

# Phone use

Indoor, Age 6 – 16, Cost per student in £– 0.20

Curriculum areas - Biology, Art, Photography, Chemistry, ICT, History

There are two working mobile phones for every living person on this planet and these screen based bundles of joy are increasingly being brought into the classroom. Although the purpose of this website is to reject the idea that you can download wonder using an app, phones have several features which when used with experimental photography enable a fascinating combination of modern technology with 150 years of photographic history. Not only does learning a new feature on a phone excite students, but combining old and new also impresses people who assess qualifications - leading to higher grades.



Here are some ways I make use of phones to teach alternative photography. (The last three are with light sensitive paper)

- The world's first magnifying glass.
- £5 Digital projector (see [Lens based obscuras](#))
- Digitally capturing impermanent images.
- Viewing old colour negatives with 'Invert colours – classic invert' settings

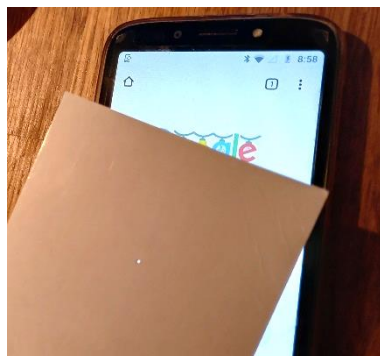
Phone use with light sensitive paper ([info here](#))

- Phone torch photo painting
- 'Invert colours – classic invert' print
- Paper negative viewing - Darkroom

## The world first magnifying glass.

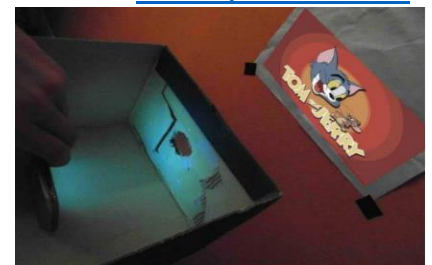
Get the students to make a map pin sized hole in a piece of thin card or aluminium and compare how close you can focus your eye on the phone screen with and without the hole.

This may not keep a class of 30 entertained for long but was how Inuit's prevented snow blindness and was also the first way people improved their eyesight. You can also talk about the [history of the lens](#) (science/history) [or the evolution of the eye](#) (biology) both amazing stories in themselves.



## The £5 Digital projector (see [Lens based obscuras](#))

Using a hand held obscura in an opposite way can recreate a digital projector. For 20 years I have been impressed with how



amazing students find this. Above is an absurdly simulated image as to what you may be able to create!

### Viewing old colour negatives

Bring in any old colour or black and white negatives and pass them round the class. With the students phone set on inverse they will be able to see the negatives as positives. Many have never seen a negative before and to have such a detailed image on a small piece of plastic is amazing for them let alone identifying what it is. Be careful what images you bring in! It's best to hold the negative up against a white ceiling / sky to diffuse the light. A great opportunity to discuss opposite colours and the history of photography!



### Digitally capturing impermanent images

Scanners will provide the best quality copies but, to avoid 30 students queuing up buying for blood, the best way to empower students with digital image copying is for them to use their phone. This is essential when preserving impermanent images including solargraph negatives and chemigrams.

When copying photographs it is important to try to avoid reflections. These occur on glossy or semi matt surfaced paper or when using the phones 'flash'. Reflections only become apparent after the image has been taken. If photographing near a window avoid sunlight with solargraph negatives.

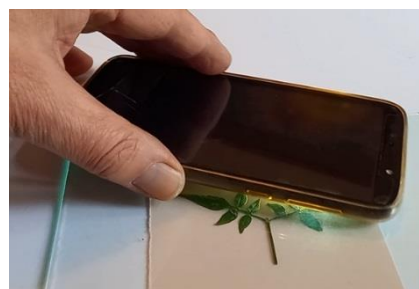
It is worth taking a few images as the 'auto focus' on some phones can get confused with soft images.

After copying, place the impermanent photographs into a book to avoid fogging.

### Phone use with light sensitive paper.

#### Phone torch photo painting

As well as being useful at Michael Buble concerts, the torch on your phone has enough photons to darken photo paper in a few minutes. The important thing here is to get the torch virtually in contact with the paper. A clip frame with a sheet of Perspex will hold the plant in position when the torch is moved to 'paint' the light. If you raise the phone



away for the paper it will require longer time to expose (and give you the chance to say the words 'inverse square law'). [Video Here](#).

The final colour can be anything from blue to pink but it can be inverted after being photographed (on a phone – see above) to give an alternative colour and effect.



### **'Invert colours – classic invert' photograph.**

This handy facility can be found on most phones and changes the screen to 'negative colours'. As well as viewing negatives created in the darkroom (advanced), it can be used to create positive images on photographic paper in exactly (!) the same way as fox Talbot did in 1836 (without the electronic, built in obsolescent landfill of today).

1. Find a dark interesting image (maybe a zebra!)
2. Set your phone onto full brightness
3. Set it so it doesn't shut down after 30 seconds (Settings >Display >Screen Timeout >Never)
4. Set your phone to invert colours or classic invert (on my phone it's Settings > Accessibility > Visibility enhancements > Colour inversion, but it does vary from phone to phone).
5. Open your negative image and place your phone directly onto the photographic paper (be aware any text will come out back to front)
6. After 5 minutes have a look at your photograph and photograph it with your phone camera.

### **Paper negative viewing (darkroom)**

When creating with paper negatives in a darkroom this facility comes into its own.

Be aware that if the negative image is photographed with the camera set on 'invert colours', the image appears to be in positive, when the phone reverts to 'Normal' non inverted mode, the image returns to being a negative.

