

## Hands on perception activities to try at home or in the classroom

### Things you need

A rigid plastic face mask (like those sold in a joke or party shop)  
Torches or spotlights  
A table  
A turning disc like one you would find on a dinner table (a lazy susan)

### What to do

Watch video 1 [https://www.youtube.com/watch?v=G\\_Qwp2GdB1M](https://www.youtube.com/watch?v=G_Qwp2GdB1M) and video 2 <https://www.youtube.com/watch?v=drxAS5YOdc&feature=related> by perception researcher Richard L Gregory to get a better idea of how to set up this demonstration.

Mount the mask onto the stick and mount the stick onto the turning disc. Adjust torches or lights around the mask, so you can see shadows falling around its nose and eyes.

Slowly turn the disc, so the attached face mask rotates and you see the back of the mask as well as the front. Does the back of the mask look hollow, or does it look like another normal face?

---

### Things you need

A large mirror  
A friend

### What to do

Ask your friend to look up close into the mirror. Watch your friend's eyes in the mirror's reflection. You should see their eyes making tiny, jittery movements or saccades. These tiny movements are important for updating your brain with fresh visual information.

---

### Things you need

Your eyes  
Your finger  
Something to look at in the distance, like a light globe

### What to do

With both eyes open, point your finger at an object in the distance, so your arm and finger are in alignment with the middle of your face (or your nose). Close each eye in turn and notice how far the object seems to 'jump' across in your

## Hands on perception activities to try at home or in the classroom

vision. The eye that can still see your finger pointing right at the object is your dominant eye!

### Things you need

A photograph of a building on a postcard or from a magazine

A mirror

Something sharp which allows you to punch a peephole through the postcard

### What to do

Punch a peephole in the bottom centre of the photo, which is large enough to allow you to peep through with one eye.

Hold up the photograph, so the back of the photo is against your face and the building image faces the mirror.

Look through the peephole, so you can see the building photo reflected in the mirror. Slowly move your head back and forth a little.

Does the building in the mirror reflection change from 2D to 3D?

---

### Things you need

A square shaped mirror

A coloured print out of the Stroop Effect words

<http://faculty.washington.edu/chudler/pdf/ministroop.pdf>

### What to do

Look at the coloured print out. Try to say the name of the coloured ink that each word is printed in, rather than the colour name described by each word.

Was that easy?!

Now, hold the mirror next to your print out and say the coloured inks again.

Was that easier or more difficult? Why?

---

### Things you need

A dark room

A torch

A large, plain sheet of cardboard, to use as a small screen.

### What to do

Prop up the torch on the table so it shines onto the screen.

Move the screen from side to side while the torch stays still.

Do you perceive the screen to move, or the spotlight?



Australian Government  
Department of Innovation  
Industry, Science and Research



## Hands on perception activities to try at home or in the classroom

### Things you need

Your eyes  
Your arms

### What to do

Stretch one arm out and hold your hand up like you're telling someone to "stop". Hold your other arm mid-way (next to your elbow) with this hand also in the "stop" position. Do your hands look the same size?

Now, keep your hand near your elbow, but move it across your arm, so you see it overlap your other hand slightly. Does your hand near your elbow seem to look slightly bigger than before?

When you overlap your hands, it fools your brain's normal scaling techniques which it uses when judging the size constancy of things nearby and far away.

---

### Things you need

A book (or a page with words printed on it)  
Your eyes

### What to do

Hold up the book (or page of printed words). Read the words as you normally would.

Now, keep the book still and gently shake your head from side to side (as though you are saying "no") while you try to read the words. Can you still read the words?

Keep your head still, but move the book from side to side. Can you read the words now? If not, how is this different to when you shook your head?

Another thing to try is to ask a friend to VERY gently shake your head from side to side while you keep the book still and try to read it (instead of you consciously shaking your head).

These activities show how messages from your inner ear (vestibular system) are fed through to ocular reflex control areas of your brain, so your eyes move in the opposite direction to your head.

---

## Hands on perception activities to try at home or in the classroom

### Things you need

Your eyes  
Your arms

### What to do

Stretch one arm out and hold your hand up like you're telling someone to "stop". Hold your other arm mid-way (next to your elbow) with this hand also in the "stop" position. Do your hands look the same size?

Now, keep your hand near your elbow, but move it across your arm, so you see it overlap your other hand slightly. Does your hand near your elbow seem to look slightly bigger than before?

When you overlap your hands, it fools your brain's normal scaling techniques which it uses when judging the size constancy of things nearby and far away.

---

### Things you need

A touch box with every day items of different size, shape and textures  
A blindfold  
A friend

### What to do

While your friend is wearing the blindfold, hand them an item from the touch box and ask them to identify it. Watch how the blindfolded person feels the object and see whether they use any of these techniques:

- Lateral motion: rubs hand or fingertips across the surface of the object
  - Pressure: taps or presses down on the surface of the object
  - Static contact: holds hand or fingertips in static contact with the object
  - Unsupported holding: hefts the object in their hand, unsupported by any other surface
  - Enclosure: places hand or hands around the outside of the object
  - Contour following: uses finger to trace the edge (contour) of the object
-

## Hands on perception activities to try at home or in the classroom

### Things you need

A good sense of rhythm!  
Your hands

### What to do

Many left handers get the same result as right-handers on this test, so it's not a test for 'handed-ness'.

Start tapping a regular 1-2-3-4 beat with your left hand on the table or on your thigh. Start tapping a fancy rhythm beat at the same time with your right hand. Easy?

Now, try tapping the regular 1-2-3-4 beat with your right hand and after a few rounds, start the fancy beat with your left hand. You should find this more difficult.

Your brain's left hemisphere which controls your right hand is able to handle complex rhythms better than your brain's right hemisphere (which controls your left hand).

---

### Things you need

A few friends  
Sticky/adhesive reflective tape or bike reflectors  
Scissors  
Tape that can be used to apply  
A dark room with a small pinpoint of light in one corner, like a torch

### What to do

Stick the reflectors onto your friends' joints (shoulders, elbows, knees, ankles, hips, wrists). Ask your friends to walk around the dark room, so you can only see the reflectors on their joints. Are you able to identify who's who, simply by watching how their body reflectors move? Can you identify their mood by watching their movements as well?

---

## Hands on perception activities to try at home or in the classroom

### Things you need

Chalk  
Outdoor paving area

### What to do

Draw some Müller-Lyer illusion lines along the ground. Make sure all of the lines are the same length (e.g., 3 metres long) and the arrowheads point outwards and inwards. Ask people who didn't draw the lines to estimate how many footsteps or hops it would take you to walk along each line. Do some lines look as though they will need more footsteps than others?

[https://en.wikipedia.org/wiki/M%C3%BCller-Lyer\\_illusion](https://en.wikipedia.org/wiki/M%C3%BCller-Lyer_illusion)

---

### Things you need

A treadmill!

### What to do

Walk on the treadmill for 2 minutes, then step onto solid ground. What effect do you feel? Is it similar to when you walk along a travelator in an airport? This is a movement after effect. Your brain and muscles adapted to the movement stimulus. When the stimulus stops, it can feel a little odd while your brain and muscles are readjusting.

---

### Things you need

A friend

### What to do

Ask your friend: "How many animals of each kind did Moses take on the Ark?" and see what they say.

Most people say "two", even though they probably know that Noah, not Moses, is associated with the Ark. This is called the Moses Illusion, where people have a tendency to overlook distortions in statements.

---

## Hands on perception activities to try at home or in the classroom

### Things you need

One small (half-sized) aluminium can  
One normal sized aluminium  
Garden sand  
Digital measuring scales  
A friend

### What to do

Place the small aluminium can onto the scales and carefully pour in sand until the digital readout says 150 grams. Now, place the normal can onto the scales and pour in sand until the digital readout says 150 grams.

Ask a friend to lift both cans at the same time and tell you whether one of the cans feels heavier than the other.

Many people will think that the smaller can feels heavier, even though the cans are the same mass. This is due to the size-weight illusion.

---

### Things you need

A friend  
A stopwatch  
A quiet room  
A way of playing music (MP3 player, CD player, radio, etc)

### What to do

Choose a period of time, but don't tell your friend what you've chosen (e.g., 30 seconds).

Ask your friend to sit silently while you measure your period of time on your stopwatch. Don't tell your friend how many seconds you recorded.

Now, play some music and measure that period of time on your stop watch again. (Stop the music when you reach the end.)

Ask your friend which period felt longer—the silent period or the music-playing period? Or, did each period seem to last about the same length of time?

Many people judge a period of time to feel longer if it's filled with sound or video compared to silence. This is called the filled-duration illusion.

---

## Hands on perception activities to try at home or in the classroom

### Things you need

A tabletop

A colour print out of the Ebbinghaus Illusion glued onto cardboard

<https://en.wikipedia.org/wiki/File:Mond-vergleich.svg>

Scissors

A pair of tweezers

### What to do

Cut out all of the circles in the Ebbinghaus Illusion and arrange the circles in their original patterns.

Use a pair of tongs to pick up the central (orange) circle.

Do you notice yourself readjusting the width of the tweezers as you try to pick up the central circle? If you try to pick up the orange circles by themselves (without the surrounding blue circles), do you change the width of the tweezers as much?

---

### Things you need

A print out of the square lines at the end of this document (vertical and horizontal)

A plain sheet of white paper

A ruler

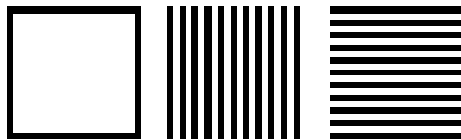
A thick, black texta

### What to do

Draw a plain square on the paper measuring 170 mm by 170 mm.

Arrange the squares similar to the diagram below.

Ask friends and family to tell you which square appears to be the smallest? Let them know that they are actually the same size!





## Hands on perception activities to try at home or in the classroom

### Things you need

A print out of the square lines at the end of this document (vertical and horizontal)

Your eyes

A manila folder, or a thin book that can stand on one end (like a partition)

Scissors

### What to do

Prop up the manila folder or book on the table, like a vertical partition.

Hold the horizontal line and vertical line page on either side of the partition.

Put your nose against the partition, so one eye can only see the horizontal lines and your other eye can only see the vertical lines.

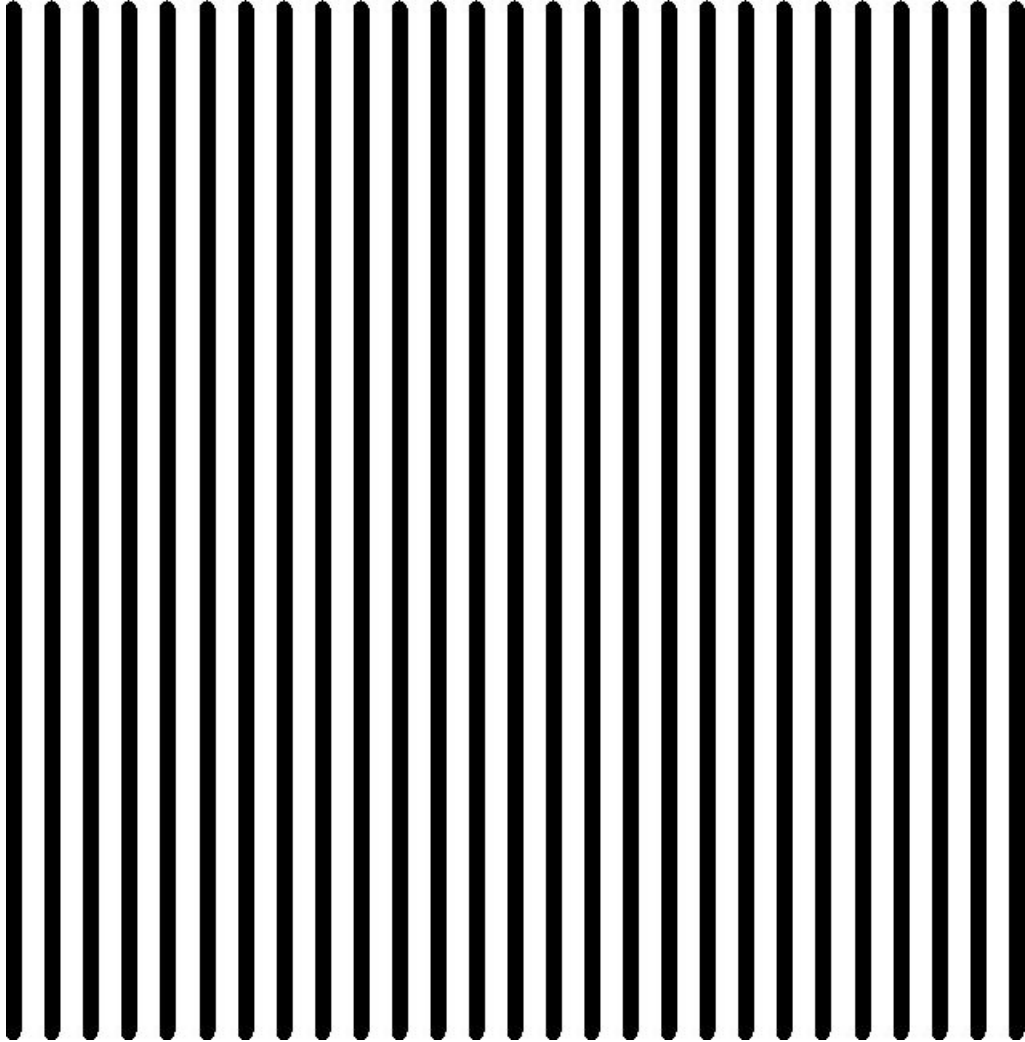
Stare at the lines a little while.

You may see either the stripes alternating or a fluctuating mosaic but not a grid.

---

**Hands on perception activities to try at home or in the classroom**

**Square lines—vertical**



**Hands on perception activities to try at home or in the classroom**

**Square lines—horizontal**

