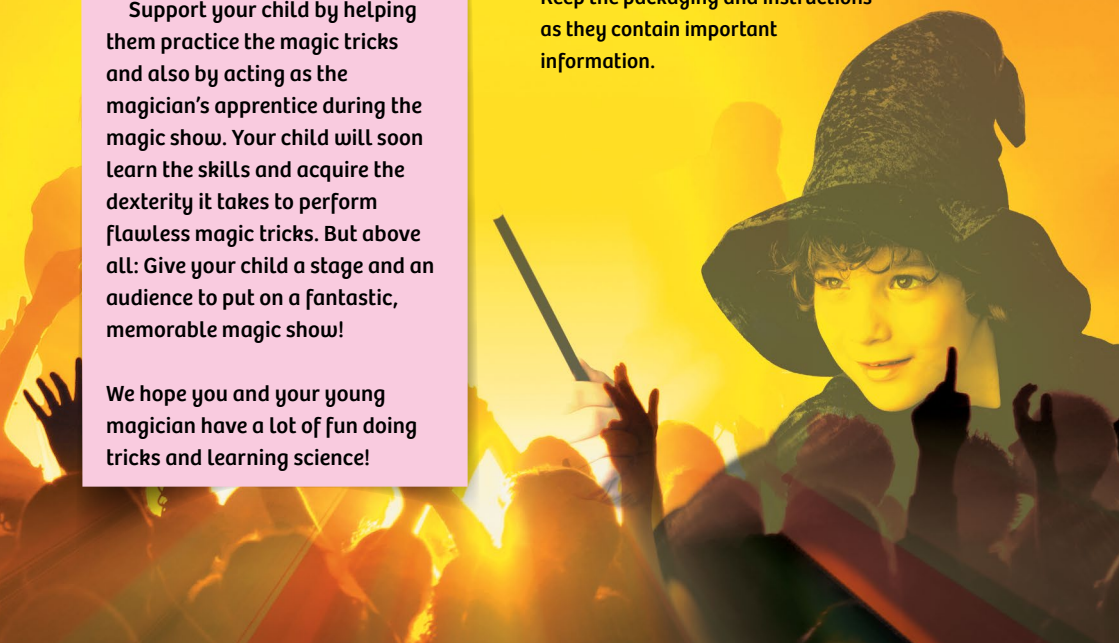
We hope you and your young magician have a lot of fun doing tricks and learning science!

⚠ WARNING:

CHOKING HAZARD — Children under 8 yrs. can choke or suffocate on uninflated or broken balloons. Adult supervision required. Keep uninflated balloons from children. Discard broken balloons at once.

WARNING! Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled. Strangulation hazard — long cords may become wrapped around the neck.
This kit contains functional sharp edges or points (the thumbtacks and the resulting homemade nail cushion). Do not injure yourself! In particular, Trick 8 requires prudent use of the nail cushion.
Kit contains weak magnets. Do not put the magnets near televisions, computers, computer disks, cassette tapes, video tapes, cell phones, laptops or credit cards: The data stored may be damaged and lost!

Keep the packaging and instructions as they contain important information.



A trick to help you hit the ground running

Heavy as a feather

A feather falls to the ground just as quickly as a heavy magnet.

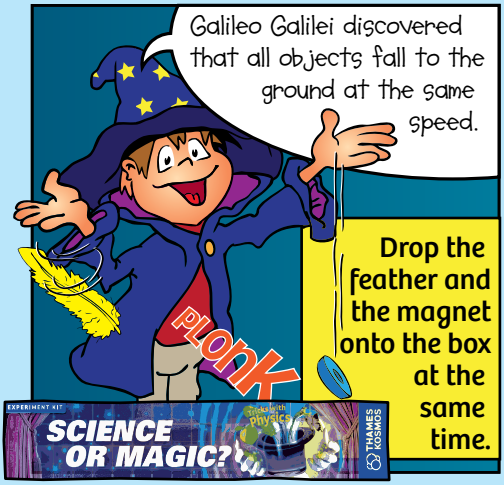
YOU WILL NEED

› **Feather, blue magnet, kit's packaging box**

PREPARATION

Lay the box on the table with the feather and the magnet on top of it.

PERFORMANCE



SCIENCE OR MAGIC ?

SCIENCE! In fact, all objects do fall at the same speed as long as they don't experience different degrees of resistance from the air! If the feather and the magnet are both lying on the box, they experience no resistance from the air and drop at the same speed.

GOOD TO KNOW! If you are missing any parts, please contact Thames & Kosmos customer service.

What's in your magic kit:

Any materials not included in the kit are indicated in italic script under the "You Will Need" heading.

Checklist: Find – Inspect – Check off

✔	No.	Description	Qty.	Item No.
❍	1	Die-cut sheet	1	712389
❍	2	Yellow paper	2	712393
❍	3	Red paper	1	712394
	4	Pouch with		774132
❍		Large balloons	2	
❍		Small balloons (Water balloons)	4	
❍	5	String	1	712390
❍	6	Funnel	1	000410
❍	7	Drinking straws	8	707448
❍	8	Narrow straw	1	712395
❍	9	Water bag	1	708087
❍	10	Magic cup (small)	2	708092
❍	11	Box of thumbtacks	1	712392
❍	12	Feather	1	708060

✔	No.	Description	Qty.	Item No.
	13	Magnet set:		712396
❍		Magnet stand	1	
❍		Yellow magnet	1	
❍		Blue magnet	1	
❍	14	Clay	1	708168
❍	15	Magic wand (wooden)	1	708482
❍	16	Cup (large)	2	702810
❍	17	Magic lid	1	708093
❍	18	Paper clips	5	263132
❍	19	String (cord)	1	712391
❍	20	Cardboard sheet (with 6 invitation cards, door sign and box office/ stage podium)	1	712388

››› TABLE OF CONTENTS

TIP!
You will find more information here: "Check It Out"
Pages 20, 21, 36, 37, and 48.

Use the measuring tape for measuring things (such as lengths of string).

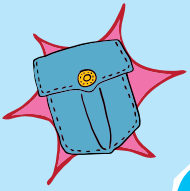
The numbers on the die-cut sheet stand for the number of the trick that uses those pieces. Only remove the piece that you will need for the trick you're performing at that moment. If you are returning to your magic tricks after a long break, you can take a look here and easily match up the die-cut pieces with the tricks that use them.

Dear Apprentice Magician,

A magician knows no limits. He can make things disappear, overcome the laws of gravity, or perform real miracles with everyday objects, all without any apparent effort. In reality, of course, there is no wizardry in this. Behind all magic you will find clever tricks, simple laws of nature, and a lot of practice. This magic experiment kit will show you the truth behind a magician's secrets. Best of all, you will learn how to perform the tricks yourself and astonish your friends, parents, or grandparents in the process. That's a lot more fun that just knowing how it works!

Tips for young magicians

- Only perform tricks that you have practiced enough to master. Then, you will have less stage fright — that funny feeling of anxiety before a performance.
- Every magician has his favorite tricks and others he doesn't like as much. So if there's a trick you don't really like, don't perform it. You will find plenty of others that you do like.
- Don't worry that a trick might not work. If you have practiced it enough, everything should work out. And even if things don't go smoothly, it won't kill you.
- Before a trick, think about what you want to say as you perform it. Each trick here comes with its own script that has already been tested before an audience.



Take-along tricks

Some of the tricks are marked with this pocket symbol. It means they are easy to stick in your jacket and perform wherever you're going without a lot of preparation required.

Your preparations

For the most part, you will just need a table that you can wipe off to put your magician's materials on. For the tricks that use water, it's good to have a rag in case anything tips over. Orient your table so that all the spectators can see you easily.

Preparing and practicing the tricks

Always start by reading through all the instructions for the trick, so you know how it works. The "You Will Need" section has a list of all the magician's materials you will require. The "Preparation" section tells you how to get everything ready. The "Performance" section demonstrates the trick the way it will be performed. Rehearse the script in the speech bubbles once you have practiced the trick enough to be able to perform it automatically. And after your performance: Return everything to the box so it all stays together.

Admission tickets and decorations

In your kit, you will find a large folded cardboard sheet from which you can assemble the admission tickets and decorative materials for your performance. Start by removing it from the box and separating all the pieces.

1 Admission tickets: Cut out the cards, fold them down the center, and glue them together.

2 Door sign: Cut out the door sign and tie a string through its two holes so you can hang it.

3 Box office and stage podium: Fold the two small tabs to the rear and glue them in place from the inside. That will give you a self-standing two-way sign. It can either be the box office, for selling your admission tickets, or it can be a "Curtains Up" sign for your magician's table. You can easily hide your props behind it so the audience can't see them.

Your own show

You might like to stage an entire magic show composed of your tricks. In that case, just be careful not to choose too many tricks to perform. Don't plan to do more than five — otherwise you might overtax your audience.

Think beforehand about all the materials you will need and get everything ready.

Try to mix things up as much as possible in the show. The sequence of tricks in this manual is chosen in such a way that you can basically start with any of them. The tricks that follow any one of them will offer sufficient variety. Or, you can select just your favorite ones for your performance. Round off your magic show with the right costume — for example, a pointy hat, a top hat, or a cape — and have soft music playing in the background.

This is important: First practice performing the entire show from beginning to end. That way, you will be sure that everything is ready and you will know exactly where you have placed your props before and after each trick. And if your audience claps enthusiastically, take a bow and enjoy the applause — every performer's reward!

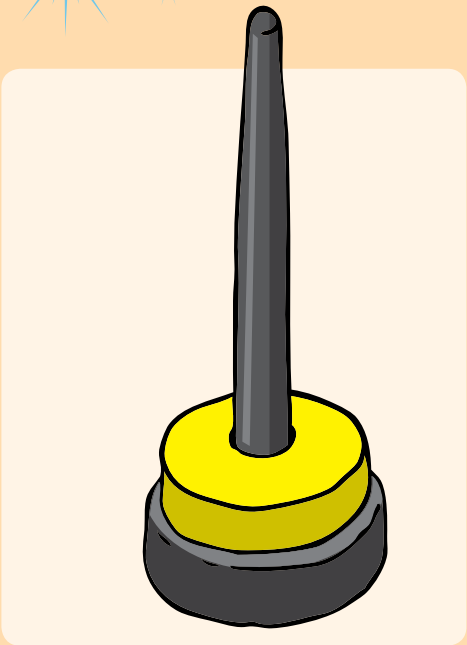
Your audience may also yell for an encore. That means they want to see another magic trick, which you should keep ready in your back pocket just in case.

And now, curtains up!

TRICK 2

Floating magnet

A ring floats on a stick.



YOU WILL NEED

› **Yellow magnet, magnet stand**

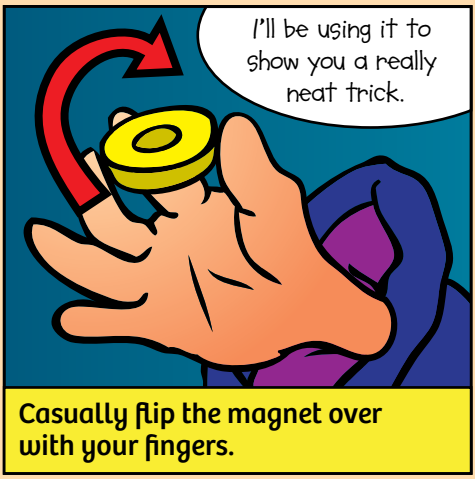
PREPARATION

Before your performance, set the magnet on the stand with the ring oriented so that it is attracted to the base of the stand. There's another ring magnet hidden inside the base.

PERFORMANCE

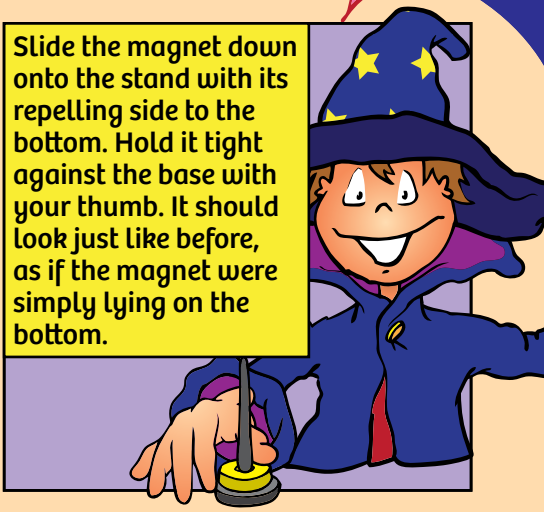
Pull the magnet off the stand. Don't let your audience know that it's a magnet.

In one fluid movement, slide the magnet softly back onto the stand. Let it rest there for a moment, and then pull it off the stand again.



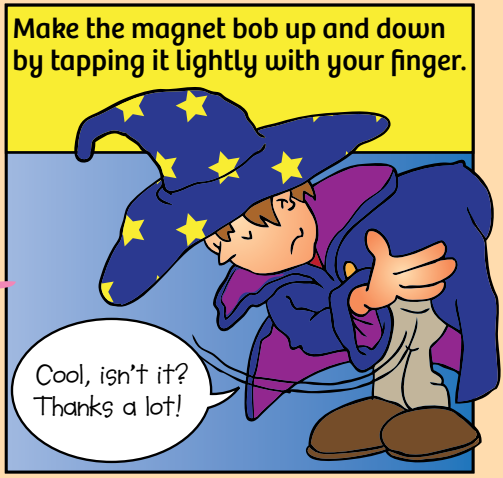
Casually flip the magnet over with your fingers.

Slide the magnet down onto the stand with its repelling side to the bottom. Hold it tight against the base with your thumb. It should look just like before, as if the magnet were simply lying on the bottom.



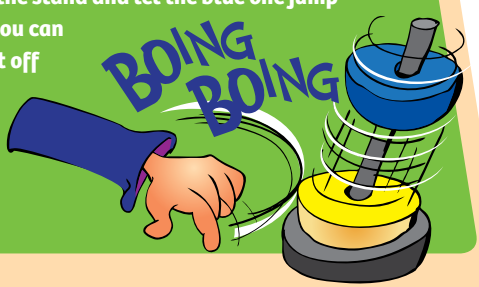
Loosen your thumb's grip on the magnet. It will jump up.

Make the magnet bob up and down by tapping it lightly with your finger.



ENCORE

Invisible springs: If you insert the yellow magnet firmly over the stand and let the blue one jump up from it, you can even shoot it off the stand.



SCIENCE OR MAGIC ?

SCIENCE! The yellow magnet is repelled by an invisible magnet hidden inside the stand. To make sure your audience is surprised, start by acting as if the ring were not magnetic at all. The more convincing an actor you are, the more successful your trick will be.

TRICK 3

Obedient magic box

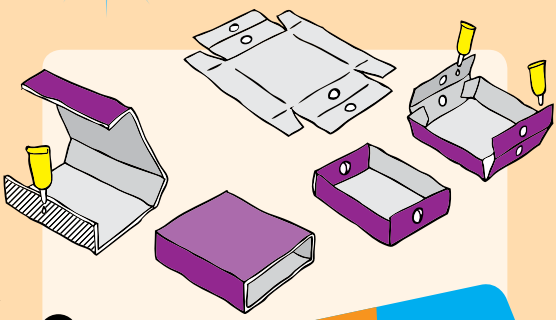
A magic box glides along a string and stops on command.

YOU WILL NEED

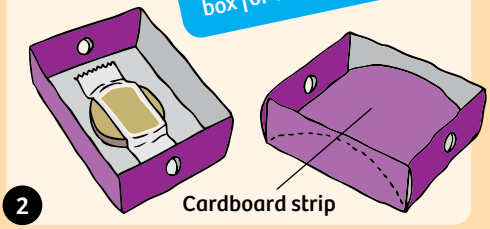
› **Magic box and cardboard strip (die-cut sheet), string**
› *Nickel coin, tape, glue*

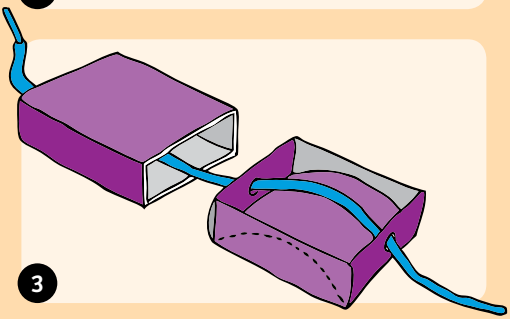
PREPARATION

1. Glue the box together.
2. Tape the nickel coin to the floor of the box. It will make the box heavier and help it slide better. Insert the cardboard strip so that it bends upward.
3. Thread the string through the holes and close the box.



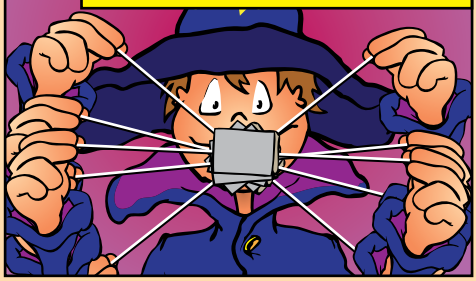
TIP
You will also need this magic box for trick 14.

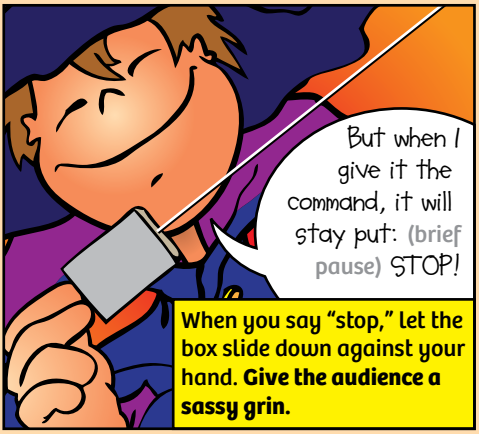




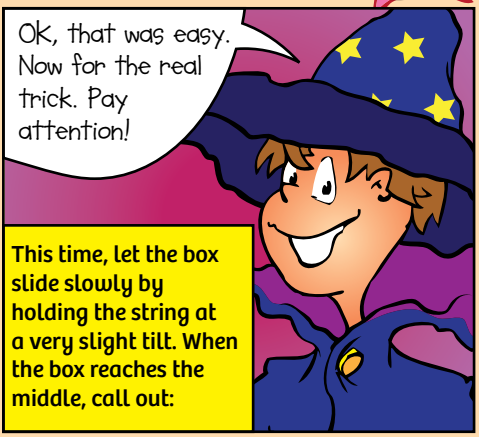
PERFORMANCE

Hold the string stretched loosely and make the box slide quickly back and forth between your hands by holding your left hand higher, then the right hand, and so on.

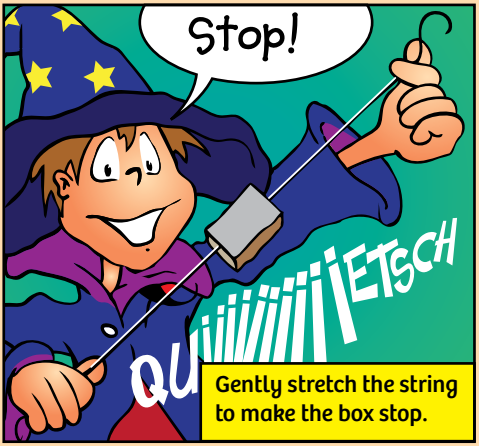




When you say "stop," let the box slide down against your hand. **Give the audience a sassy grin.**



This time, let the box slide slowly by holding the string at a very slight tilt. When the box reaches the middle, call out:

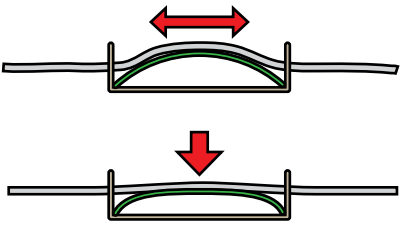


Gently stretch the string to make the box stop.

Let the box slide again!

SCIENCE OR MAGIC ?

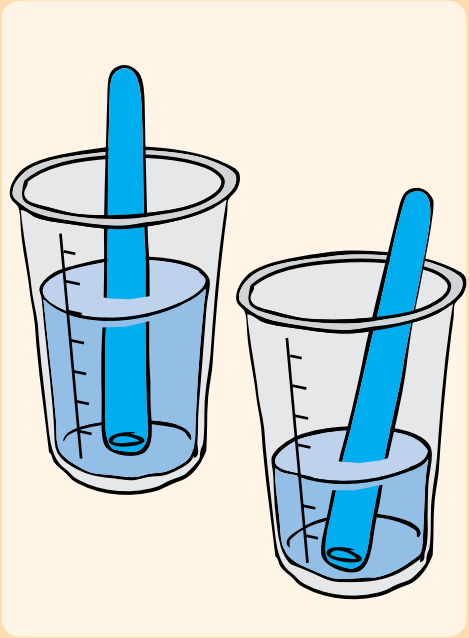
SCIENCE! When you stretch the string tighter, it presses on the cardboard strip and acts like a brake to stop the box.



TRICK 4

Unblowable straw

An audience member cannot blow bubbles through two straws at the same time.



YOU WILL NEED

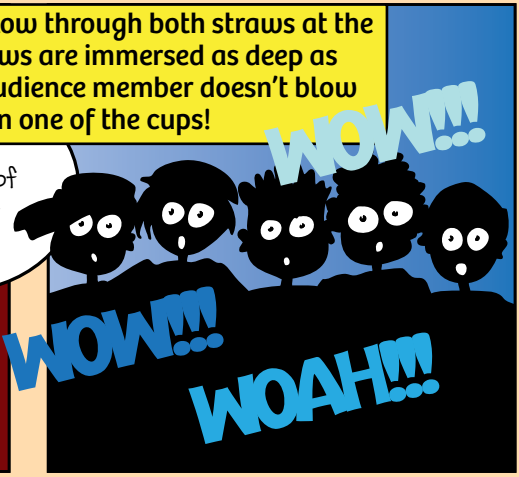
› 2 Straws, 2 cups
› Pitcher of water

PREPARATION

Fill both cups with water. The level in one should be about 2 centimeters lower than the other. Place a straw in each of the cups.

PERFORMANCE

Now have your audience member blow through both straws at the same time. Make sure that both straws are immersed as deep as possible in the water and that the audience member doesn't blow too hard. Bubbles will only appear in one of the cups!



SCIENCE OR MAGIC ?

SCIENCE! When you blow through a straw, bubbles of air appear when the "blowing pressure" is exactly as great as the water pressure. The blowing pressure does not rise beyond that point. The water pressure in the fuller cup of water is greater than the pressure in the cup that is filled a little less. But you won't reach this pressure level when you blow, since bubbles will already have appeared in the less-full cup at a lower pressure. This is what happens when you go snorkeling too. Only once you overcome the water pressure by blowing into the snorkel tube will bubbles come out the other end.

TRICK 5

Levitating water

Water levitates in a cup.

YOU WILL NEED

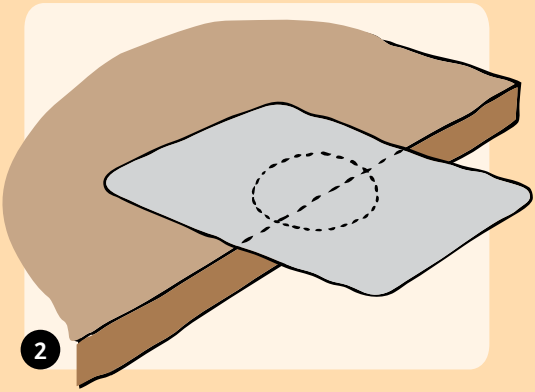
› **Magic cup, magic lid, magic card (die-cut sheet)**
› *Pitcher of water, transparent bowl*

PREPARATION

1. Place a drop of water in the center of the card and set the magic lid on top of it. The lid should stick to the card, and the small groove should be visible along the edge.

2. Place the card with its magic lid at the edge of the table in such a way that you can easily hold onto both. The lid must be under the card so nobody can see it. Get the bowl and pitcher ready.

1



2

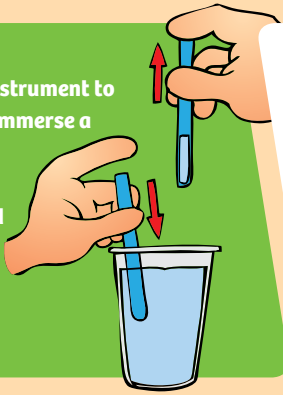
PERFORMANCE

Fill the magic cup with water almost up to the brim.

Place the card with the lid on the cup in such a way that the lid seals the cup closed. Press the postcard onto the cup and turn the cup over so its opening points down.

ENCORE

Pipette: You can also use this instrument to make water levitate in the air. Immerse a straw into a water-filled measuring cup, hold your finger over the top opening, and pull the straw up. The water will levitate in the tube and only run back out again when you let go of the opening.



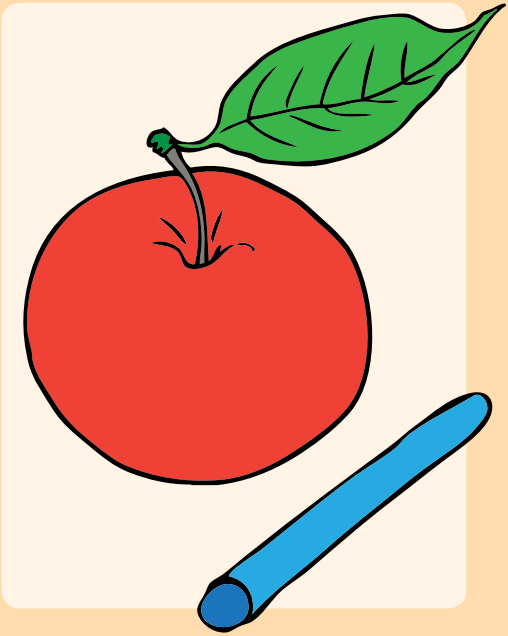
SCIENCE OR MAGIC ?

SCIENCE! The lid is in fact held against the cup by air pressure. Because the lid is visually similar to water, you can't see it. When you push hard on the sides of the cup, the pressure inside rises and pushes out the lid.

TRICK 6

Sturdy straw

A drinking straw is pushed into an apple.



YOU WILL NEED

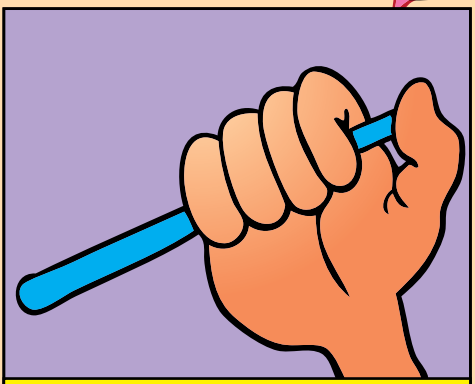
› Straw

› Nice firm apple

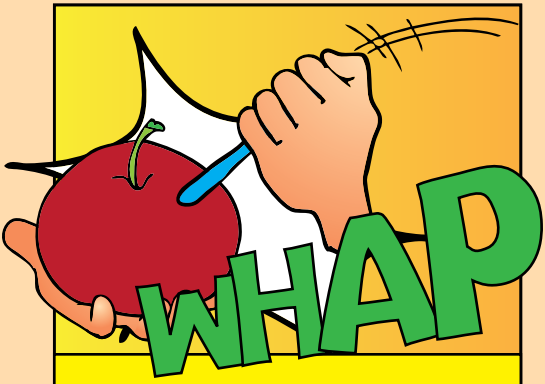
PREPARATION

Get apple and the straw ready.

PERFORMANCE



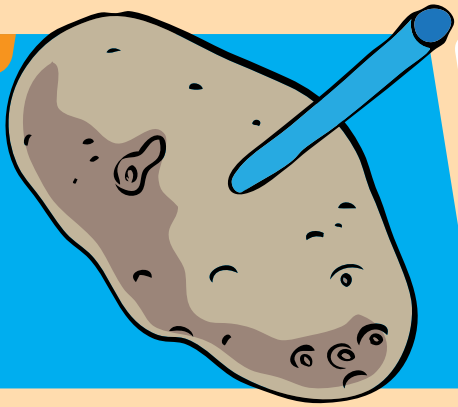
Hold the straw in your fist and place your thumb over the opening.



Spear the apple with the straw in one quick move.

TIP

If it doesn't work with an apple, try it with a potato.



SCIENCE OR MAGIC ?

SCIENCE! Since you have your thumb held over the straw's opening, a high level of air pressure builds up as soon as the straw starts to penetrate the apple. That gives the straw all the strength it needs.

TRICK 7

Bewitched funnel

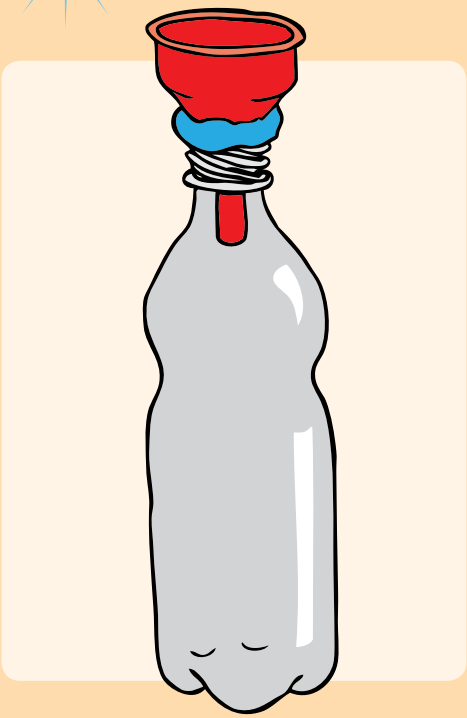
A funnel is stopped up as if by magic.

YOU WILL NEED

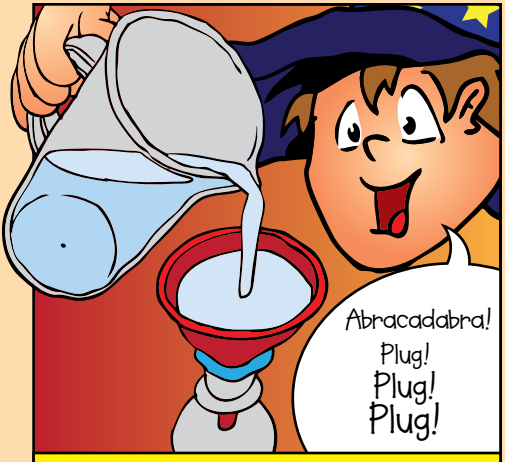
› **Funnel, clay, thin drinking straw**
› *Empty plastic bottle (0.3-0.5 liters), pitcher of water*

PREPARATION

Insert the funnel into the bottle and seal the gap between funnel and bottleneck with clay. Get the pitcher ready and place the straw beside it.



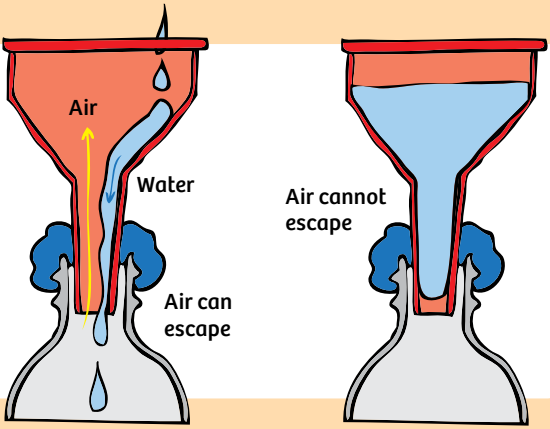
PERFORMANCE



Pour water into the funnel until no more runs through.

SCIENCE OR MAGIC ?

SCIENCE! The air pressure inside the bottle prevents any more water from flowing into it. Because water is blocking its way, the air cannot escape from the bottle. Only when the air is able to escape can water flow in to replace it.



TRICK 8

Brave fakir's balloon

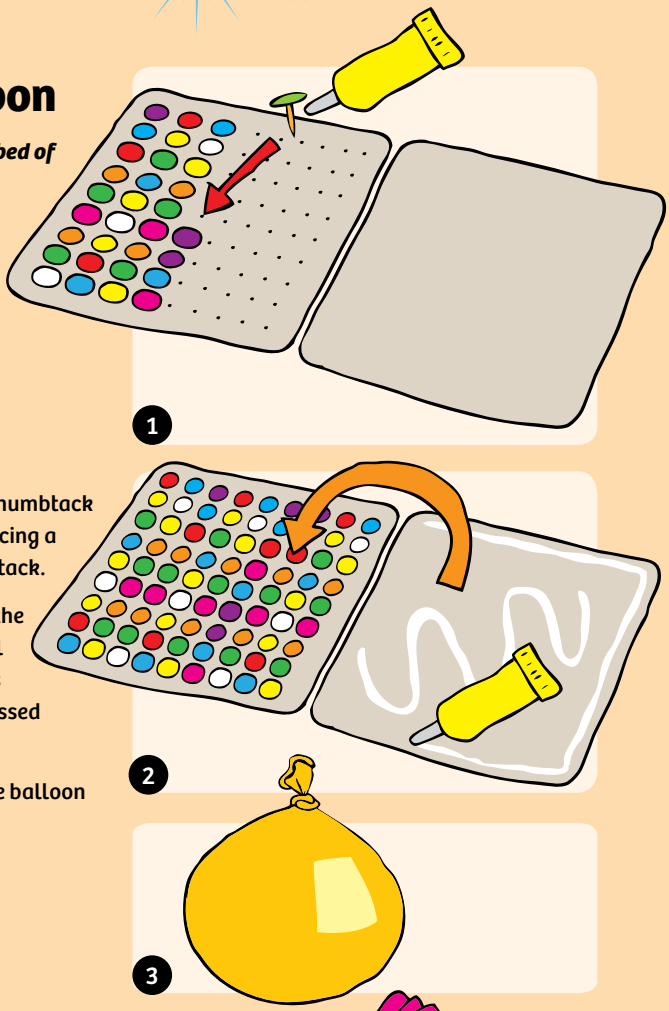
A balloon is pushed gently against a bed of nails without popping.

YOU WILL NEED

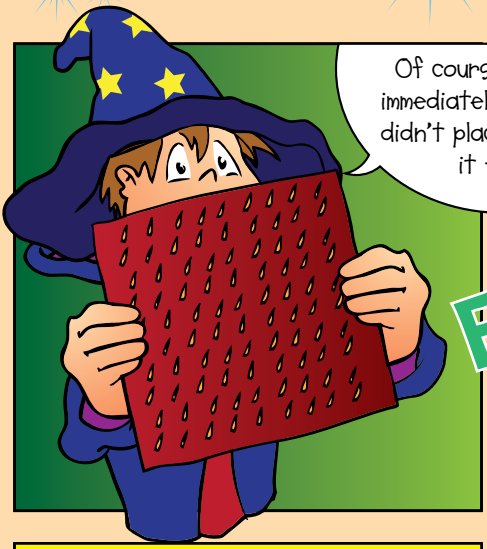
› **Large balloon, thumbtacks, nail cushion (die-cut sheet)**
› *Glue*

PREPARATION

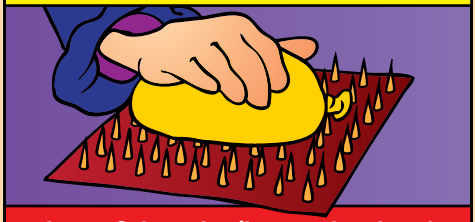
1. Assemble the bed of nails: Insert a thumbtack into each hole from below, after placing a drop of glue under the head of each tack.
2. Once you have inserted tacks in all the holes, glue the lower part of the nail cushion to the upper part. The edges should be well glued and firmly pressed together.
3. Before your performance, inflate the balloon (but not too full) and tie it shut.



PERFORMANCE



Place the balloon gently on the bed of nails. Press evenly and not too hard on the balloon, until it becomes visibly flattened.



But careful — don't press too hard, or it really will pop and you might stick yourself on the thumbtacks.

SCIENCE OR MAGIC ?

SCIENCE! The force exerted on the balloon by your hand is evenly distributed across the thumbtacks. No single part of the balloon is pressed very hard against any particular thumbtack, which would cause it to pop. In the same way, we are able to walk on a gravelly beach, even though stepping on a single stone would really hurt!

Fakir tricks

The trick of lying on a cushion or bed of nails without getting injured is one of the performances made famous by fakirs, a term commonly used for performers in India. The exact same explanation lies behind it as in the case of your fakir's balloon: The fakir's weight is distributed across lots of nails. That means that any individual nail will pose no great danger. Do not try this at home though!

WALKING ON GLASS

Physics can come in handy for other fakir tricks as well. Walking on shards of glass, for example, works just like lying on a bed of nails. The more shards you use, the less dangerous it is. Of course, you would first have to rub the shards smooth, so they wouldn't have any sharp edges. The audience wouldn't notice though. Again, don't try this at home!

KEY WORD: AIR PRESSURE

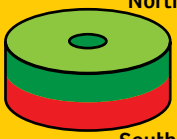
Air pressure played an important role in some of the previous tricks. This force is created by the weight of all the air that surrounds us. It's not to be taken lightly: It amounts to almost 10 tons pushing down on every square meter — the equivalent of about 10 subcompact cars.

You can really notice the pressure if you go diving under the water. The deeper you dive, the stronger the pressure you feel in your ears. In this case, it's the weight of the water rather than the air that is pressing on you.

Magnets are also used in industry — for example, by cranes moving scrap metal.

Magnets

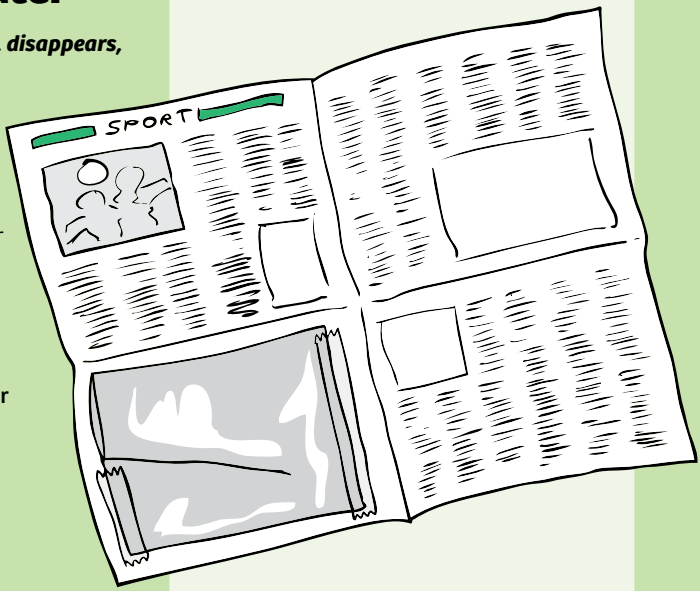
Even though people have known about magnets for over 2,000 years, magicians still use them in some of their tricks. The important thing to remember is that magnets always have two poles — a north pole and a south pole. Unlike poles attract each other, while like poles repel each other. Even though a lot is known about magnets today, there are still a few mysterious magnetic phenomena that puzzle even scientists.



TRICK 9

Disappearing water

Water is poured into a newspaper, disappears, and then shows up again.



YOU WILL NEED

› Water pouch, cup

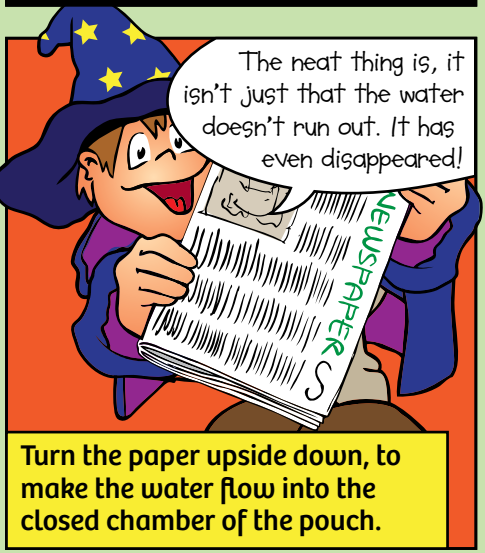
› Newspaper, tape, pitcher of water

PREPARATION

Tape the water pouch into the newspaper as shown. Set the water pitcher on the table.

PERFORMANCE

Fold the paper together so that you can pour the water into the bag's opening.

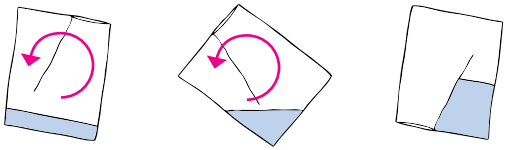


TIP

Definitely practice this first before taping the pouch into the newspaper. Take a look at how the water flows from one chamber into the other.

SCIENCE OR MAGIC ?

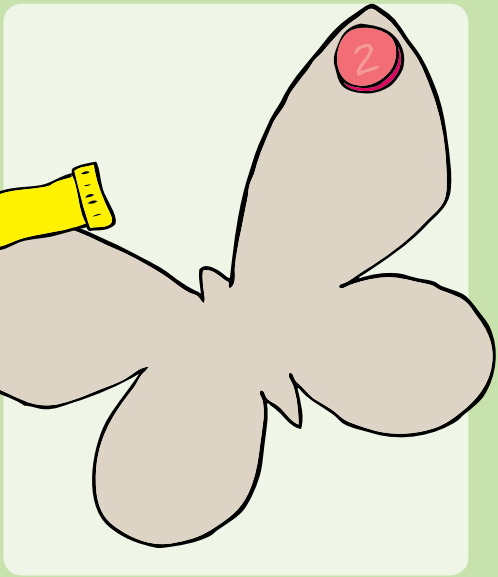
SCIENCE! The water is following the force of gravity. When you turn the paper one way, the water runs into the closed chamber of the pouch. When you turn it the other way, it runs out again.



TRICK 10

Magic butterfly

A butterfly balances magically on your outstretched finger.



YOU WILL NEED

› **Butterfly (die-cut sheet)**
› *Glue, two pennies*

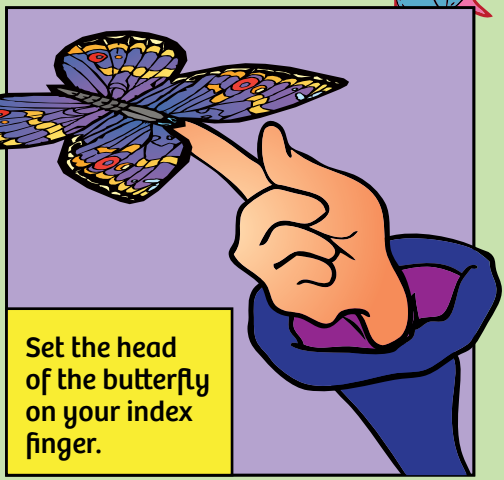
PREPARATION

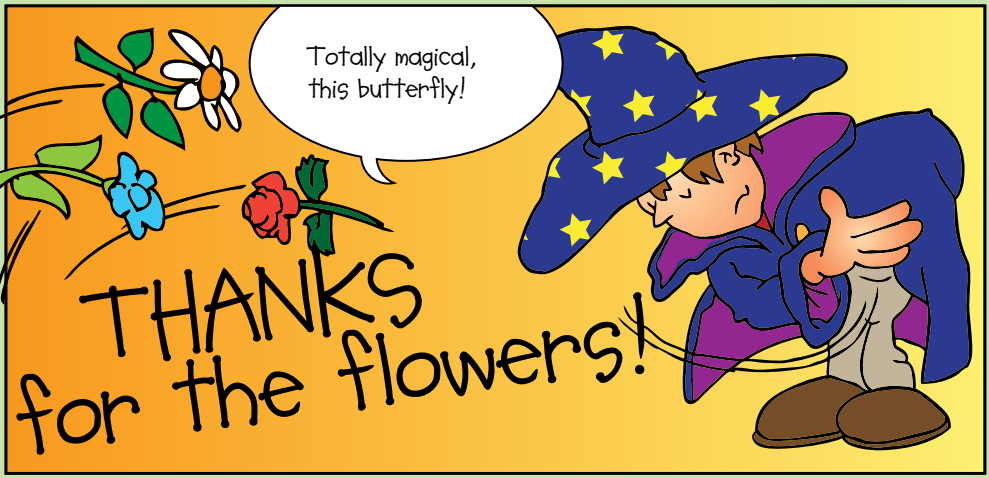
Glue the coins to the underside of the butterfly's top wind tips.

PERFORMANCE

Show the top side of the butterfly to the audience.

Place the rear of the butterfly on your index finger. Let go when you say the word "Fly!" Of course, it will fall to the ground. Repeat this a second time.





TIP

You can balance the butterfly on a lot of different things, including your foot or your nose.

SCIENCE OR MAGIC ?

SCIENCE! Because of the coins you glued on, the center of the butterfly's gravity is right at the head, rather than in the center. That's how you can balance it on your index finger with your index finger at its head.

TRICK 11

Clinging funnel

A funnel remains magically attached to a string.

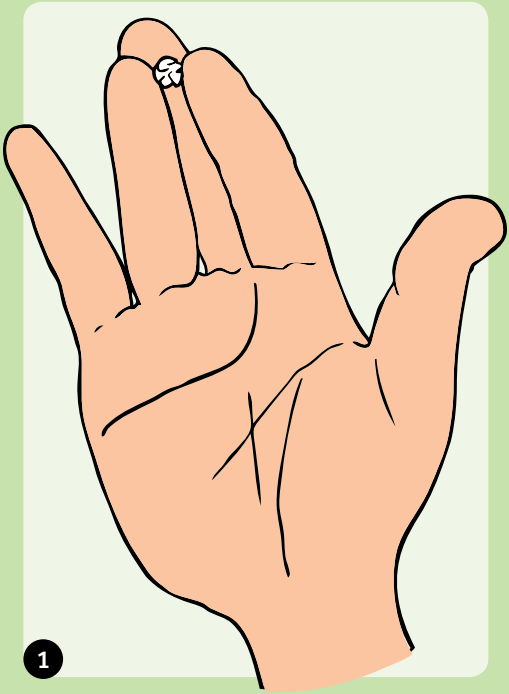
YOU WILL NEED

› **Funnel, string**
› *Facial tissue*

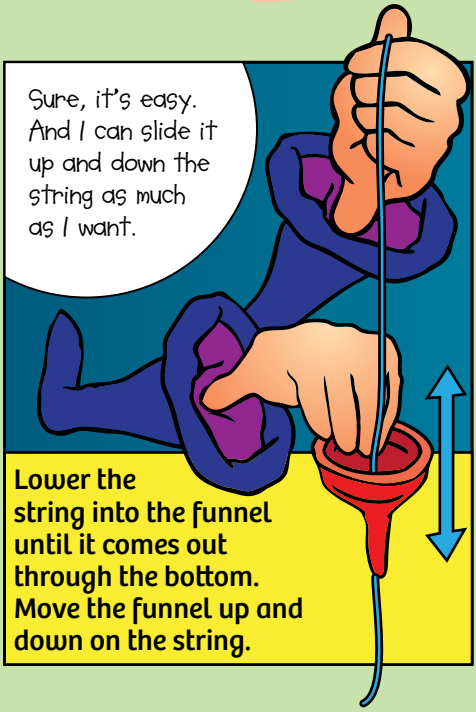
PREPARATION

1. Tear off a small corner of the tissue and roll it into a little ball. It should be just small enough to fit into the neck of the funnel. Hold the tissue ball between the tips of your right hand's index and ring fingers.

2. Get the funnel and string ready.



PERFORMANCE

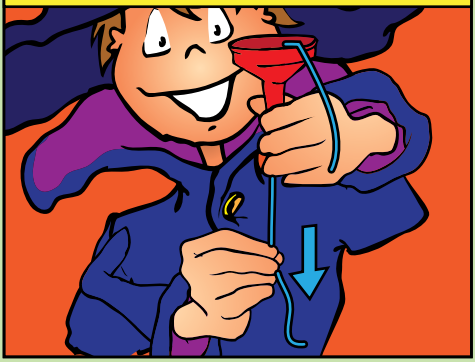


Leave about half the length of string hanging out of the top of the funnel.

ABRACADABRA

Move the funnel to your left hand, letting go of the funnel and the ball of tissue with your right. As you do that, the ball will roll into the funnel's neck. Immediately make a magic gesture over the funnel with your right hand.

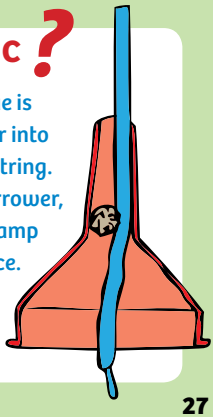
Pull down gently on the string with your right hand, until you feel a slight resistance.



Now let the funnel's opening rotate downward and let it dangle freely.

SCIENCE OR MAGIC ?

SCIENCE! The ball of tissue is pulled farther and farther into the funnel's neck by the string. As the neck becomes narrower, it will sooner or later clamp the string tightly in place.



Self-winding string

A piece of string magically winds itself around the magic wand, preventing a water balloon from falling to the ground and bursting.

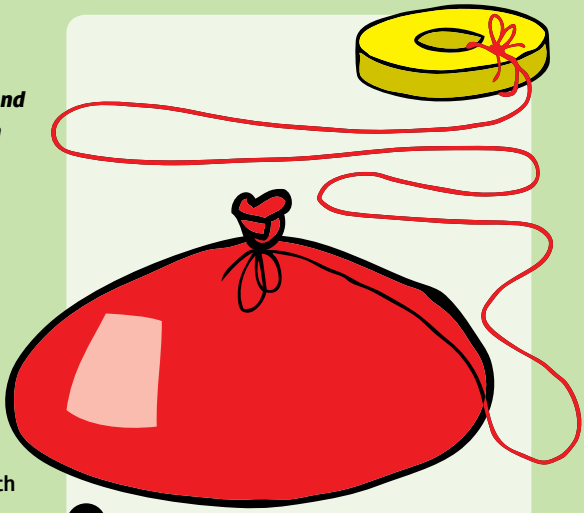
YOU WILL NEED

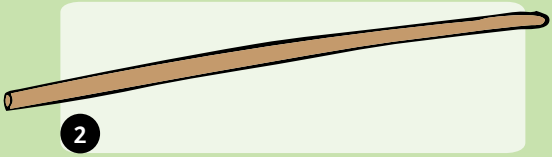
› **90 cm of string, yellow magnet, small balloon, magic wand (wooden)**

PREPARATION

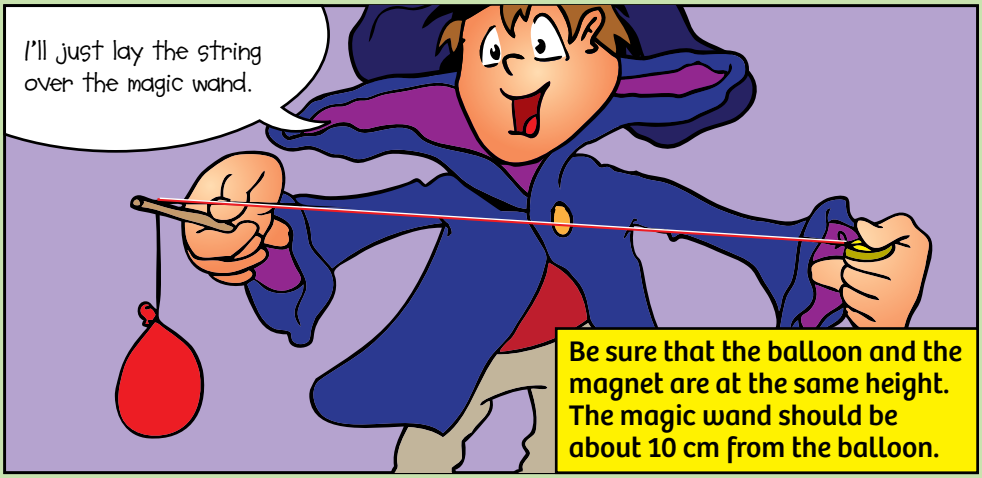
1. Measure off 90 cm of string and tie the magnet to one end of it. Fill the balloon with water, close it, and tie it to the other end of the string.

2. Get your magic wand ready.





PERFORMANCE



TIP

Instead of the water balloon, you can also use other objects such as a partially filled water bottle, a pencil case, or a metal car. That will make the trick easier to carry around with you.

SCIENCE OR MAGIC ?

SCIENCE! The falling balloon accelerates the magnet, which is also falling at the same time. That makes it rotate around the magic wand and winds the string around the wand.

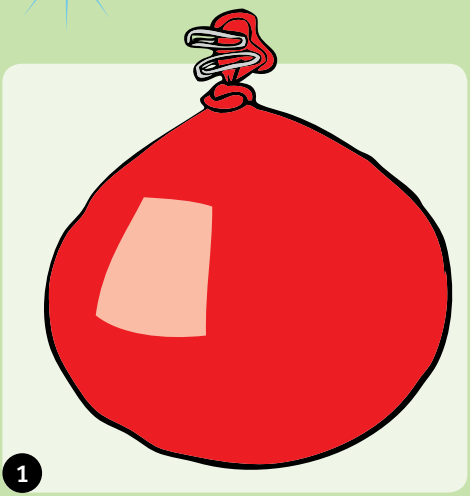
TRICK 13

Bewitched water balloon

A water balloon is lowered into a deep water-filled bowl. A little magic and magic salt will make it rise up again.

YOU WILL NEED

› Small balloon, 2 paper clips, cup
› Deep bowl, table salt, water

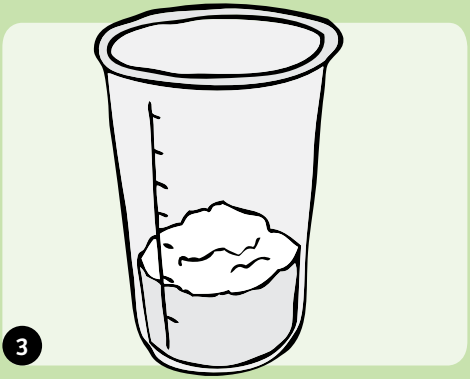


PREPARATION

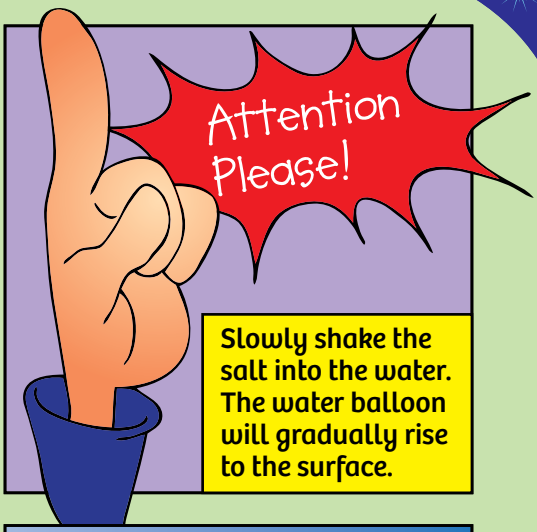
1. Fill the balloon with water from the sink and tie the balloon shut. Be careful to let as little air as possible get into the balloon. Clamp the two paper clips over the knot to make the balloon sink.

2. Set the balloon in the bowl. Fill the bowl with enough water to make the balloon stay well under the water's surface. Brush off any air bubbles with your hand.

3. Pour salt into the cup up to about the 50-ml mark. The exact amount needed will depend on the size of the bowl, so you will have to experiment a little. Then pour the salt into the bowl.



PERFORMANCE



ENCORE

Bewitched egg: You can also use salt to make a raw egg float. Pour 100 ml of water into one cup and 3 teaspoons of salt into another. When you place the egg in the cup of water, it sinks. Remove it with a spoon, pour the salt into the water, and stir while uttering your magic spell. When you place the egg back into the cup, it will float in the salt water.

SCIENCE OR MAGIC ?

SCIENCE! Salt water has a greater density than tap water. It is heavier, so to speak. Since the water balloon is lighter than the salt water that it displaces, it floats to the top.

TRICK 14

Magical vacuum box

The vacuum box only sucks up bewitched paper clips, leaving everything else alone.

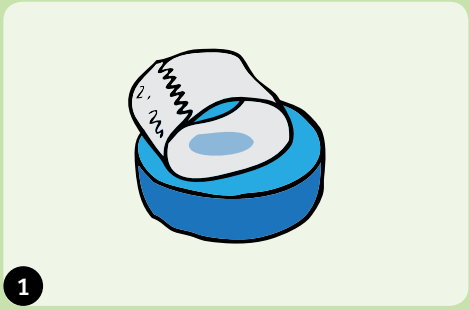
YOU WILL NEED

› **Magic box (from Trick 3) without coin and cardboard strip, blue magnet, paper clips, feather, string, magic wand**

› *Tape*

PREPARATION

1. Roll the tape into a ring and place it on the magnet.
2. From inside the slightly opened box, press the magnet against the lid of the box and then close the prepared vacuum box.
3. Spread out the other objects on the table and get your magic wand ready.



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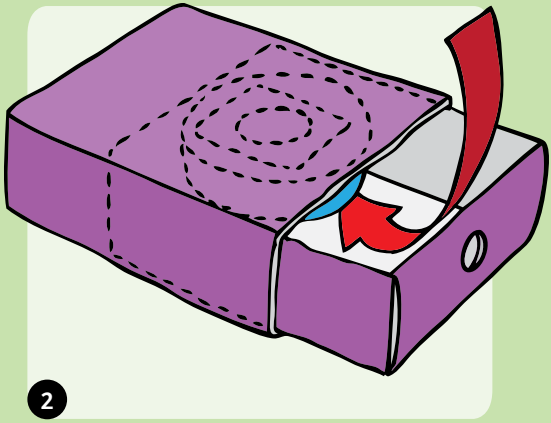


2

PERFORMANCE

Show the slightly open box.

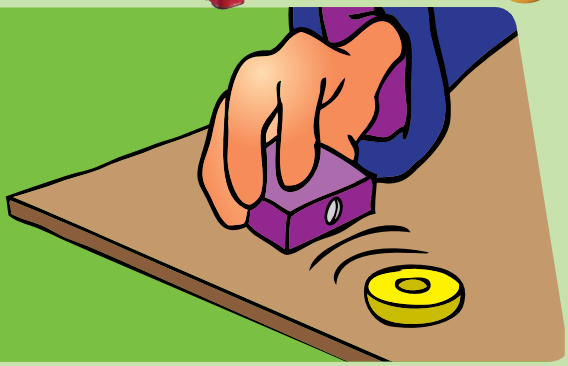
Swing your wand through the air and tap just the two paper clips.

SCIENCE OR MAGIC ?

SCIENCE! The magnet inside the box only attracts objects made of iron, not materials such as feathers, fabric, thread, plastic, rubber, glass, etc. Try it on various small objects from your bedroom. Which are magnetic and which are not?

ENCORE

Nervous ring: Place the yellow magnet on a smooth table surface with its repelling side up. It will nervously scoot away when the vacuum box moves toward it — the equal poles of the two magnets repel each other. Important: Do not reveal the fact that the yellow ring is a magnet!



Ring in a cup

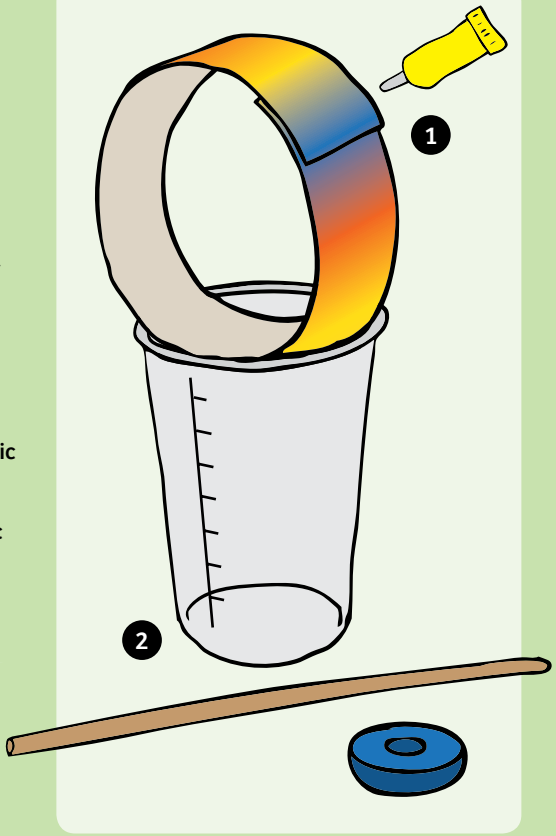
Only magic can make the magnet land inside the cup, once the magic ring is knocked away with the magic wand.

YOU WILL NEED

› **Magic strip (die-cut sheet), cup, magic wand, blue magnet**
› *Glue*

PREPARATION

1. Glue the magic strip into the shape of a magic ring.
2. Set the cup on the table and place the magic ring over the opening of the cup. Get your magnet and magic wand ready.



PERFORMANCE

All you have to do is knock away the magic ring. Do you want to try it?

Demonstrate to your audience how to knock away the magic ring — namely, from the outside.

Let an audience member try it. Make sure he or she holds the cup tightly.

You have to know how to use the magic wand to get around the problem. Pay attention!

Reassemble the cup, magic ring, and magnet tower.

Hold the cup tightly and knock away the magic ring from inside.

The magnet will fall right into the cup.

GREAT!!!

BRAVO!!!

Yes, that's how you do it. Thank you very much!

SCIENCE OR MAGIC ?

SCIENCE! When you knock away the magic ring from the outside, it bulges upward a little. That catapults the magnet up and away. If you hit the ring from inside, it moves away under the weight of the magnet, and the magnet is free to fall straight down into the cup.

Magicians and gravity

Gravity — the force that pulls everything down to the ground — had an important role to play in some of the previous tricks. Some magic tricks, such as the "disappearing water" trick, would be impossible without gravity.

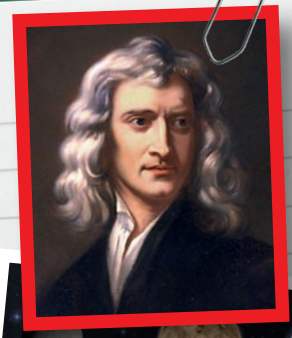
Magicians often like to appear to overcome the force of gravity though. The first reports of "miraculous performers" capable of floating in the air started appearing almost 200 years ago. These days, magicians use complicated equipment for this kind of thing. Some "levitation devices" are so technically complicated that they have even been patented. There's one thing that all such devices have in common: They can't actually make you float in the air. It only looks that way.

DID YOU KNOW ...

When a hovercraft floats over the water, it seems to defy the law of gravity. In fact, it is held aloft by a cushion of air. Alas, no magic here either.

SCIENTISTS AND GRAVITY

The ever-present force of gravity has always been of interest to researchers and scientists. But it wasn't until 1686 that the English scientist Isaac Newton published his account of gravity. One of his great insights was that gravity doesn't just make an apple fall from a tree, it is also responsible for the movement of the planets and stars.

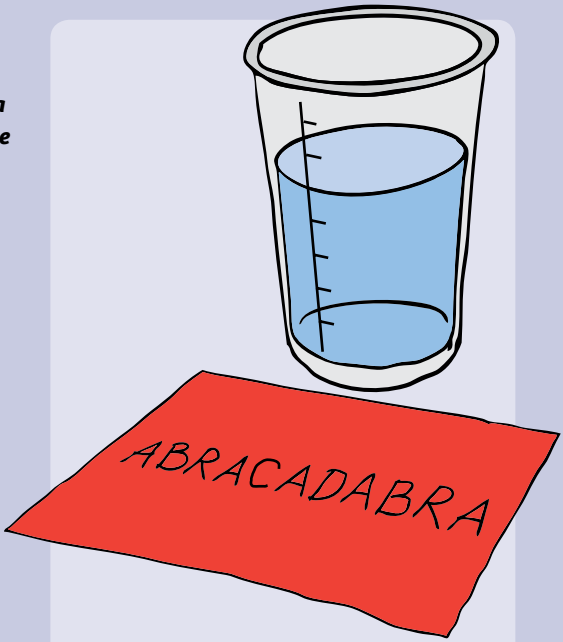


Salt Water

In the "bewitched water balloon" trick, it was salt water that brought the water balloon up to the surface. If you have ever swum in the ocean, you know that seawater tastes salty, too. In hot regions, seawater is collected in large basins, so that when the water evaporates it leaves behind sea salt. The Dead Sea is so salty, in fact, that you can easily lie on its surface without sinking.

Stable water glass

You will pull a sheet of paper out from under a cup of water. Not a single drop of water will be spilled in the process.



YOU WILL NEED

› **Cup, red paper**
› *Pitcher of water, pen*

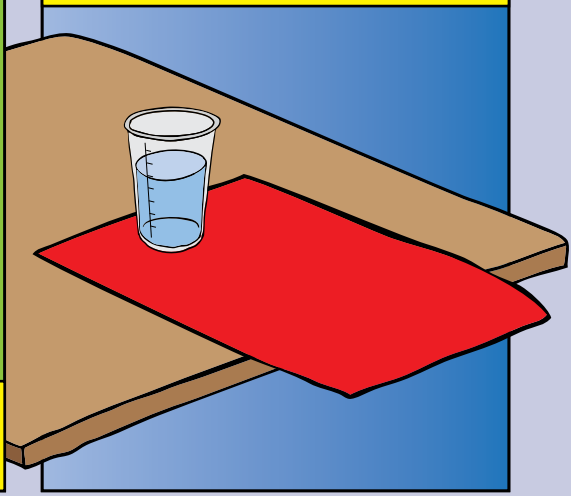
PREPARATION

Fill the cup with water (about 125 ml). Use a pen to write a magic saying on the paper, such as "ABRACADABRA."

PERFORMANCE

Make sure that nobody sees the writing.

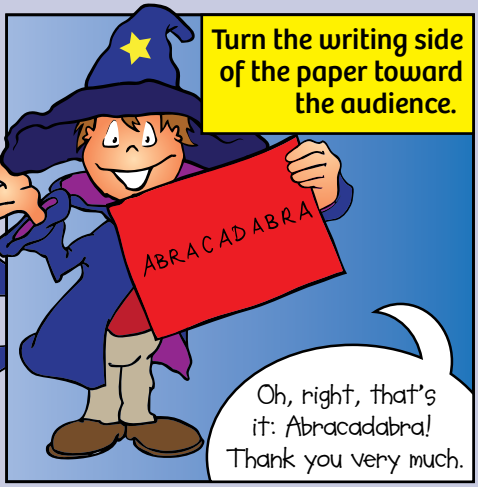
Lay the paper writing-side-down on the table. It should stick out about 6 cm beyond the edge of the table. Set the cup on the paper near the opposite end.



Act like you can't think of the right magic spell.

Grab the paper by the projecting corners.

Quickly and suddenly, yank the paper toward you. If you do it fast enough, the cup will simply stay in place.



Turn the writing side of the paper toward the audience.

TIP

Be sure to practice this trick first without water. You will have to fill the cup with something else in order to weigh it down. Ideally, practice your first attempts with water outside using scratch paper, or in a room where it's okay to spill things.

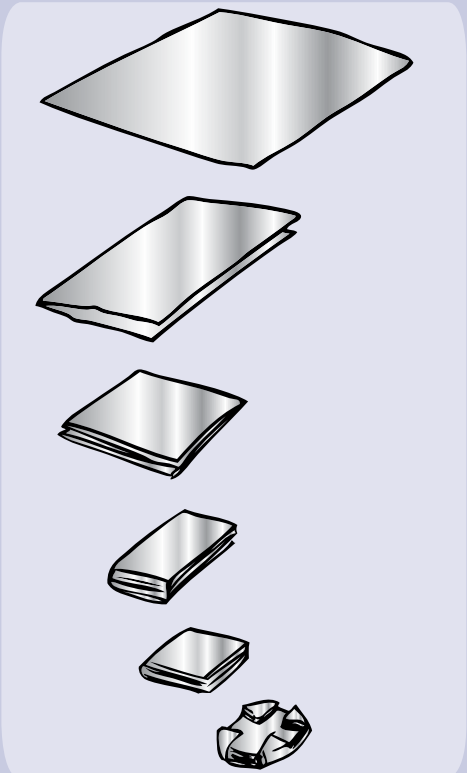
SCIENCE OR MAGIC ?

SCIENCE! If you pull the paper away quickly enough from under the cup, the cup can't move with it. So it simply remains standing where it is.

TRICK 17

Magnetic aluminum foil

A non-magnetic piece of aluminum foil is magically moved by a magnet.



YOU WILL NEED

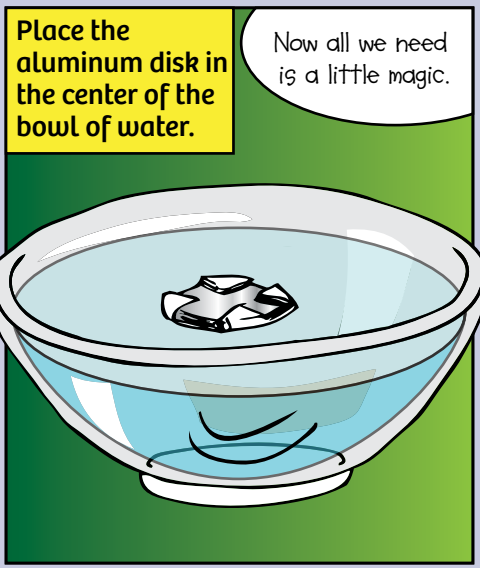
› **Yellow and blue magnet**
› *Aluminum foil (approximately 30 cm x 30 cm), water-filled bowl*

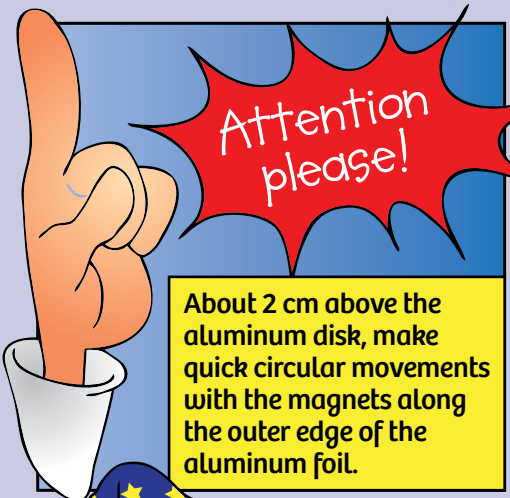
PREPARATION

1. Fold the aluminum foil four times down the center, and bend the corners to make a basically round aluminum disk.
2. Set the two magnets on top of each other. Fill the bowl with water.

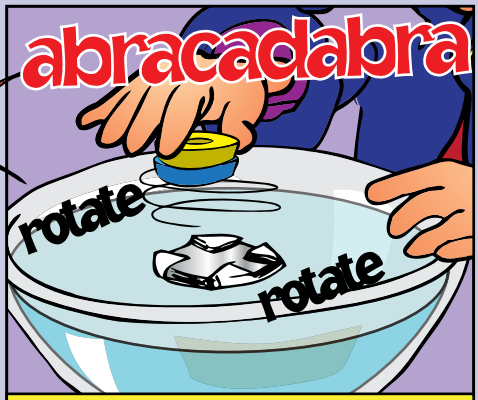
PERFORMANCE

Hold the aluminum disk against the magnets and let go of it. It will fall to the ground.





About 2 cm above the aluminum disk, make quick circular movements with the magnets along the outer edge of the aluminum foil.



Keep going until the disk starts to spin. It will take a little while.

TIP

You can intensify the effect by sticking the magnets onto the stand and making your circular motions with that. The base of the stand contains an additional magnet.

SCIENCE OR MAGIC ?

SCIENCE! The magnets create a weak electrical current in the aluminum foil. That in turn creates a magnetic field that allows the aluminum foil to be moved by the magnets.

Magic chain

With the help of some magic money, two paper clips appear to be joined into a chain without being touched.

YOU WILL NEED

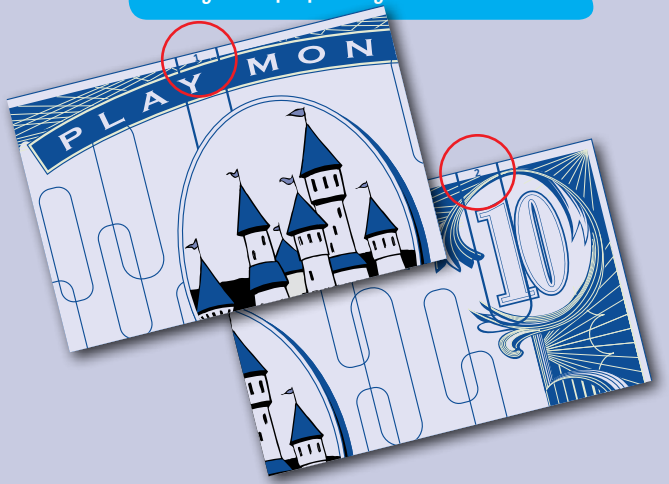
› **2 paper clips, magic ten-dollar bill (see page 47)**

PREPARATION

Cut the magic ten-dollar bill out of the manual.

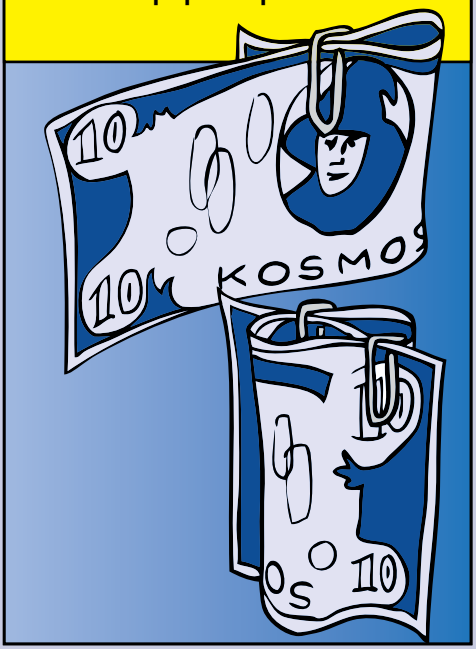
TIP

The tiny numbers at the edge of the bill and paper clip outlines will come in handy when performing this trick.



PERFORMANCE

Fold the bill as illustrated, and slide on the two paper clips in turn.

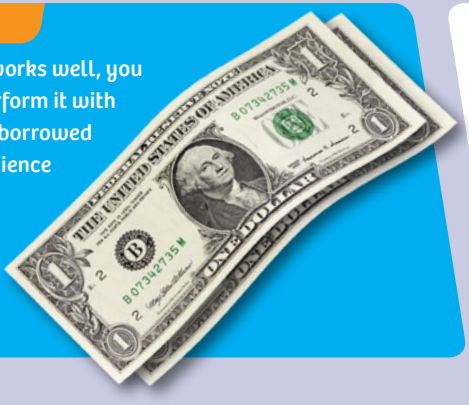


hocus pocus physicus

In a quick jerk, pull the two ends of the bill apart. As the paper clips jump away, they will end up linked together.

TIP

If the trick works well, you can also perform it with real money borrowed from an audience member.



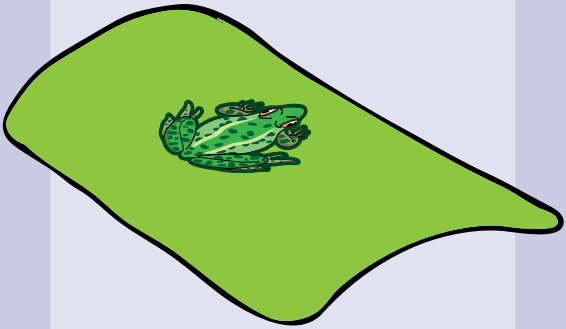
SCIENCE OR MAGIC ?

SCIENCE! When you pull the ends of the paper money apart, the paper clips move together because of the special way you folded the bill. Given the shape of the paper clips, they become linked together in the process. It happens so fast, though, that nobody can see it.

TRICK 19

Bewitched hopping frog

A frog card flips over, revealing a hopping frog.



YOU WILL NEED

› **Frog card (die-cut sheet)**

PREPARATION

Lightly bend the card lengthwise, so the frog image bulges out a little.

PERFORMANCE

Place the card frog-side-down on the table. Since you already bent it, it won't lie flat.

Place the edges of your hands on the table with your thumbs pointing up and your palms about 30 cm apart. If you were to clap them together, the tips of your fingers should almost touch the cards.

Clap your hands together just in front of the card, right over the surface of the table. The card will flip over to reveal the frog.

TIP

The trick works really nicely if the card turns just far enough for the green frog side of the card to remain facing up after the card flips.

How far the card turns depends on, first, how close to the card your hands are when they clap together, and second, how bent the card is. So test the trick several times first, trying out different distances between your hands and the card, and trying different degrees of bending of the card itself.

SCIENCE OR MAGIC ?

SCIENCE! Because the frog card bulges upward slightly, higher air pressure forms under the card when you clap. That throws the card upward, revealing the frog.

TRICK 20

Astonishing magic strip

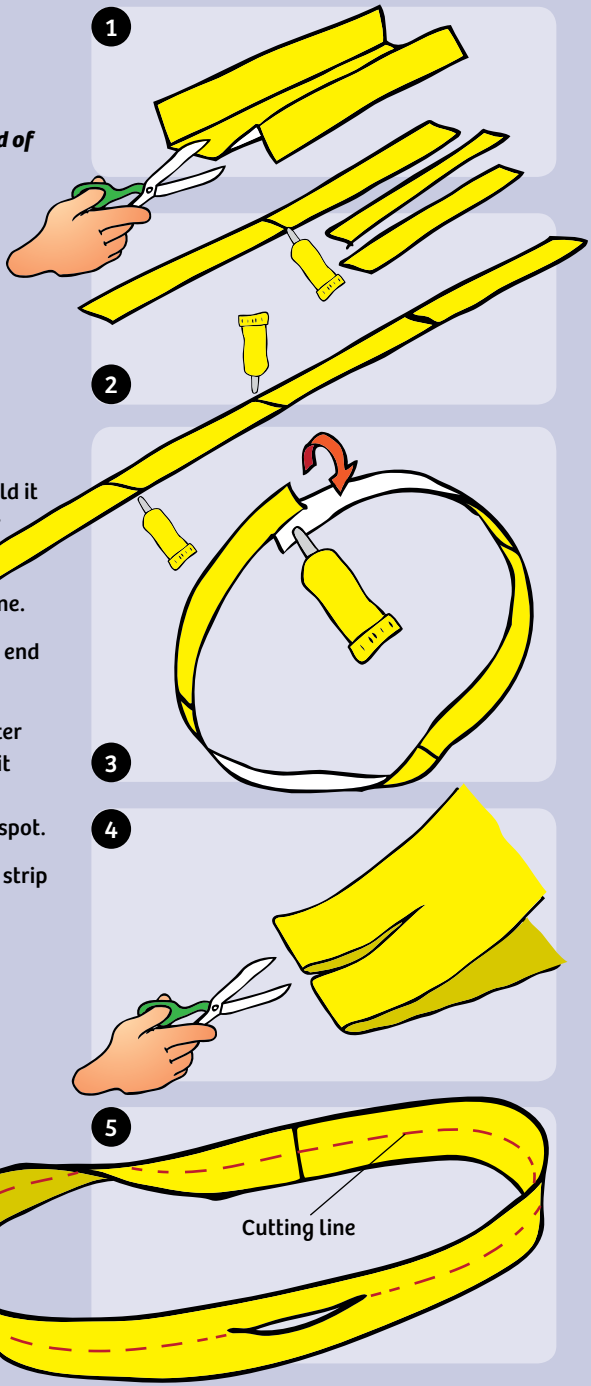
A paper ring is cut down its center. Instead of two rings, you get one big one.

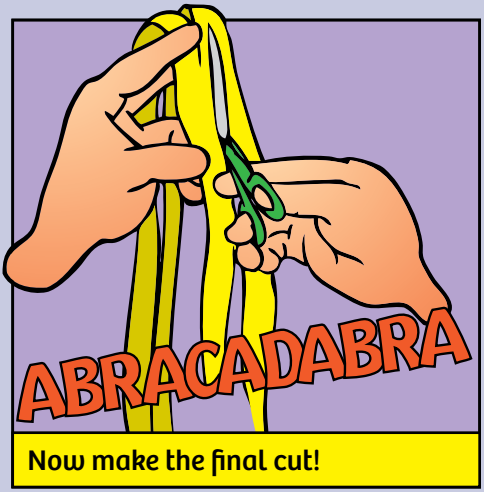
YOU WILL NEED

› **Yellow paper**
› *Scissors, glue*

PREPARATION

1. First, fold the sheet of paper twice lengthwise, right down the middle. Unfold it again and cut it along the folds into four strips of equal width.
2. Now, glue the four strips into one long one.
3. Make a ring out of the strip, twisting one end 180°. Glue the two ends together.
4. To make it easier to cut the ring apart later on, use the scissors to cut a 2 cm-long slit down the center of the strip of paper. It's easiest if you press the paper flat in one spot.
5. This is how the properly prepared magic strip should look.





SCIENCE OR MAGIC ?

MAGIC! Just kidding! SCIENCE! When you twist the end, the paper strip acquires a remarkable feature: It only has one single side! You can see that if you use a pen to draw a line down the center. Once you get back to the starting point, "both" sides of the ring are marked with the line. This results in the astonishing fact that when you cut the ring down the center, it creates a single large ring.

Cut out the magic ten-dollar bill here for Trick 18.

CHECK IT OUT

Möbius strip

The Möbius strip goes back to the mathematician and astronomer August Ferdinand Möbius (1790-1868). In large machines, used tires are often twisted like a Möbius strip, resulting in even wear.

Thresher

THE TABLECLOTH, THE TABLE, AND THE CROCKERY

Your "stable water glass" trick has a long tradition in the circus. In its usual version, you will see a table covered with plates and glasses. The performer then pulls the tablecloth out from under the tableware without breaking anything. If you want to try this yourself, make sure that your tablecloth doesn't have a sewn seam, which might catch the crockery. It's best to practice with plastic plates that have some weight to them. Make sure you have permission to use whatever dishes you plan to use in this way.

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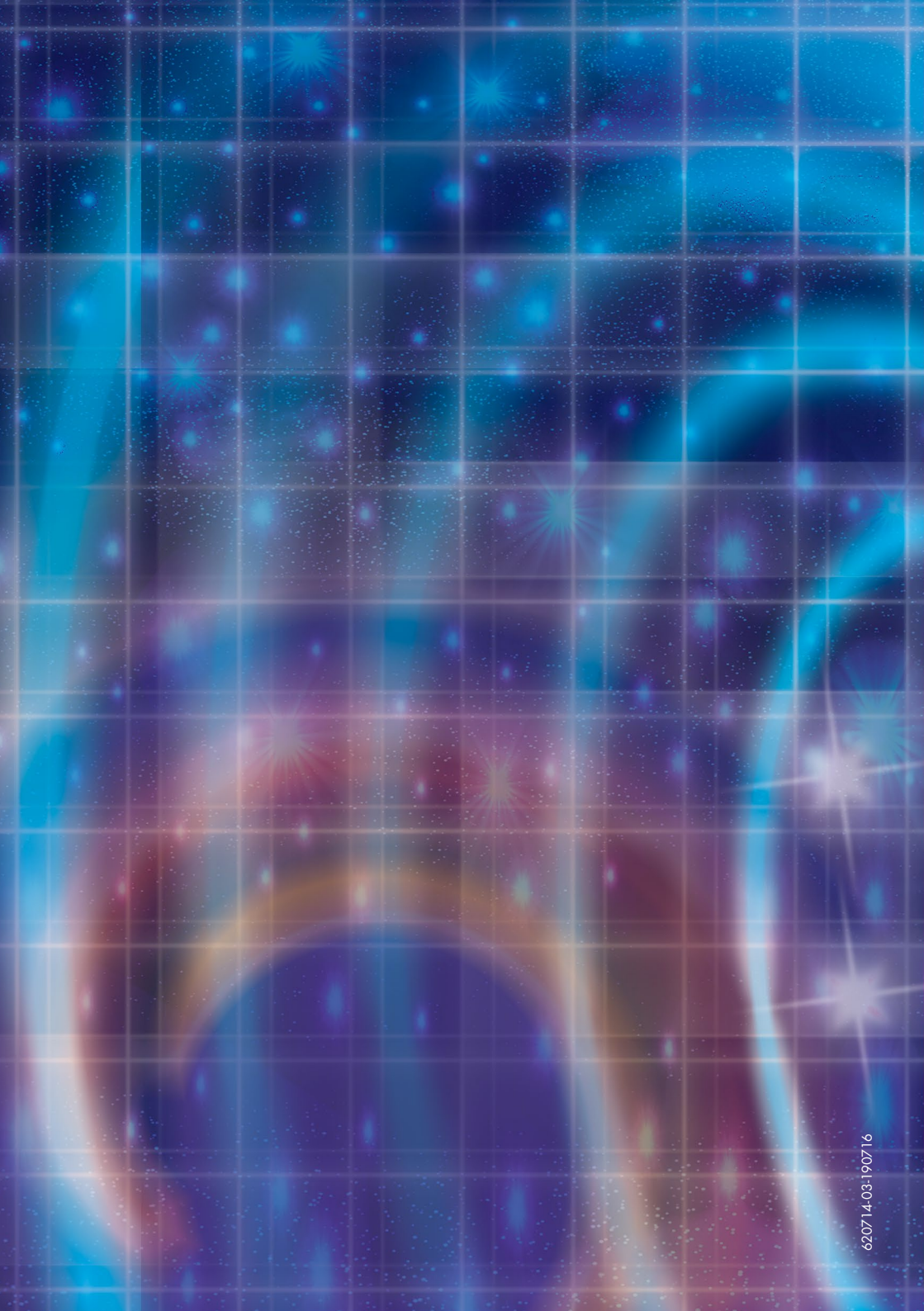

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