



BRITISH  
SCIENCE  
WEEK  
2022



dreamachine

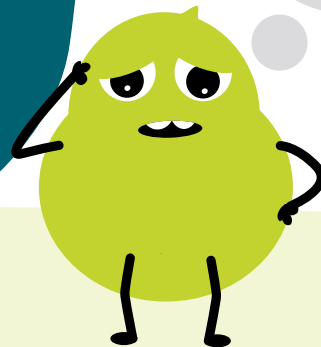
LEARNING  
**UNBOXED**  
CREATIVITY IN THE UK

# DREAMACHINE: SEEING WITH OUR BRAIN!

This starter activity is linked to Dreamachine, an artwork exploring the power of our minds and how we see and experience the world around us differently. Our brains use rules and guesses so we can understand what our growing bodies sense. In this activity you will explore some optical illusions and make your own, known as the Müller-Lyer illusion.

🕒 15 minutes

**Skill set:** Creative, curious, open-minded



## Kit list

Scissors

Ruler

Paper

Pen



## Instructions

- 1 Look at the optical illusions on the next page.
- 2 For the Jastrow Illusion, which shape is longer, A or B? They are both the same size! Test it by cutting out the shapes and swapping them over. Which looks bigger now? Place one on top of the other to check.
- 3 Look at the Ebbinghaus Illusion. Which orange circle is bigger? They are both the same size! Test it by lining up edges of paper along the top and bottom of the orange circles.
- 4 Did they trick you? Your brain is very busy trying to understand all the information from your senses, so to cope, it makes some assumptions based on your memory and experience. Usually, these assumptions allow us to see the world more-or-less as it is, but sometimes they lead to illusions.
- 5 Now have a go at making your own optical illusion to test the brain's perception of size. Follow the instructions on the next page.
- 6 Think about:
  - Why do you think our brains make guesses about what we see?
  - Does this make you think that what you see is unique to you?
  - How do you think this might relate to other ways you encounter the world?



## Next steps

- This is just for starters! Explore a range of optical illusions and perception explorations through the Dreamachine resources, a major schools programme for 2022 focused on our sense of self, how our brains help us perceive the world and how we connect to others. [dreamachine.world](https://dreamachine.world) ✨.
- Check out [illusionsindex.org](https://illusionsindex.org) ✨ for more illusions



## At home

Show family and friends the illusions. Does everybody see the same things?

Ask each other about why some people see

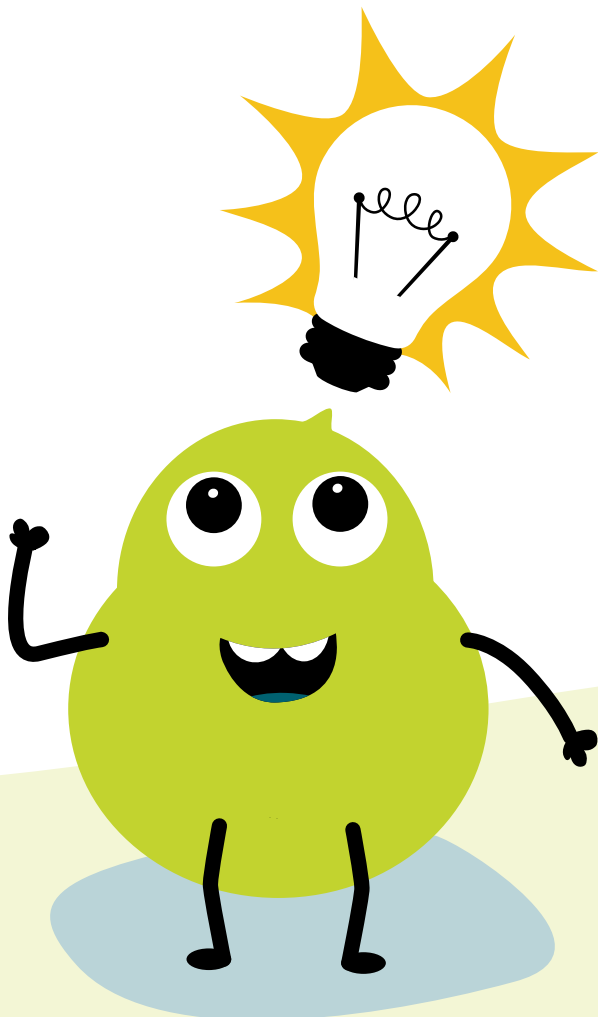


## >> DREAMACHINE: SEEING WITH OUR BRAIN!

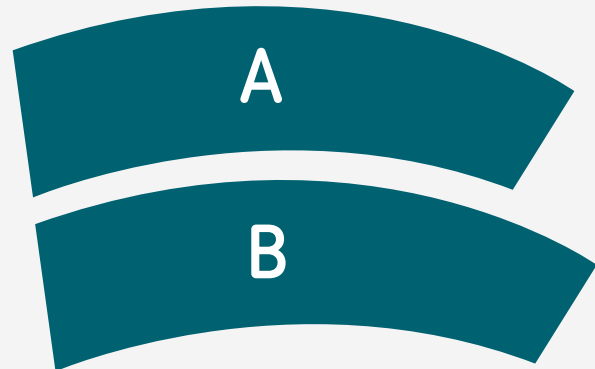
things differently to others. Ask them whether they can think of other examples of this happening.

### >> Career options

Neuroscientists and psychologists study the nervous system, the brain, and the mind in order to help advance science, medicine, technology, and society. Philosophers study the nature of mind and experience, among many other things. By knowing about how we experience illusions, people working in these areas can learn more about perception. Artists, filmmakers, designers, and architects often play with colour, perspective, and illusion.



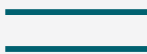


### Jastrow Illusion



### Ebbinghaus Illusion



### Have a go!

- 1 Draw two lines the same length using a ruler, one below the other.  

- 2 On the ends of the top line add sideways V shapes.  

- 3 On the end of the other line, draw arrow heads.  

- 4 Which line looks longer? Why do you think this is?