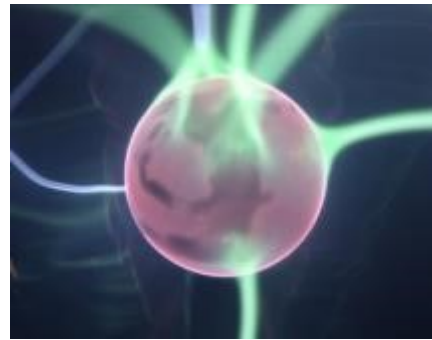


CAMERA OBSCURA & WORLD of ILLUSIONS



WORKBOOK

NAME: _____

Before you begin, remember to count how many stairs you climb from Reception up to the Rooftop Terrace. How many are there?

98

LEVEL 3: EYE SPY EDINBURGH

Use the pictures of old Edinburgh to answer these questions.

1. When were public horse-drawn carriages introduced? 1871
2. When was Bowhead House demolished? 1878
3. What is the North British Hotel called today? The Balmoral Hotel

The **View-Cams** can see all over Edinburgh when you move them around and zoom in. Use them to spot these sights:

Name 3 landmarks you can see

Edinburgh Castle
The Hub
St. Giles Cathedral
St. James' Quarter
Scott Monument
School of Divinity
Calton Hill
The Balmoral

Tick these off when you see them:

A bus on the Royal Mile
Someone on their phone
George Heriot's School
A seagull

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

The **Thermal Camera** uses colour to show differences in temperature. What colour shows that something is hot? What about if it is cold? Write "hot" and "cold" in the arrows below next to the correct colours.



What year did one of our visitors discover they had cancer after seeing a warm patch appear on our Thermal Camera?

2019



Which parts of you are warm? Face, hands, skin, armpits, crotch

Which parts are cold? Hair, clothes, legs

LEVEL 5: THE MAGIC GALLERY

There are two exhibits on this level that can make a spinning animation. One is of a running horse, and the other is of a dancing man. What are these exhibits called?

1) Zoetrope

2) Praxinoscope

What is the main difference between them?

The praxinoscope uses mirrors, but the zoetrope does not.

The praxinoscope was invented after the zoetrope.



When you touch the plasma ball or tubes, charged particles inside move to let the electricity flow over your skin and to the ground. Different colours are made by gasses inside the tubes. If you touch other people while touching the exhibits, you might make some really big sparks as the electricity escapes!

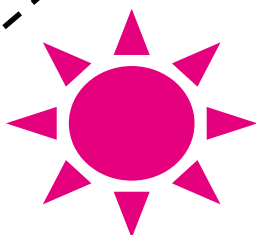
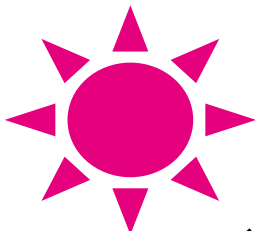
Have a go in the Shadow Wall. Can you make shapes in the shadows with your body? Try these :

Star

Ball

The first letter of your name

Try drawing a mirror image of the shape below.



What is the difference between the normal mirror and the true mirror?

A normal mirror shows you a mirror image. A true mirror flips the image so that you see exactly what other people when they look at you.

LEVEL 6: THE ROOFTOP

Can you find the answers to these questions on the Rooftop Terrace? Don't forget, you can ask your guide for help—you might even hear some of the answers in the Camera Obscura show! Remember to fill in your stair count on the first page.

1. Who was Maria Short?

She built the Camera Obscura in 1853. She was the daughter of Thomas Short the optician, and inherited his equipment to build an observatory. She was conductress of the observatory.

2. Camera Obscura is a Latin phrase. What does it mean in English?

Camera translates to room or chamber
Obscura translates to dark or darkness

3. How many children attended the Castlehill School? What is it used for today?

937. It is now the Scotch Whisky Experience.

4. Why is Patrick Geddes important in the history of the Camera Obscura?

He owned the Camera Obscura in the 1890s, and used to do shows for the public. He used the Camera Obscura as an interactive museum, and taught people about the city and its place in the world.

5. Find this quote and fill in the missing words:

"In no city in the world do so many people live in so little room as in Edinburgh"

- Daniel Defoe

6. Where can you get married for free if you have the correct name?

St. Margaret's Chapel

7. Which building visible from the rooftop has a bronze ribbon twirling up into the sky?

St. James Quarter

8. How long is the Royal Mile?

1 Scot's mile or
1 and 1/8 miles

LEVEL 4: THE LIGHT FANTASTIC

Watch someone using the Severed Head Illusion.
How many mirrors are needed to make it work?
Why are these mirrors important?

It needs 2 mirrors to reflect the wall paper on each side, so that it looks as though you can see through the table legs.



Mixing colours of light is very different from mixing colours of paint. Use the Colour Shadow Wall to work out the recipe for making these colours;

Orange = Pink and yellow

Green = Blue and yellow

Purple = blue and pink

Have a go on the Balance Board.
How long can you last on it?

What muscles can you feel working while you're trying to balance?

Quads, abdominals (legs, core)



Finish this quote:

“Time is an illusion,
lunchtime doubly so”

- Douglas Adams

Watch people using the **Ames Room**. It tricks you by messing with your sense of Perspective.

Now go in the room yourself. What do you notice about the design of the room?

Floor and ceiling is uneven, back wall is not parallel to the front wall, the black frames are different sizes

LEVEL 2: BEWILDERWORLD

Try walking through the Vortex Tunnel. It might make you feel dizzy... our sense of balance relies on our eyes and our inner ear. When our senses tell us conflicting things—like when it appears that the wall is moving—it confuses our brain and makes us feel dizzy.



How many mirrors make up the Mirror Maze?

18

28

38

Why do we ask you to wear gloves when in the Maze?

To keep the mirrors clean and make it harder to find your way

How many senses do you have?

Human beings have many more than five senses. For example, we have a sense of balance to tell us whether we are falling. Scientists think we have more than 10 senses. Can you think of any others?

Sight

Sound

Touch

Taste

Hearing

Balance

Hunger/thirst

Pain

Temperature

Proprioception

Time

Direction

Pressure



Did you find your way out of the Mirror Maze?

Thanks for visiting!