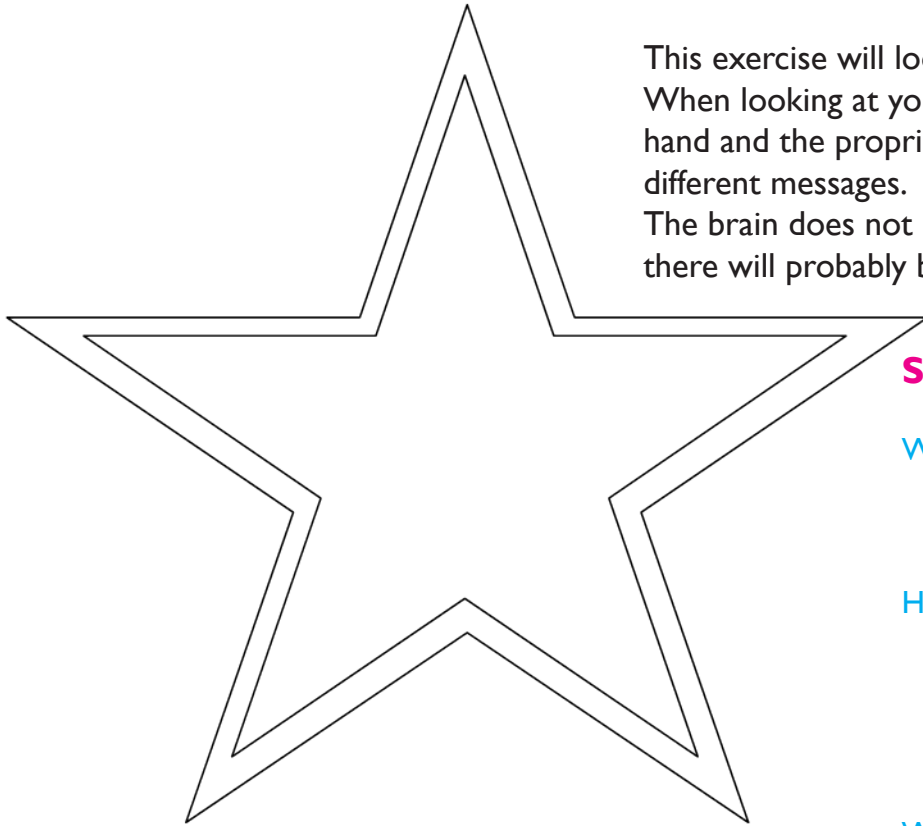


# Mirror Mirror



This exercise will look at the way we interpret reflections and how we can be confused by our eyes. When looking at your hand in a mirror your brain can become confused; the visual cues about your hand and the proprioception (the sense that tells you where parts of your body are) are sending different messages.

The brain does not know which set of messages to trust when sending commands to the hand, so there will probably be some trial and error before you figure it out!

## Some interesting questions about looking into the mirror...

### Where is my brain getting information from?

All of your senses give information to your brain. When you look into a mirror you are *seeing* where you are and *feeling* where you are.

### How do I feel where I am, what is proprioception?

Can you close your eyes and then touch your nose with your finger? This is because your brain knows where all the parts of your body are. This is another sense called proprioception, it is automatic like all of your senses, you can't switch it off. This is also why it can be used to confuse you!

### When else might my brain be confused by my senses?

Some people feel travel sick on car rides because they see things moving really fast but feel like they are not moving. This might happen a little bit in the Vortex Tunnel as well!

## What to try next...

You can confuse your senses in lots of ways, but the more you practice something the better your brain will be at understanding it. You could try writing your name using a mirror every day for a week and compare the results at the end. You might also want to look up Mr Stratton, he wanted to know how well you could adapt to strange senses and decided to wear goggles that turned everything upside down for five days straight!

# Mirror Mirror Activity Sheet

Try to keep inside the lines! You can practice a few times with the same star, just use a different colour each time to see if you get any better.

Make sure you don't cheat and sneak a peak, this will test how well your brain understands what you are seeing.

You will need some extra things to get started:



- Mirror
- Cardboard
- Coloured pencils or pens



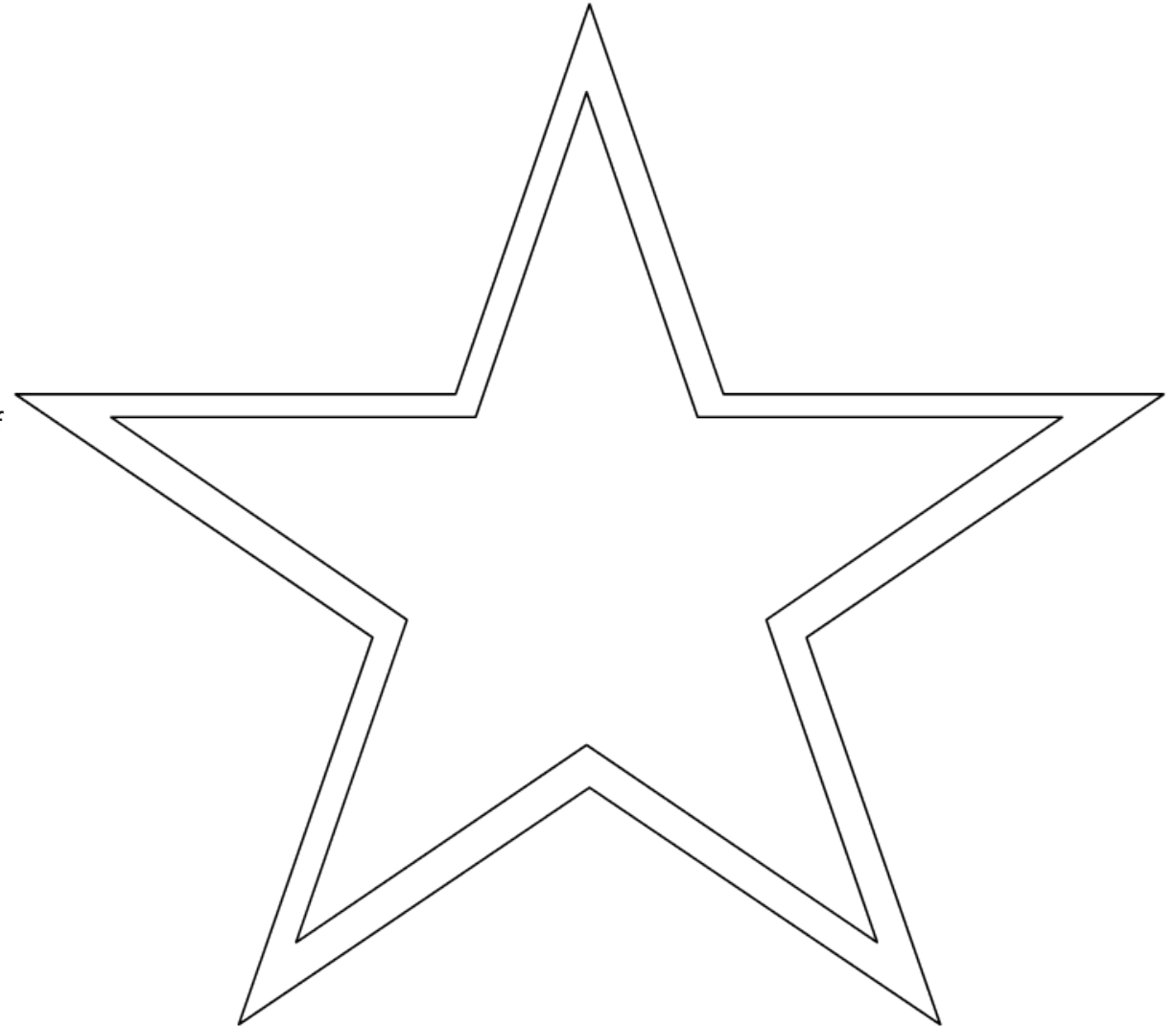
What to do:

1. Pair up and get your equipment ready.
2. Sit with your partner so that you can see the star in the mirror but not the paper in front of you.
3. Using a coloured pencil or pen try to draw between the lines of the star, by looking into the reflection in the mirror.
4. Swap over.
5. Now, try to write your name using the same technique.
6. Try to write your name with your eyes closed.

For Step by step instructions with photos check out:

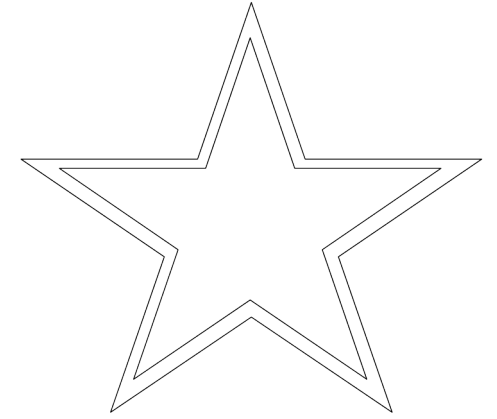
[www.camera-obscura.co.uk/mirrormirror](http://www.camera-obscura.co.uk/mirrormirror)

You can do the same thing with any shape. The more you practice the better you will get. This is because it takes your brain some time to understand this new way of 'seeing'.



# Mirror Mirror Question Sheet

Take a look at your star, did you get better with practice?



Is there any other time when the effect of a mirror can confuse your brain?

Are there any professions where this might be a problem?

Was your name neater when written with the mirror, or with your eyes closed? Why do you think this was?

What do you think would happen if you bounced the light off two mirrors, or even three? Get together with some other groups and test it out, what are the results?