



ISSUE 01



# Tweenkerama

— LAB MAG —



NAME:

# The Beginnings of Photography

Anyone can be a photographer these days thanks to the inclusion of cameras in smartphones. There are apps that let you take professional-looking photos, complete with filters to enhance them immediately.

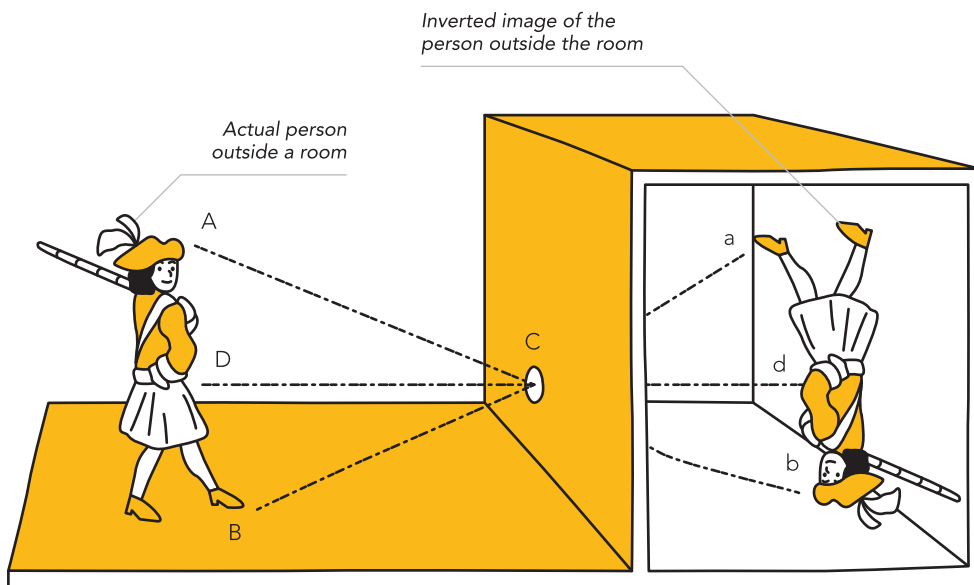
Aspiring photographers no longer need to worry about spending all their money on expensive equipment. It is no surprise then that there is an emergence of a specialised group of photographers who only take photos with smartphones, as well as people who overindulge in selfies. But how did cameras come about, and why was there a need to invent them?

In the past, anything of importance or aesthetic value was only captured through

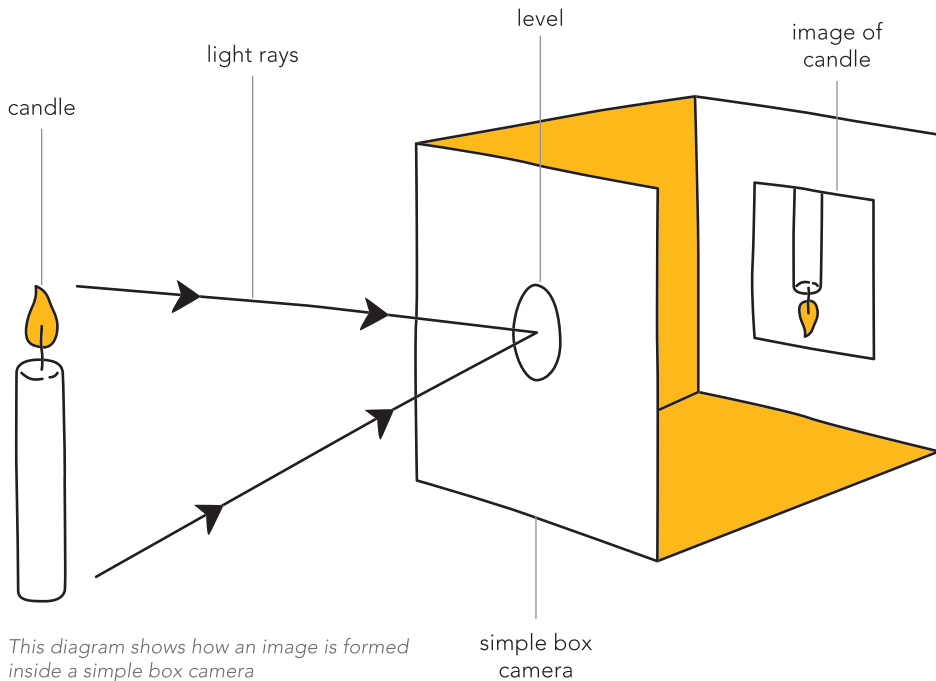
art such as statues or paintings that you see in museums today. This means that only the wealthy or artists could leave records of their existence or what was happening around them.

But about a thousand years ago, it was discovered that when light passes through a small pinhole into a dark room, an upside down image of the scene outside was reflected on the opposite wall.

Inventors took to this incredible principle and recreated a smaller version of this dark room into a box and named it **CAMERA OBSCURA**. Lens and mirrors were added later on to enable a clearer projection of the image on the top of the box.



*This diagram shows how light travels through the hole to project an upside-down image.*



Since **CAMERA OBSCURA** was portable, it was easier for artists to travel while practising their art as they would be able to trace a small image first as reference for their masterpieces. From 1830s onwards, inventors found different ways to record these images using chemicals. As the photography process gradually

improved, it gained popularity as taking a photo was undeniably cheaper and faster than commissioning an artist. The **CAMERA OBSCURA** has since evolved into the cameras we know today but the science behind capturing images remains fundamentally the same.

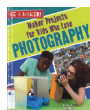
## References



**The Problem With Early Cameras (Bloopers of Invention)**

**Author:** Ryan Nagelhout  
**Call No.:** J 771.3 NAG

*All Rights Reserved,  
Gareth Stevens, 2016.*



**Maker Projects for Kids Who Love Photography (Be a Maker!)**

**Author:** Kelly Spence  
**Call No.:** J 770 SPE

*All Rights Reserved,  
Crabtree, 2016.*



**Genius Optical Inventions: From the X-Ray to The Telescope (Incredible Inventions)**

**Author:** Matt Turner  
**Call No.:** J 621.36 TUR

*All Rights Reserved,  
Hungry Tomato, 2018.*

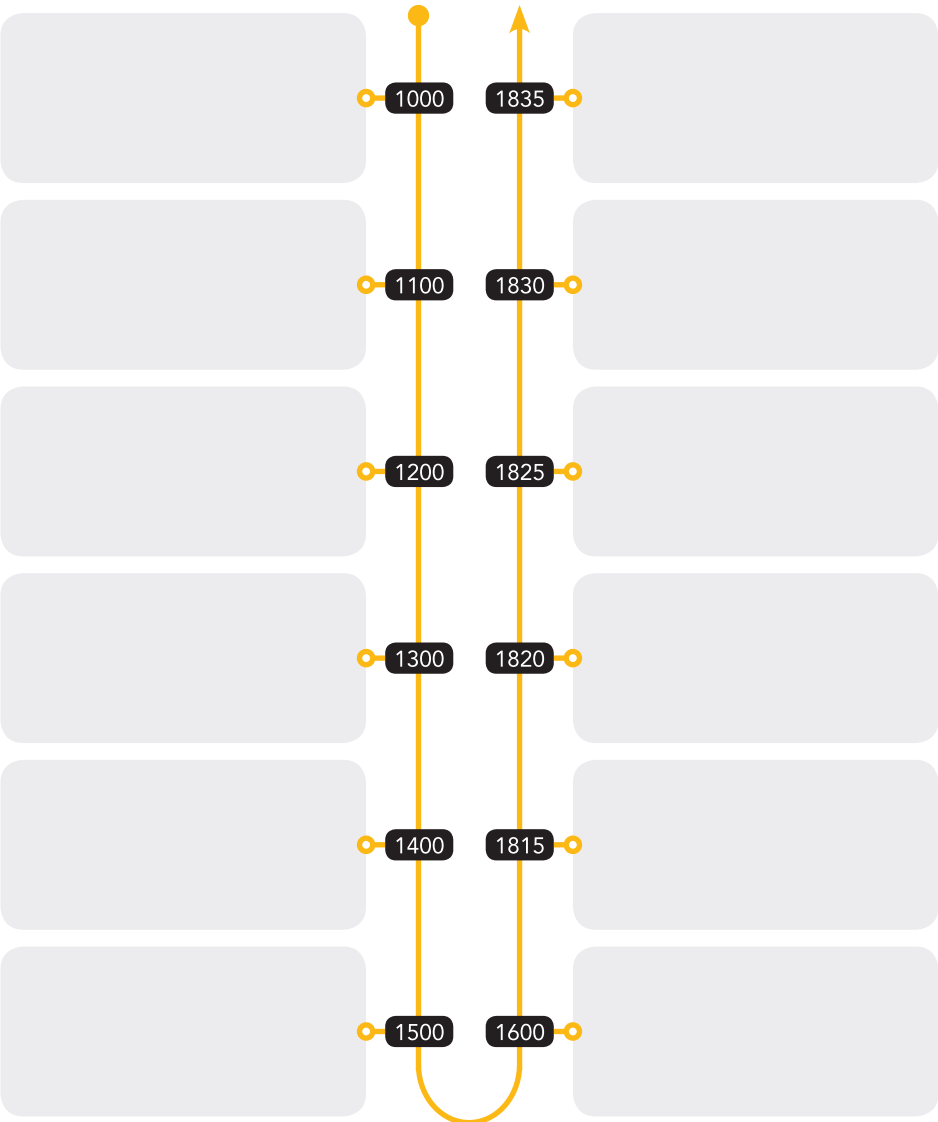
ACTIVITY

★★ 2 stars for this activity

Timeline of evolution of camera

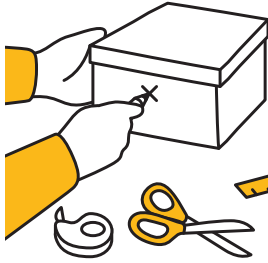
How well do you know the history and evolution of cameras?

Complete the timeline below by filling in the boxes.



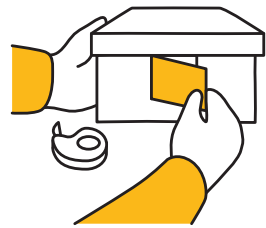
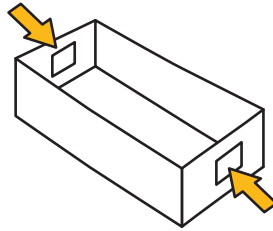
**MAKE!****Create your own camera obscura at home.****WHAT YOU'LL NEED**

- An empty shoe box with lid
- Pencil
- Scissors
- Lamp
- Tape
- Tracing paper (7cm by 7cm)

**Instructions:**

1. Use a pencil to punch a hole in one of the shorter ends of the shoe box.

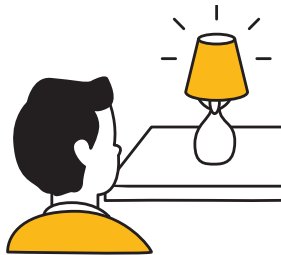
2. Cut a 5cm by 5cm square on the opposite end of the shoe box.



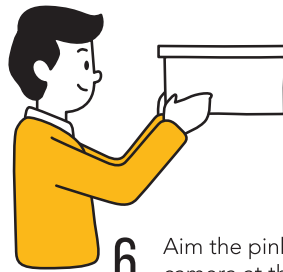
3. Tape the tracing paper on top of the square hole.



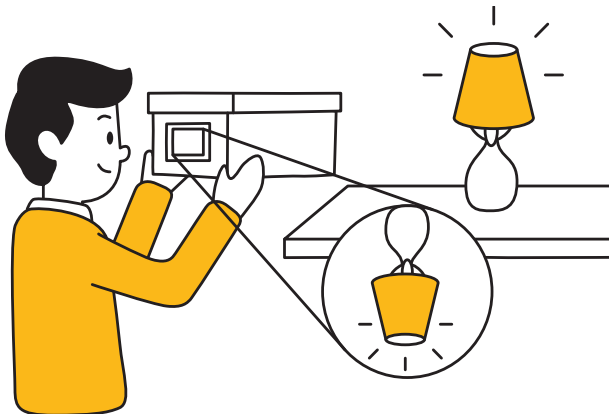
4. Turn on a lamp in a dark room.



5. Stand two metres away from the lamp.



6. Aim the pinhole camera at the lamp at arms' length.



7. Ta-da! An upside down image of the lamp will appear on the tracing paper.

Tweenkerama Lab Mag provides creative ideas and easy DIY projects for you to learn more about S.T.E.A.M. topics in a fun manner. Click [here](#) to download Tweenkerama Lab Mag Issue #01 in full.