Spies & Gadgets Week
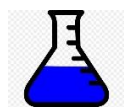
Can you think of any famous spies or secret agents, James Bond is perhaps the first one we think of? This week we'll be pretending to be spies… with our gadgets and secret codes. Have fun!

Invisible Ink with Lemon Juice

Making invisible ink is a lot of fun, you can pretend you are a secret agent as you keep all your secret codes and messages hidden from others. All you need is some basic household objects and the hidden power of lemon juice.

What you'll need:

- Half a lemon
- Water
- Spoon
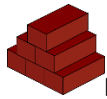- Bowl
- Cotton bud
- White paper
- Lamp or other light bulb

Instructions:

1. Squeeze some lemon juice into the bowl and add a few drops of water.
2. Mix the water and lemon juice with the spoon.
3. Dip the cotton bud into the mixture and write a message onto the white paper.
4. Wait for the juice to dry so it becomes completely invisible.
5. When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb.

What's happening?

Lemon juice is an organic substance that oxidizes and turns brown when heated. Diluting the lemon juice in water makes it very hard to notice when you apply it the paper, no one will be aware of its presence until it is heated and the secret message is revealed. Other substances which work in the same way include orange juice, honey, milk, onion juice, vinegar and wine. Invisible ink can also be made using chemical reactions or by viewing certain liquids under ultraviolet (UV) light
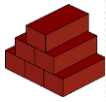
Make some gadgets

Using junk materials, paint, tape, glue and scissors make some special gadgets.

DIY Fingerprint Set

With this easy to make fingerprint kit kids will be able to examine fingerprints and see how each one is different.
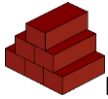

What you'll need:
- Flour or baby powder and a small container (old face compacts work well)
- Old make-up brush or similar
- Clear tape
- Black paper cut into small squares
- Magnifying glass
- Small box to store items in

How to make it:
- **Step 1**: Add the flour or baby powder slowly into a container with a lid – this is the fingerprint powder.
- **Step 2**: Cut the black paper into small squares (these will be used to stick the prints onto)
- **Step 3**: Add the fingerprint powder, brush, tape, magnifying glass, and black paper squares to the kit.
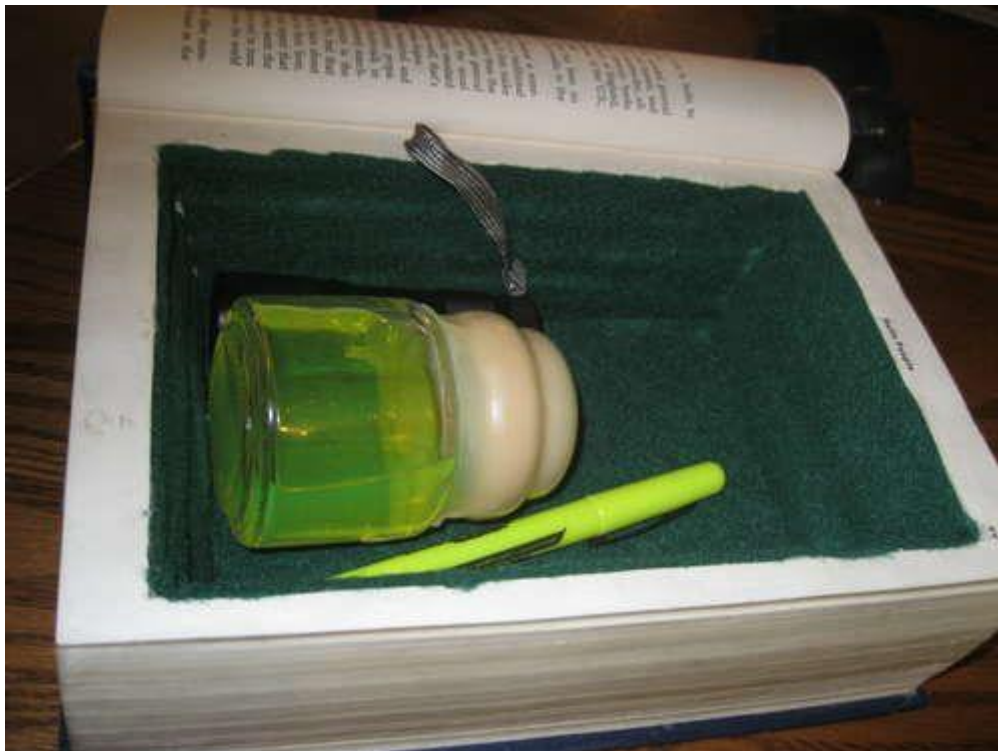
 Book safe for a secret agent

A big locked safe might seem like the smartest place to hide secrets but it's also the first-place intruders will look. Sometimes it's better to hide little treasures in plain sight and kids will be able to do just that with this neat book safe.
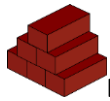
What you'll need:
- Fairly thick unwanted hardcover book
- Craft knife or similar cutting tool
- Ruler
- Pencil
- Wallpaper paste (optional)

How to make it:
- **Step 1**: Open the book close to the beginning, keeping in mind that the pages in front will obscure the hiding place, so don't make it too thin.
- **Step 2**: Using the ruler measure a rectangle on the right-hand page (not too close to the edges) and outline it with the pencil.
- **Step 3**: Now it's time to start cutting into the book. With the ruler on one edge of rectangle slice down into the pages, moving from one edge to the next, removing paper as you go. Continue until you've created an acceptable sized void.
- **Step 4** (Optional): Glue the cut pages (inside the void) together with wallpaper paste.

DIY Spy Kit in a Box

Most kids love to play the part of detective and with this kit, they'll be able to do just that. They'll be able to conduct their own investigations by collecting evidence, leaving secret messages, and going undercover…

What you'll need:
- Empty box
- Paint and stickers to decorate (optional)
- Spy sunglasses
- Moustache
- Binoculars
- Flashlight
- Notebook and pencil
- Spy ID card
- Fingerprint set
- Invisible ink

How to make it:
Simply pack all the tools into the box!

It's good to remember that no two DIY spy kits ever need to be the same. You can be creative and add whatever you think your child will enjoy.

You could also encourage your child to decorate their spy gear box with paint or stickers. You could even give the box a misleading label (like "old socks" or "receipts") to help it blend in and remain concealed.

DIY Secret Agent Costume

A real spy kid, don't you think so?

The essential items for a spy costume can be found in just about any wardrobe, which is good news if your kids want to be spies this Halloween. These outfits can be customized in hundreds of ways so just let your imagination run free!

What you'll need (standard costume):
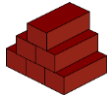- Dress or suit
- Trench coat
- Hat
- Sunglasses
- Spy ID
-

Other ideas to customize a secret agent costume:
Kids can have lots of fun putting together a secret agent costume and making fun gadgets to go along with it. Here are a few more accessories you might want to suggest for your budding kid spy:

- Spy earpiece
- Make-up or false mustache
- Binoculars
- Notebook and pencil

DIY Spy Periscope

A periscope is a nifty tool that can be used to see into areas above you and even around corners.

How it works:
When you look at the mirror at the bottom of the periscope you see a reflection of the mirror in the top.
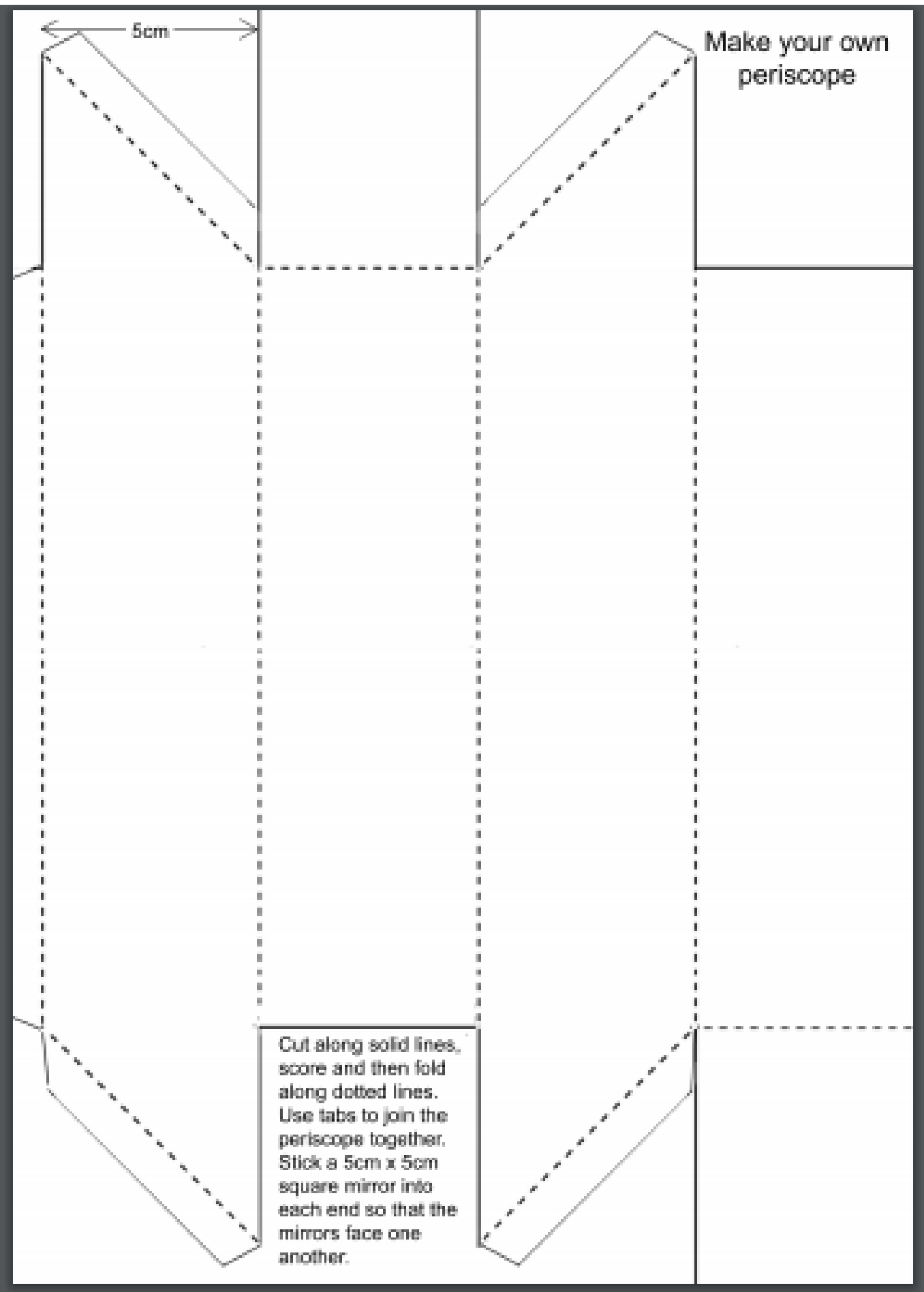
What you'll need:
- Large cereal box or A4 size (or larger piece) of cardboard
- Periscope template (see below)
- 2 mirrors 2" x 2" (5cm x 5cm)
- Glue stick or glue
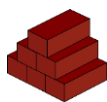- Tape
- Scissors
- Paint (Optional)

How to make it:
- **Step 1**: Print out a periscope template and glue it to the cardboard. Leave to dry.
- **Step 2**: Cut out the template.
- **Step 3**: Fold all the dotted lines inward using a ruler to keep them straight.
- **Step 4**: Glue down the flaps along the length of the template to form the shape of the periscope.
- **Step 5**: Now glue the flaps at the ends of the periscope.
- **Step 6**: Glue a mirror at each end of the periscope taking care to ensure they sit at a 45-degree angle but face each other.
- **Step 7** (Optional): Decorate or camouflage your periscope with paint.
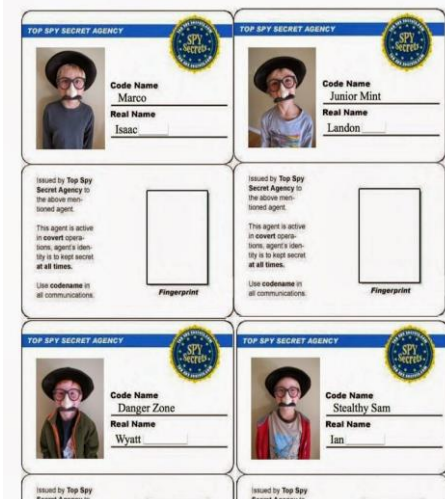
5cm

Make your own periscope

Cut along solid lines, score and then fold along dotted lines. Use tabs to join the periscope together. Stick a 5cm x 5cm square mirror into each end so that the mirrors face one another.

5cm

Spy ID Card

Secret agents need to be able to get into places that ordinary people cannot go and that's why having a spy ID card is so crucial. Choose a cool undercover name and then design a unique ID badge.

TOP SPY SECRET AGENCY

SPY Secrets

Pass Photo

Code Name

Real Name

Issued by **Top Spy Secret Agency** to the above mentioned agent.

This agent is active in **covert** operations, agent's identity is to kept secret **at all times.**

Use **codename** in all communications.

Fingerprint

What you'll need:
- Spy ID card template
- Piece of thin cardboard (a cereal box will work)
- Photo (maybe take one of your child in their spy costume!)
- Scissors
- Glue
- Ruler
- Tape
- Pen

How to make it:
- **Step 1**: Print out your template/design and glue it onto the cardboard (if your design has a back and front side, glue them together).
- **Step 2**: Cut the photo to size and glue it onto the card.
- **Step 3**: Fill in the name of the secret agent.
- **Step 4**: Cover the card with tape to prevent it from getting damaged or dirty.

Bonus tip: Punch a hole in the ID card and attach it to a keyring with some old keys and a mini-flashlight. Your kids will love it!
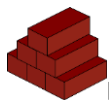
Keyhole Spy Gadget

With this nifty little keyhole, gadget kids can peak into a room and tell whether or not it's occupied without ever opening the door. And all it requires is a marble, some black paper and a few minutes!

What you'll need:
- Thick black paper cut to size
- Marble (clear ones work best)
- Tape

How to make it:
- **Step 1**: Cut the paper to size – about 8 x as long as the diameter of the marble, and 5 x as wide).
- **Step 2**: Place the marble in the middle of the paper and then roll the paper around it, keeping it tight and forming a tube.
- **Step 3**: Secure the tube with tape.
- **Step 4**: Using a toothpick or pen gently nudge the marble to one end of the tube until it just sticks out (half the marble inside the tube and half outside).

To use:

- Place the marble end of the tube through a keyhole
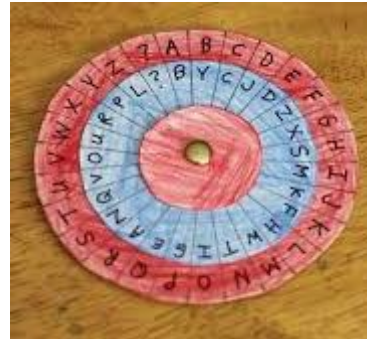- Look through the other end (the view will be upside down)

DIY Spy Decoder

Here is a video link to show you how to make this decoder.

Do you love to crack codes? This spy tool can make 27 different codes, which makes it quite tricky for someone to crack. If you want you can even make identical decoders so your friends and co spies can send encrypted messages to each other.

What you'll need:

- Poster board or thin cardboard
- Coloured pencils or crayons
- Scissors
- A compass
- A pencil
- A ruler
- A paper fastener
- A fine tip marker or pen

How to make it:

- **Step 1**: Cut out three circles from the poster board. The first one must be 3.25 inches in diameter, the second 2.5 inches in diameter, and third 1.5 inches in diameter.
- **Step 2**: Take the largest circle (3.25 inches) and using the compass make pencil marks 3/8" apart on the outside edge. Once you are done there should be 27 sections.
- **Step 3**: Poke a hole through the centre of the largest circle and the second biggest circle and then join them with the paper fastener. (Use the compass again to help you find the middle of each circle).
- **Step 4**: Use the ruler to draw a straight line from each of your pencil markings on the outside of the largest circle to the paper fastener.
- **Step 5**: Now grab the pen and fill in the alphabet on the outside circle and put a ? in the 27th segment.
- **Step 6**: Write the alphabet again in the middle circle (jumble it up to makes things more interesting!)
- **Step 7**: Add the smallest circle.
- **Step 8**: Decorate your spy decoder!

To use:

- Decide what the secret code will be – there are 27 to choose from, so get creative.
- To write a secret message, find the letter you want on the outside circle and write down the matching letter in the middle circle.
- To decipher a message, find the letter on the middle circle, and write down the matching letter from the outside circle.

You can also print out the template below.

W X Y Z ? A B C D E F G H I J K L M N O P Q R S T U V

W X Y Z ? A B C D E F G H I J K L M N O P Q R S T U V

DECODER