



We're big believers in the power of play – and it's never been more necessary than it is now.

We're sharing all these activities from our book, *The Nature of Play: A handbook of nature-based activities for all seasons*, as free printable activities to explore at home. And whether you're remaining indoors or not, they offer a chance to slow down, connect once more with the world outside, and lose yourself in your imagination.

Like all the activities in *The Nature of Play*, they're simple, seasonal, require little more than curiosity, and provide a precious few minutes of calm enjoyment for children (and brief respite for adults!).

Please enjoy, share – and show us your wonderful creations on Instagram (@fannyandalexander).

—
1.5 hours
All seasons
Indoors
Adult assistance required ••

Build your own marble run

Rig up an obstacle course and balls away!

GATHER TOGETHER

- . A big cardboard box
- . Cardboard tubes (from inside wrapping paper, kitchen roll, cling film etc)
- . Scrap cardboard (cereal boxes and that kind of thing)
- . Newspaper to roll into tubes
- . Plastic bottles
- . Sticky tape
- . Glue
- . Blu Tack
- . Scissors
- . Paper cup
- . Marbles
- . Any extra 'features' you'd like to add, like funnels, old pinwheel toys, or things to decorate with

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WHOSE MARBLE IS FASTEST?
DO DIFFERENT-SIZED MARBLES
GO FASTER OR SLOWER?
CAN YOU MAKE IT EVEN MORE
COMPLICATED?



LET'S GO!

Step 1. Cut out your frame. Cut one side off the biggest cardboard box you can find (Fig. 1). This will become the frame for your marble run so you want as much room as possible to work with.

Step 2. Make an opening. With your box on its end and the open side facing outwards, cut a small hole in the top where you'll drop in your marble (Fig. 2).

Step 3. Build your run. Create the course your marble will run along using the items you've plundered from your recycling box. You want it to have as many twists and turns as possible. Generally, you'll use tubes to carry your marble across each level, and holes, funnels or bends to turn corners and drop down to the next level.

Starting below your hole, tape or glue a cardboard tube across your box (angled downwards so that gravity helps your marble along), making sure there's a hole in the tube below your entry point. At the end of your first tube, create a connection (cut a hole in the bottom at the end of the tube, or tape rolled-up newspaper or curved cardboard to the end of your tube) so the marble can drop down to the tube below (Fig. 3).

Step 4. Add extras. Cut the top off a plastic bottle and use it upside down to drop a marble down a level. Cut holes along the bottom of a tube – will the marble drop out at a different point if it's going faster or slower? Experiment and see. Use plenty of tape or glue as you go.

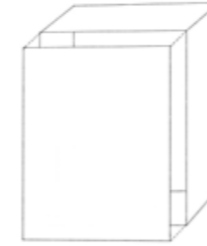


Fig. 1

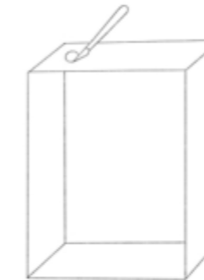


Fig. 2

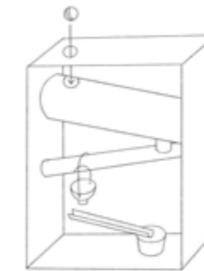


Fig. 3

Step 5. Keep building until you reach the bottom. Test your run occasionally as you add to it – if you want your marble to go faster, angle the tubes downwards. If you want to slow it down, tilt the tubes up, or add obstacles to your course. Make it as complicated as you like.

Step 6. Add a small cup at the very end of your run to catch your marbles in.

Step 7. Ready, steady, go! Drop a marble through your hole at the top to send it down your run. Whose marble is fastest? Do different-sized marbles go faster or slower? Can you make it even more complicated? (Advanced marble-runners can create several different tube endings for the marble to go down, with points for which tube it finally comes out of.)

FROM THE ARCHIVES

Can you imagine how much fun a mega marble run would be? That's just what a team in Flumserberg, Switzerland created when they built the world's longest marble run, measuring an incredible 2,858.9 metres long! If you train to become a marble run maestro, you might one day snatch that record yourself...

FOR BUDDING ENGINEERS, A MARBLE RUN IS THE ULTIMATE PLAYGROUND.

DEAR GROWN-UPS

For budding engineers, a marble run is the ultimate playground. As an open-ended activity it presents plenty of scope for creativity and ingenuity to direct the outcome, and the three-dimensional nature of the task gently develops understandings of gravity, momentum and spatial reasoning. It's not an easy activity, nor one that offers instant gratification, so there's an opportunity to foster patience and problem-solving in tackling this one, too.

1 hour
All seasons
Indoors

Make a flipbook

Drawings come to life with this simple trick.

GATHER TOGETHER

- . A stack of lightweight paper — about 50 sheets is perfect. You could use a notebook or use clips, staples or glue to bind a stack of paper yourself
- . Drawing materials (pencils, pens and any media you'd like to use to add colour)



LET'S GO!

Step 1. Think about what you're going to draw. A flipbook is the simplest kind of animation there is — the idea is that you create a sequence of drawings that gradually change from page to page so that when you flip through them quickly they appear to be moving, just like a cartoon. (In animations, each picture is called a 'frame', and up to 60 frames are played per second.) The first time you try this, you might like to choose something simple, like a stick figure jumping up and down or a sun rising.

Step 2. Create your first drawing. Use the last page of your notebook — this will form the starting scene of your animation, which you'll flip from back to front. Try to avoid the top left of your

page if you can — when you flip the pages later, you won't see that area as clearly. Draw it first in pencil, and then ink over the top when you're happy with it.

Step 3. Draw your next frame. On the second-to-last page of your notebook, re-draw the same scene as before, but with one very slight movement. If it's a sun rising, the whole image should be almost identical but show the sun slightly higher in the sky. If it's a stick person, they might be starting to bend at the knees a little as they prepare to jump.

Step 4. Continue adding frames. Page by page, subtle changes should work towards the overall movement you're after. Once you've done a few frames, try flipping through your book



THE HUMAN EYE AND BRAIN CAN ONLY PROCESS 10 TO 12 SEPARATE IMAGES IN A SECOND, WITH EACH IMAGE STAYING IN THE BRAIN FOR A 15TH OF A SECOND.

to see how it's coming along to give you an idea of whether you need to make your changes bigger or smaller.

Step 5. Colour it. When the sequence is complete, use paints, pencils or markers to add colour to each frame. As before, the colours should stay the same page-by-page for consistency, but clever changes (the sky behind the rising sun becoming streaked with colour, or your jumping person's cheeks reddening) can make it seem even more lifelike.

Step 6. Flip it! Your animation should play out fairly seamlessly. Now try another one, increasing in complexity now that you've mastered the basics...

FROM THE ARCHIVES

When you watch an animation, it's literally your eyes playing tricks on you, turning a series of still images into a continuous moving image. Filmmakers call this 'persistence of vision'. The human eye and brain can only process 10 to 12 separate images in a second, with each image staying in the brain for a 15th of a second. If another image enters the brain during that time, it overlaps with the previous image and is read as continuous motion. So next time you're watching a movie, consider how many still images you're actually looking at to really boggle your mind's eye.

DEAR GROWN-UPS

Creating a flipbook conjures a special kind of wonder: seeing your images come to life is an eye-widening experience. It's also a great way to cultivate patience and problem-solving, requiring the animator to break down a complex sequence into a series of smaller gestures and illustrate them carefully. And, of course, it comes with all the benefits of any drawing, from mastering hand/eye coordination to considering perspective, texture, depth of field and more.

—
Up to 3 hours
All seasons
Indoors
Adult assistance required ••

Create a scene

Set the stage and who knows what tales might unfold?

GATHER TOGETHER

- . A sturdy cardboard box (ideally measuring around 30cm x 30cm x 30cm)
- . Sticky tape
- . Craft glue
- . Scissors
- . Coloured paper and cardboard
- . Scraps of fabric, old wallpaper and wrapping paper
- . Washable paints
- . Egg cartons, matches and wooden lollipop sticks
- . Felt-tip pens



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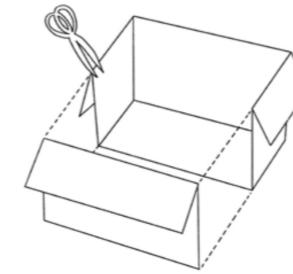


Fig. 1

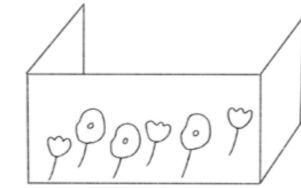


Fig. 2

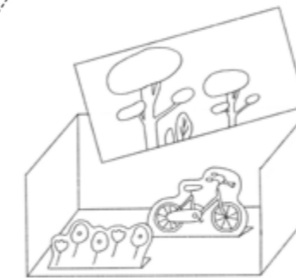


Fig. 3

LET'S GO!

Step 1. Choose your scene. You're going to make a set, like a theatre backdrop, for staging plays of your own creation. So the first thing you need to do is to think about what kind of scene you're inspired by. A forest bathed in moonlight, perhaps? An underwater scene in Atlantis? A Victorian doll's house? Or how about the surface of a never-before-seen planet?

Step 2. Get your box ready. Trim off any flaps you don't need (see Fig. 1), reinforce any joins with tape, and decorate the outside of your box in keeping with your theme (see Fig. 2). Note that most marker pen colours will look dark and drab on cardboard, so for brighter colours, glue on coloured paper.

Step 3. Decorate the backdrop. Line the box with wallpaper or patterned paper, or paint it. You can glue on other materials for texture, too – maybe moss and twigs for a forest scene, blue cellophane and shells for your underwater backdrop, or tinfoil for a cosmic landscape. Let your imagination run wild!

Step 4. Decorate the 'stage'. You can do this two ways: Diorama-style, where you create staggered rows to create a sense of depth. For instance, if you're creating a forest, use a piece of stiff paper to draw and cut out lots of trees and boulders, leaving a small 'foot' (about an inch) at the bottom of each one. Fold the 'foot' and glue it to the bottom of your scene

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DOLLHOUSES WEREN'T ALWAYS
THE THEATRES FOR CHILDREN'S
IMAGINATIONS THAT THEY ARE
TODAY...

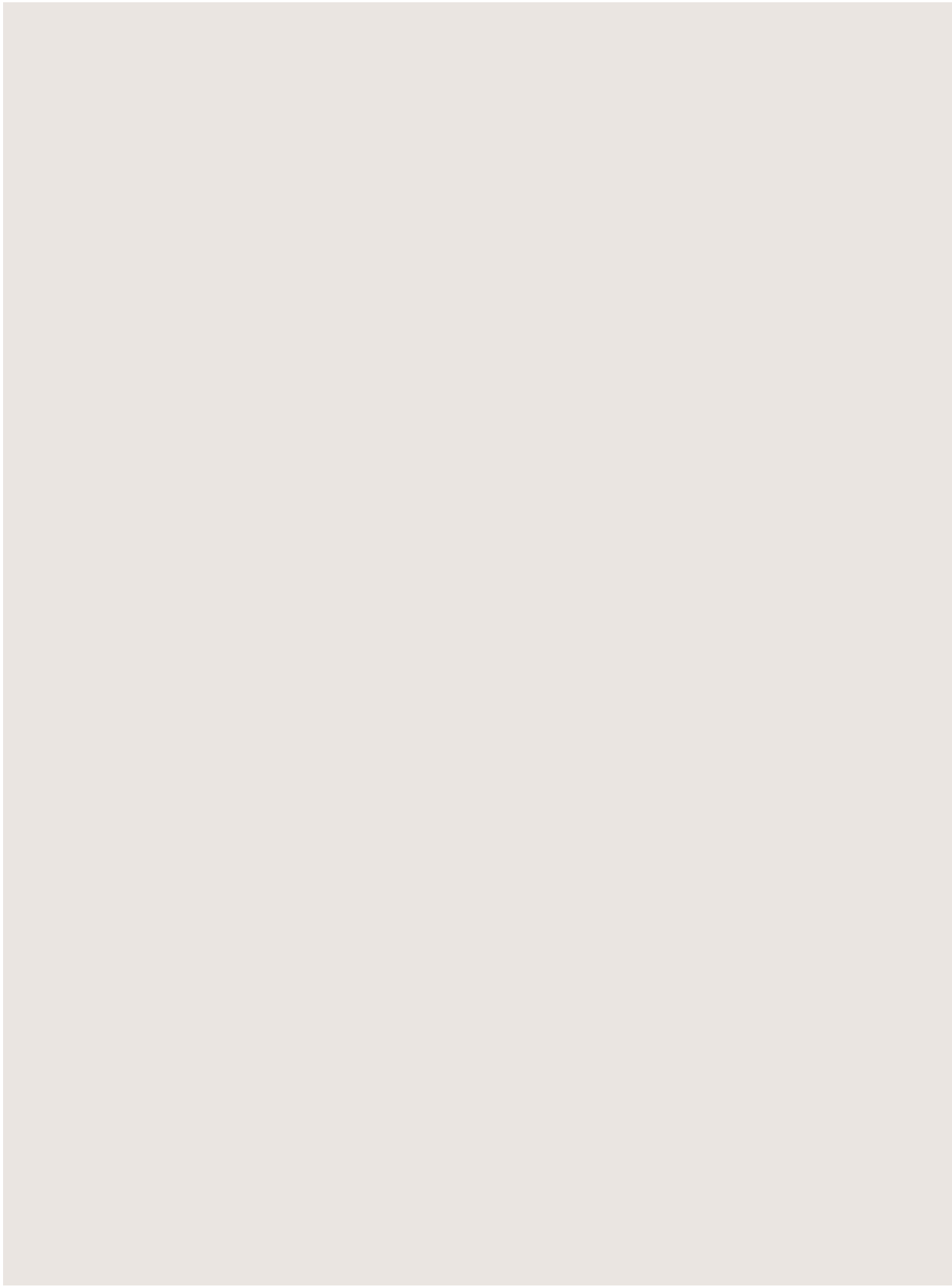
towards the back, positioning it so that it stands up by itself. Repeat until you have a back row, then glue in a new row of trees a few inches further forward (see Fig.3). It creates a lovely 3D effect. Dollhouse-style : This is where you use your space as a room and furnish it how you like. Making the furniture is the fun part – matchsticks can be glued together to build bed frames, chairs and tables and matchboxes can be stacked to form drawers. Egg cartons can be cut to build sofas and armchairs, and lollipop sticks can be used to make fridges, wardrobes – or anything you like! Sew or glue pieces of fabric to create pillows, blankets and rugs.

FROM THE ARCHIVES

Although they're beloved by many children, dollhouses were actually invented for adults. The earliest dollhouses were called 'cabinet houses' and were created as status symbols for wealthy Dutch, German and English aristocracy. Later on, the 'baby house' was created for children. They were perfect, scaled-down replicas of the family homes they lived in, and they were used to teach daughters how to run their future households. Luckily for you, yours is purely for fun!

DEAR GROWN-UPS

As you have read, dollhouses weren't always the theatres for children's imaginations that they are today. But that's what makes them such enduringly magical things – they're kingdoms over which children have complete dominion. They can explore alternative realities, inhabit others' points of view, replay real scenarios with different outcomes – using their imaginations to develop the social skills that help them to navigate the real world.



—
1 hour
All seasons
Indoors
•• Adult assistance required

Weave a simple basket

Make a basket just like people have been doing for aeons.



GATHER TOGETHER

- . A roll of brown paper
- . A ruler
- . A pencil
- . Scissors (a child-safe version, or ask an adult to help)
- . Sticky tape

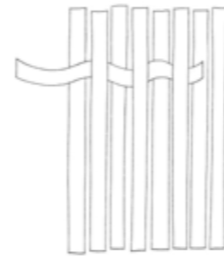


Fig. 1

THE TECHNIQUES YOU'RE USING
HERE HAVEN'T CHANGED FOR
27,000 YEARS.

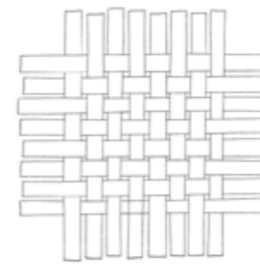


Fig. 2

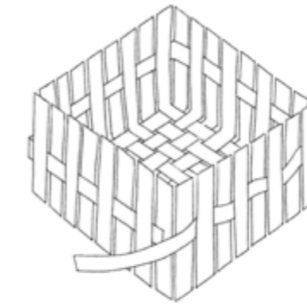


Fig. 3

LET'S GO!

Step 1. Prepare your strips. Using your ruler, mark out and carefully cut (or ask an adult to cut) 16 strips of brown paper each measuring 30cm long and 3cm wide. Cut out another 6 strips measuring 50cm long and 3cm wide. Fold each strip into thirds lengthwise.

Step 2. Form your base. Lie eight of the shorter strips side-by-side horizontally. Lie the other eight shorter strips vertically on top. Take the first vertical strip and weave it alternately over and under the horizontal strips (Fig. 1). Repeat with the other vertical strips, making sure the weave is as close as possible (Fig. 2).

Step 3. Add sides. Fold the strips up along each edge of your base as shown.

Starting from one corner, weave one of your longer strips over and under the loose side strips, creasing at each corner to form a sharp bend (Fig. 3). When you've done a complete row, take another strip and begin a new row above. Keeping adding rows until you have about 1cm of your original base strips still showing above.

Step 4. Tidy it up. Tuck loose ends inside your basket and use a small piece of sticky tape to stick them down as invisibly as you can. Voilà!

FROM THE ARCHIVES

Weaving is one of those ancient human skills that transcends place and time – any culture you can think of probably had a tradition of its own. Baskets were invaluable for gathering food, carrying babies, storing things and catching birds or fish, and they could be made using whatever materials could be sourced locally, like reeds, straw, leaves or bark. The techniques you're using here are virtually unchanged from those used to make the earliest known baskets, which date back to 27,000BC.

DEAR GROWN-UPS

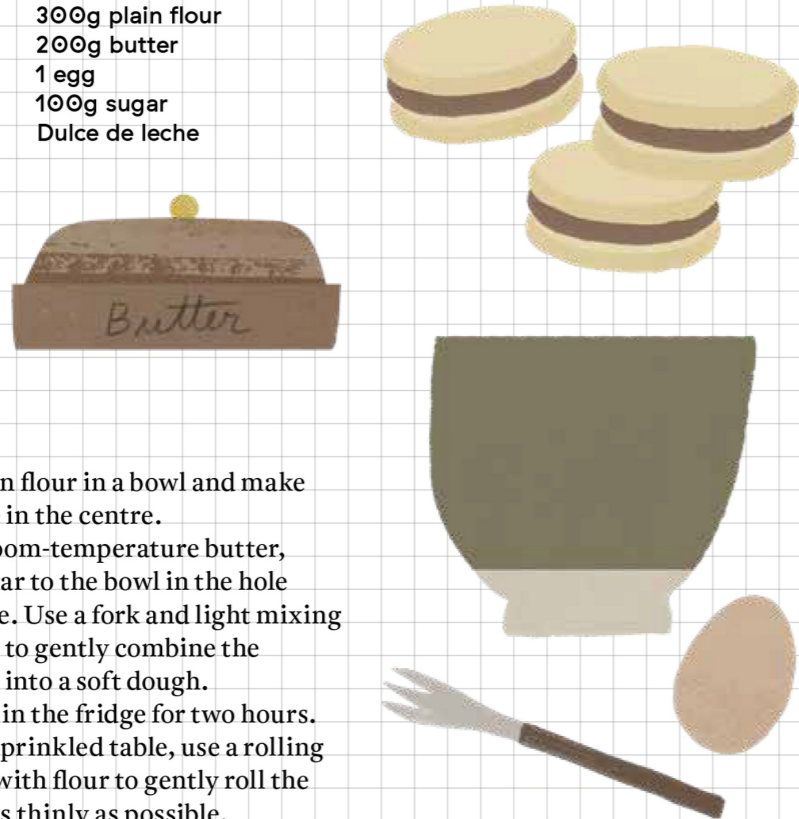
As well as producing beautiful, functional objects at the end, the process of weaving is brilliantly meditative, easy to learn and swiftly gratifying. It's such a universal practice, but it can also prompt consideration for the ways in which cultures and humans throughout time are both distinct and different.

ALFAJORES

These buttery biscuits are traditionally eaten around Christmas-time in Spain and parts of Latin America — but they're absolutely delicious any time of year.

75 MINS
PREP
8 TO 10
MINS
COOKING

INGREDIENTS
300g plain flour
200g butter
1 egg
100g sugar
Dulce de leche



Put the plain flour in a bowl and make a small hole in the centre.
Add your room-temperature butter, egg and sugar to the bowl in the hole you've made. Use a fork and light mixing movements to gently combine the ingredients into a soft dough.
Rest dough in the fridge for two hours.
On a flour-sprinkled table, use a rolling pin dusted with flour to gently roll the dough out as thinly as possible.
Use a small glass to press out rounds of your dough and place on a baking tray.
Cook them in an oven at 175°C for 8 minutes or until dark beige.
Allow to cool and then sandwich two together with dulce de leche.

WINTER RECIPE

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Fanny & Alexander - @fannyandalexander

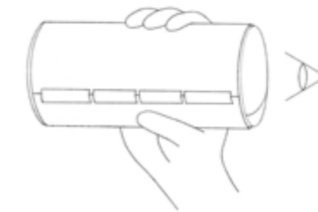
1 hour
All seasons
Indoors and outdoors
•• Adult assistance required

Make your own pinhole camera

Get a new perspective on the world with this simple, satisfying camera.

GATHER TOGETHER

- . An empty tube of crisps (Pringles or similar)
- . A sharp pencil or marker pen
- . A craft knife (ask an adult to help you with this part)
- . A drawing pin
- . Greaseproof paper
- . Glue
- . Scissors
- . A ruler
- . Masking tape
- . Aluminium foil



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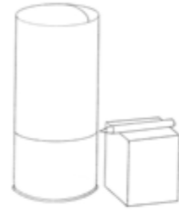


Fig. 1

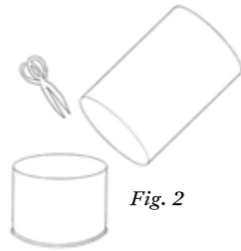


Fig. 2

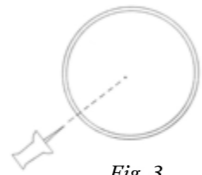


Fig. 3

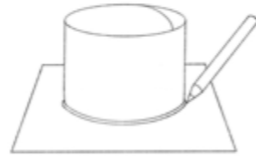


Fig. 4



Fig. 5

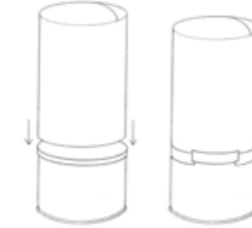


Fig. 6

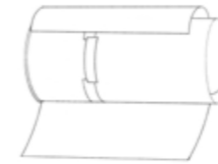


Fig. 7

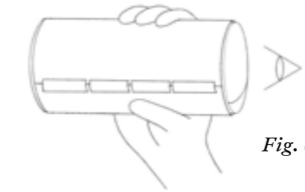


Fig. 8

ON A CAMERA, THE HOLE THAT LIGHT ENTERS THROUGH IS CALLED THE APERTURE.

LET'S GO!

Step 1. Prepare the body of your camera. Give the inside of your tube a thorough clean. Keep the lid as you'll need it in a minute.

Step 2. Mark your tube. About 5cm from the bottom of the tube, draw a line all the way around your cylinder. A good way to keep the line even is to find a small cup or box that's about 5cm tall and, putting it next to your tube, lie your marker or pencil across it so that the tip is just touching the outside of the tube. Don't move the pen – just hold it steady with one hand and rotate the tube with the other – you should get a straight line all the way around (Fig. 1).

Step 3. Cut your tube. Ask an adult to cut all the way around the tube where

you've marked your line using a sharp craft knife (Fig.2).

Step 4. Create your hole. On a camera, the hole that the light enters is called the aperture (which just means 'opening'). Push your drawing pin into the centre of the metal bottom of your tube to make a small hole (Fig. 3).

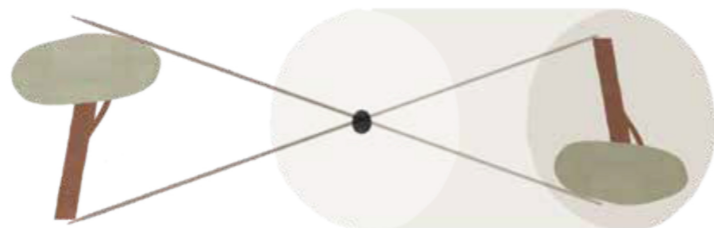
Step 5. Make your screen. On a piece of greaseproof paper or baking parchment, trace around the edge of your lid and then carefully cut out the circle shape. Glue the paper circle to the inside of your lid. Put the finished lid on top of the shorter piece of tube (Fig. 4).

Stack the longer piece on top and wrap the join with masking tape (Fig. 5).

Step 6. Wrap it well. Take a piece of aluminium foil measuring about 30cm by 20cm, and lie the tube on top so that the bottom lines up with the foil's edge. Roll the foil around the tube slightly and tape down one side. Wrap the whole tube tightly with foil and tape down – you need it to be completely sealed so that no light can enter your tube (Fig. 6). Tuck any overhanging foil into the open end of your tube.

Step 7. Take it for a spin. If it's a sunny day, cup your hands around the end of the tube to prevent light from entering, and look through the open end of your camera – you should see upside-down images on the screen inside (Fig. 7)!

Hold your hand in front of the aperture and move it up and down. The image you see will be doing the reverse! If it's a gloomy day, try it inside – turn a light on in a dimly lit room and stand facing it 1.5 metres away. Drape a blanket over your head to exclude any light from entering. You should see your lamp appear the wrong way up!



FROM THE ARCHIVES

This is the earliest kind of camera, and it's called a 'camera obscura'. They were used in China more than 2,500 years ago, and in 1,000AD an astronomer, Ibn al-Haytham, realised that they could be used to safely view solar eclipses. Ancient cultures feared solar eclipses, but there's nothing dangerous at all about them – provided you never look directly at the sun, which could seriously damage your vision. But with your camera obscura on hand, you're all set!

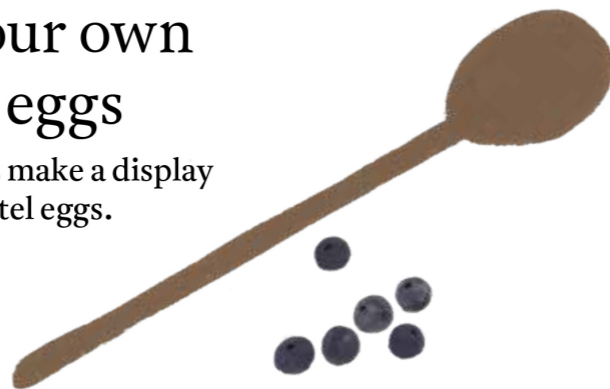
DEAR GROWN-UPS

The question this activity invariably provokes is 'But why is the image upside down?' So you're ready with a response, it's because light reflects off the surface of the object you're looking at. But it travels in a straight line, so light from the top of an object will pass downwards through the pinhole and to the bottom of the screen, and light from the bottom of the object will travel upwards through the aperture, making the object appear inverted. Now you know!

—
Overnight
All seasons
Indoors
Adult assistance required ••

Dye your own Easter eggs

Natural dyes make a display
of pretty pastel eggs.



LET'S GO!

Step 1. Choose your colours.

Please note: many of these recipes need boiling water or use of a stove – please ask an adult for help if you aren't usually allowed to do this yourself.

Blue. Put 1/4 red cabbage cut into chunks into a pan filled with four cups of boiling water. Add two tablespoons of white vinegar and turn off the heat. Cool to room temperature and remove the cabbage from the pan. Soak the eggs in the water overnight.

Grey-blue. Add a cup of frozen blueberries to a cup of warm water. When the mixture comes to room temperature, remove the blueberries (when they're drained, they're perfect for pancakes or snacks!) and soak your

eggs in the coloured water overnight.

Lavender. Mix a cup of grape juice with a tablespoon of white vinegar and soak your eggs overnight.

Pale pink. Take one cup of juice from canned beetroot and add one tablespoon of white vinegar. Soak eggs overnight (or less time for a gentler hue).

Golden brown. Simmer two tablespoons of dill seeds in a cup of water for 15 minutes. Strain the liquid through a sieve into a small bowl, and add two teaspoons of white vinegar. Add your eggs to the liquid and leave overnight.

Mustard yellow. Add two tablespoons of turmeric powder and two teaspoons of white vinegar to a cup of boiling water and stir. Add your eggs.

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GATHER TOGETHER

- . As many eggs as you'd like to dye
- . Several tubs or bowls (one for each dye)
- . The ingredients for your colours of choice (see below)



Green. Put the skins of six red onions into a pan with two cups of water and simmer on the stove for 15 minutes. Remove the skins and add three teaspoons of white vinegar to the pan. Soak your eggs overnight in the liquid. **Step 2.** Store your eggs. Once they've reached your desired colour (leaving them for longer will result in a deeper dye, while less time will mean they're paler), take them out of the dye, pat them dry gently with a paper towel, and store in the fridge until you want to put them on display.

Step 3. Eat them! Don't forget to use your eggs after you've displayed them – unless they're cracked, they shouldn't have absorbed any of the flavours of the

dyes, so you can still use the raw eggs in any recipe you like – scrambled or poached, custard or cake, the options are almost endless!



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EGG-DYEING HAS BEEN AROUND FOR CENTURIES. IT'S STILL A GENTLE, MAGIC TRICK TO SEE THEM TRANSFORMED.

FROM THE ARCHIVES

Eggs don't give much away, so if you want to know if yours are fresh, just pop them in a bowl of room temperature water. If it lies on its side at the bottom of the bowl, it's fresh. If it stands on one end at the bottom, it's okay to eat, but do it quickly (or hard-boil it). If it floats to the top, it's old and shouldn't be eaten. That's because eggshells are porous (full of lots of minuscule holes) so the older they get, the more air enters the shell, which makes them float. If only it was as easy to solve the age-old question: which came first, the chicken or the egg?

DEAR GROWN-UPS

Egg-dyeing has been around for centuries – it's still a gentle, magic trick to see them transformed using only scraps of vegetables, water and time. You probably have most of the materials on hand, so you can try it out on any rainy day, though it's especially sweet at Easter. Try your own experiments, too – use wax crayons to create pictures on your egg's surface or whatever spices you have in your cup-board. The end product may be pretty, but it's the playing that's the point.

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