

Blueprinting Activity

Class: Primary 4-5

Subject: History/Science

Duration: 1hr

Lesson Focus and Goals:

- Teach the children about the ways in which we can develop photos and how this has changed over time.

Materials Needed:

- Blueprint paper (instructions on how to make this and retailers to buy this from are provided in the resource pack for this activity) – stored in tinfoil to avoid UV exposure
- Acetate negative Victorian photos (some examples are shown in the resource pack) and/or objects like seashells and seaweed
- UV lamp/ a sunny day and access to outside
- PowerPoint (provided in downloadable resource pack)
- Waterproof marker pen

CfE Learning Points:

- I have collaborated in activities which safely demonstrate simple chemical reactions using everyday chemicals. I can show an appreciation of a chemical reaction as being a change in which different materials are made. SCN 2-19a
- I have the freedom to discover and choose ways to create images and objects using a variety of materials EXA 0-02a
- Having selected a significant individual from the past, I can contribute to a discussion on the influence of their actions, then and since. SOC 1-06a

Teacher Notes:

This activity will strengthen the children's understanding of the printing process within traditional developing. Traditional developing involved the classic developing process which created a negative image, in order to make this image positive a printing process had to be undertaken.

This activity will be followed up with a discussion on developing processes, John Adamson (a lecturer at St Andrews University and photographer/specialist with the calotype developing process), and Anna Atkins (the pioneer of the blueprinting process and the first person to publish a photographic book).

Background Information:

- Development is the process of revealing an image taken with a camera and usually involves lots of chemicals. It is a process that needs to be done in a dark room, ie a room with no light. Chemicals were used to develop photos in a darkroom but the image that was produced was a negative which means they may look a little funny. This negative could then be used to print a positive image that looked correct.
- John Adamson was a doctor, photographer and physicist who lectured at the University of St Andrews. He knew how to develop photos (which took a large understanding of chemistry and physics) and taught Thomas Rodger (one of the first portrait photographers to have their own studio.) The Adamson restaurant in St Andrews is in John Adamson's old house.
- The order in which different colours came about with pictures were: firstly brown and white through the calotype process, followed by black and white (which could be done using a few different processes), and then followed by colour.
- Blueprinting was developed by Anna Atkins. She used blueprinting as a way to store information about the shapes of biological sea plants like seaweed. She was a scientist, botanist and photographer.
- Blueprinting is a very classroom friendly activity because, we don't need a darkroom and it is very safe. Like Adamson's calotypes, blueprinting works by using special paper that's been chemically-treated to make it sensitive to light. If light touches the paper, it will change chemically but if the light is blocked by something (a shell, seaweed, a picture), then the paper doesn't change. Adamson would have had to use more chemicals to reveal his picture; but with blueprinting, we can just use water to wash the original chemicals off the print, and we are left with a picture that is blue and white.

Discussion Questions:

- Why do you think Victorians couldn't see their photos immediately?
- What colour palate do you think the first picture was taken in?
- Does it surprise you that the first book with pictures was published in 1843? Before people had bikes, mains electricity and cars?
- Why do you think the paper changes colour?

Activity Instructions:

- Firstly, you should quickly introduce the idea of developing and that the class is about to do an experiment. This will be easier if you have completed other workshops beforehand but if you haven't, maybe have the classroom discussion before starting the experiment.
- To set up the experiment hand out your packs of blueprint paper wrapped in tinfoil. Tell the children not to open the tinfoil until you say so and emphasize this!
- Hand out your acetate pictures or sea botanical objects like shells and seaweed to the children (instructions on how to dry the seaweed before handing it out in class can be found attached below – warning this will need an oven and a few hours!)
- Explain to the children that they are going to be creating a John Adamson style blueprint of a Victorian photo and/or a botanical photo in the style of Anna Atkins
- Tell them to open their packets with the blueprint paper and give them roughly 5 minutes to arrange their objects/photos on the page. Make sure everyone has put their names on the paper in waterproof marker to avoid squabbling later on!
- Get the children to place their photos outside in direct sunlight. If this is not possible use a window ledge but try to time this so that there would be a natural break in the lesson after this point like a long lunchtime to give the prints time to expose. Blueprint paper needs UV light to expose and most windows block large portions of UV light so outside is always better to see the clearest and quickest results.
- Continue on with discussion of developing, John Adamson, Anna Atkins and Editing. If you used this discussion to introduce the workshop then continue with another lesson until you are confident that the blueprints have exposed.
- Once exposed the blueprints need to be washed with water to remove chemical residue, at this point the paper should visibly turn blue and white. Showing the kids the washing of one or two blueprints can be fun but they will get bored if you have to wash and dry a full class set of blueprints. This again would be best to be timed over a natural break in teaching or by a classroom assistant.
- The blueprints will need to be dried but this will not take long. The blueprints can then be handed out to the children, used as a wall display or taken home to parents.

How to Dry Seaweed:

- Firstly, collect your seaweed
- Wash your seaweed under cold water for 5 minutes or so to try and remove the sand and saltwater.
- Put your oven on low heat at about 40-50 degrees Celsius
- Lay the seaweed out on baking trays and bake for a few hours, checking progress every 30 minutes. The Seaweed should dry within 2-4 hours.

