

1. Hologram Hall

Holograms are an advanced form of photography that allows an image to be recorded in three dimensions.



- 1** Holograms were conceived by a Hungarian man in 1947 but not created as we know them today until laser beams were invented in the 1960's.

What modern uses do holograms have today?

- 2** Have a look at the clown hologram. The hologram is made by firing a laser beam at an object via a beam splitter, mirrors and a lens. This creates interference patterns that are projected onto special film.

How many faces can you see?

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What type of display is this?

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- 3** Compare a photo to a hologram. What are the good/bad features of a hologram?

- 4** Years ago, you would need another laser to be fired at the hologram to view it, but now a focused light, like a halogen bulb, at the correct angle is enough.

Estimate the angle the bulbs point

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- 5** Can you offer one amazing fact about holograms?

2. The Tilted House

This room's illusion works because our eyes and ears are trained to keep us upright.



- 1** Our eye balance receptors learn, as babies, the way we should be standing in relation to walls and objects in a room. When the floor slopes away from us, yet the walls come towards us, this disrupts our eye balance.

What other balance receptor is also disrupted?

Do you feel dizzy or sick in this room? _____ Close your eyes. You will probably feel okay as this turns off one of the receptors.

- 2** Use the protractor to find out what angle the floor is tilted - _____ degrees. Is the pool table more sloped or less sloped than the floor? **MORE/LESS** Estimate the angle the pool table is sloped at - _____ degrees.

How many faces can you see?

What type of display is this?

- 3** The lack of external visual cues in this room makes your eyes and brain struggle.

What does this room lack that would help figure out what is normal or true horizontal?

- 4** Studies have shown that as your body is tilted within this room, the "uphill" effect feels much more pronounced.

How many times greater than it actually is?

3. Following Faces



Stuart was introduced to this illusion in the 1980's when he found a small porcelain model in an English gift shop. He made a large opaque Einstein face - the "ghost" in the Hologram Hall - then in 2001 he and Nelson sculptor Derek Ball created a room of 168 Famous Faces. It is the only one of its kind in the world.

- 1 When we look at a normal face from front on we accept that the face is three dimensional, mainly because of seeing shadows as kids and linking this to feeling a 3D surface with our hands.

What tells us that we're moving across/above/below a face?

- 2 The 168 faces are concave but appear convex.

What type of processing takes place in our mind that makes this hard to believe?

- 3 We rely on BOTH eyes to give us three dimensional information on an object.

What type of perception is challenged? (Especially when one eye is closed)

- 4 The faces all lack one thing.

What is it and Why?

- 5 Name the seven famous people and what they were most famous for.

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4. The Ames Room



Not the only one, but definitely the largest of its kind in the world, our Ames Room (also called a Forced Perspective Room) offers you the chance to see an illusion technique used in many movies (i.e Lord Of The Rings and Charlie & The Chocolate Factory) to depict small & large characters on the same set.

- 1** Each part of this room is specially designed so that angles and corners appear perfectly normal when viewed from the front windows.

**What is the true shape of the floor and roof tiles?
What form of shape constancy is in action?**

- 2** The shape of the room also uses anamorphic principles.

Can you think of any example of this phenomenon that we see on TV?

How does it work?

- 3** Most Ames Rooms are much smaller than ours and requires the viewer to look into a small room through a peephole.

What sort of vision does this allow?

- 4** A yellow line on the carpet marks where people shouldn't go beyond.

Why is this?

5. Sculpt Illusion Gallery

A unique illusion room that explores the artistic side of Illusions (in this case, 3D sculptures) within an indoor garden environment.



- 1** Many of these sculptures work on various perception tricks to fool your brain into seeing something that's not really present.

Can you name three perception tricks used?

- 2** Some of the exhibits suggest you use one eye/your camera to view the sculpture to best see the illusion.

Why is this a good idea?

- 3** Many of the sculptures are by local Wanaka and Queenstown artists.

What percentage of the sculptures are locally made?

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- 4** Concave illusions rely on the user being mentally sound.

What disorder could affect someone so that they would only ever see these sculptures as being concave and not convex?

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6. Around The Illusion Room Walls



A Rob Gonsalves artworks

Several limited edition prints display a unique perspective & style similar to past artists such as M.C Escher, Salvador Dali and Rene Margritte.

Not surrealism, what is the name given to his style of art?

B Ambigrams

An ambigram is a word, art form or other symbol that retains its meaning when viewed or interpreted from a different direction, perspective, or orientation. Essentially it's often two words written in one space.

Name two types of ambigrams displayed

Try & design your own ambigram and draw it below

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C Wonky Wall Illusion

This is a famous example of a visual distortion effect first seen in the 1970's.

What is the real name of this illusion?

What type of illusion pattern is described?

Why do we see the lines as being wonky?

Try to create one of your own using strips of paper marked with black & white boxes.

D Elephantom Legs

As you look at this flat two dimensional picture, your brain automatically tries to build a three dimensional shape in your mind - and it cannot. This picture makes use of the fact that a drawing of a round leg can be made using two lines and shadows. Our brain fills in the missing information.

Take a few minutes to see if you could sketch an elephant (or something similar) and get it looking three dimensional.