Magic tricks that are really science

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Twelve magic tricks for kids that are really science, from surface tension to fluorescence, with the steps a grown-up does and why no potion is ever a drink.

Twelve of the eighty tricks in the Peabody Magic Shop are really science: surface tension, light bending through water, air pressure, static, and a dye that changes colour. Ten of them are the Potion Lab's, made with water, pepper, salt, soap and juice from the kitchen, and two are paper tricks whose pages carry a science box too. Every potion is for looking at, never for drinking, and two steps in the whole set belong to a grown-up.

I built the Magic Shop this week around real tricks done with what is already in the house, and the science tricks have something the others don't: the explanation is a second surprise. The trick gets the gasp; the why gets a child trying it again with salt instead of soap.

The twelve, easiest first

- Trick: The Hole in Your Hand · Level: Apprentice · Ages: 5 to 9 · Learn it in: 1 minute · The science: Two eyes, two pictures
- Trick: Pepper Scatter · Level: Apprentice · Ages: 5 to 9 · Learn it in: 2 minutes · The science: Surface tension
- Trick: The Arrow Flip · Level: Apprentice · Ages: 5 to 9 · Learn it in: 2 minutes · The science: Light bending through a glass of water
- Trick: The Water Vanish · Level: Apprentice · Ages: 5 to 10 · Learn it in: 2 minutes · The science: Total internal reflection
- Trick: The Glowing Potion · Level: Apprentice · Ages: 6 to 11 · Learn it in: 2 minutes · The science: Fluorescence
- Trick: The Upside-Down Water Card · Level: Apprentice · Ages: 6 to 11 · Learn it in: 5 minutes · The science: Air pressure
- Trick: The Balloon Static Wand · Level: Apprentice · Ages: 5 to 10 · Learn it in: 5 minutes · The science: Static charge
- Trick: The Obedient Egg · Level: Apprentice · Ages: 6 to 11 · Learn it in: 5 minutes · The science: Salt makes water heavier
- Trick: The Floating Paperclip · Level: Apprentice · Ages: 6 to 11 · Learn it in: 5 minutes · The science: Surface tension
- Trick: Secret Message Ink · Level: Apprentice · Ages: 5 to 10 · Learn it in: 10 minutes · The science: A juice dye meeting baking soda
- Trick: The Colour-Changing Potion · Level: Conjurer · Ages: 6 to 11 · Learn it in: 10 minutes · The science: An indicator
- Trick: The Loop of Mystery · Level: Conjurer · Ages: 7 to 12 · Learn it in: 15 minutes ·

The science: A loop with only one side

Eleven are Apprentice tricks, which in the shop means they work the first try. The two Conjurer tricks need a little setting up before the show. None is a Wizard trick: the science does the hard part, so there is no secret move to practise for days.

Water has a skin

Pepper Scatter is the one to start with. Pepper floats on a bowl of water; a friend touches the middle and nothing happens; you touch it and the pepper races to the edges. The top of the water behaves like a stretchy skin, and a tiny bit of soap on your fingertip weakens it where you touch, so the stronger skin further out wins the tug-of-war.

The Floating Paperclip is the same skin doing the opposite job: a metal paperclip laid flat sits on top of the water, which it has no business doing, until one soapy finger touches the edge and down it goes. Once there is soap in the water neither trick will work again, so both pages say to start with fresh water each time.

Light that bends

Three of the twelve are about what light does on its way to your eyes. In the Arrow Flip, an arrow drawn on paper turns round when you pour water into the glass in front of it, because a round glass of water bends the light so much that left and right swap. In the Water Vanish, a coin under a glass disappears when the glass is filled and covered: past a certain angle the light can't leave the water sideways, so none of it reaches anyone looking through the side. The shop suggests doing them one after the other, the same science doing opposite jobs.

The Glowing Potion is the dramatic one. Two glasses of clear liquid look identical until a small ultraviolet torch goes on, and one glows bright blue. One is tap water and the other is tonic water, which has quinine in it, and quinine takes in ultraviolet light and gives it back as blue light.

The Hole in Your Hand is about the eyes themselves. Look through a paper tube with one eye and at your hand with the other, and your brain blends the two pictures into a palm with a hole in it.

Pushes and pulls you can't see

The Upside-Down Water Card has no secret move at all: a full glass with a card on top is turned over, and the card stays put because the air pushing up is stronger than the water pushing down. The Balloon Static Wand makes paper pieces stand up and follow a balloon that has been rubbed on somebody's hair. The Obedient Egg sinks, then rises when enough salt is stirred in, because salty water is heavier than the egg.

Colours that change

Secret Message Ink is a blank sheet that grows a message when it is painted with grape juice: the message was written earlier in baking soda and water and left to dry. The Colour-Changing Potion pours purple and arrives green, because grape juice contains a dye that changes colour with what it meets. Scientists call that an indicator.

The odd one out is the Loop of Mystery. Three paper loops are cut down the middle and do three different things, and the one with a half twist is a Möbius band, with only one side. Its page files that under science; it is really a piece of mathematics, which is even better.

What a grown-up does

Two steps in the twelve are a grown-up's, and the trick pages say so out loud:

- The Glowing Potion: a grown-up holds the ultraviolet torch the whole time, pointing it down at the table, never towards anybody's eyes.
- The Balloon Static Wand: a grown-up blows up the balloon and ties it, and picks up any popped bits straight away.

Beyond those two steps, the Loop of Mystery uses kid scissors, and its page asks a grown-up to help with the cutting and to stay beside it; the scissors only ever cut paper. Secret Message Ink and the Colour-Changing Potion use grape juice, which stains, so an old cloth goes down first.

And the rule over the whole Potion Lab: a potion is for looking at, not for drinking. That line is on every one of the ten Potion Lab pages, and the Glowing Potion adds that tonic water is a grown-up's bitter drink, so that potion is for looking at, not tasting. The Water Vanish uses a coin and the Floating Paperclip uses paperclips, so both pages also carry the shop's line for little brothers and sisters under 4.

Where to go next

The science magic tricks page has every one in one table. The kitchen-science Top 10 ranks the ten Potion Lab tricks easiest first, and the science hiding in magic guide gives the first line of each one's science and how to turn a trick into an experiment. If you would rather not choose, Pick me a trick asks four three-box questions and hands over one trick.

Questions grown-ups ask

Can my child drink a potion afterwards?

No. The shop treats every potion as something to look at, and every Potion Lab page says so. Pour it away afterwards and wash the glass, as the Obedient Egg and Colour-Changing Potion pages say.

Should my child explain the science to the audience?

After the trick, not before. The shop's own advice is to do the trick first and explain it afterwards, because the science is a second surprise. Then ask a question: what if we used salt instead of soap, or a square glass?

Which one for a five-year-old?

Pepper Scatter, the Arrow Flip or the Water Vanish: each is an Apprentice trick that takes two minutes to learn and fits from age 5. The Hole in Your Hand takes one minute and fits from 5 too.

Peabody (peabody.kids) is free through the end of 2026, and the Magic Shop needs no sign-up. For the stories behind the experiments, the library is open too.

Free at peabody.kids/blog/magic-tricks-that-are-really-science