



Just One Spark

Guidelines for Supervising Teachers

Preparing for Your Visit: It is strongly recommended that supervising staff should arrange a pre-visit to familiarise themselves with facilities at the Museum. Complimentary tickets are available on request in order to assist with planning and risk assessments. A Hazard Identification Sheet is provided to help you with your risk assessment.

Practicalities:

- **Where to go and how to get there:** the Just One Spark activity will take place in the Band Hall in the Pit Village. To get there, take the tram to the Pit Village/Home Farm stop and then walk down the hill. The Band Hall is on the left hand side as you enter the Village. Alternatively, you can walk to the Pit Village.
- **Arriving on Time:** Please ensure you arrive at the Band Hall on time. If you are booked on the first session of the day it is advisable to go straight there. In the event of a late arrival every effort will made to accommodate the full time of the activity, however, due to other bookings this may not be possible.
- **What to Bring/Where:** Pupils will need appropriate clothing. Beamish is an open air museum and so is open to the weather. You do not need any equipment for this activity.
- **Toilets:** The nearest toilets to the Band Hall are behind the building.
- **Health and Safety Information:** A Hazard Identification Sheet will be provided with your booking in order to advise you of any possible risks or hazards.
- **Access:** The Museum has an access bus for any visitors with access needs to assist with transported around the site.

Objectives of Activity:

The activity aims:

- for children to be able to identify the causes of mine explosions
- to enable children to summarise how mining safety lamps work to prevent explosions

Ideas for pre-visit Activities:

The activity is based on the Felling Mine Disaster in 1812, and the development of the mining safety lamp as a result of this, so children could carry out research into this disaster about when and where it happened, who was involved and why mining explosions occurred. The Durham Mining Museum has an excellent website, with resources about Felling Mine here:

<http://www.dmm.org.uk/colliery/f002.htm>

Pupils may also wish to design their own version of the miners' lamp, either on paper or build one and bring them to the museum. They can be discussed during the activity in the museum, and compared to the designs from the three scientists who worked on the lamp.

Outline of Activity:

The session will involve a series of demonstrations and discussions around the safety of mines and the lamps used to light them.

The children will be introduced to the context of the activity via the use of the Felling Mine Disaster in 1812. During this disaster 92 men and boys died down the mine after two explosions occurred. It was later found that the cause of the mine was a candle which set alight the methane gas that had built up in the mine tunnels. This explosion then lifted coal dust found on the floors of the mine, which in turn ignited and cause a further explosion. Both of these types of explosions (gas explosion and dust explosion) will be demonstrated to the pupils.

As a result of this disaster, the Reverend John Hodgson set up a fund to establish the "Society of the Prevention of Accidents in Coal Mines". They pushed of the design of a mining safety lamp. It is widely reported that the were three men who were involved in the design; Sir Humphry Davy, George Stephenson and William Reid Clanny. Both Davy and Stephenson realised that using gauze would stop an explosion from leaving a lamp, thus making a safe for of light. The pupils will explore these technologies and learn about how they prevented explosions from leaving the lamps and causing further disasters.

** Please note that this activity will involve demonstrating small, controlled, explosions. However, they may still upset children who are sensitive to loud bangs. You may wish for these children to sit further back and/or near an adult from your group.

Mining and lamps elsewhere in the Museum:

The rest of your day at the Museum will be teacher led time. This activity is very well complimented by taking the group on a tour of the mine, so children can see what it was like down the mine and how dark it was – mining by a single candle is also demonstrated during the tour. They will have the opportunity to see the lamp cabin and see a selection of mining lamps that have been used.

** Please note – during Winter, tours of the mine will need to be booked in advance and are subject to an additional fee of £1 per pupil. **

In addition, the pupils may wish to investigate different lighting around the museum – they can compare lighting in Pockerley, on the vehicles around the site and in the Town. Are any of these forms of lighting safe to use down a mine?

Ideas for post-visit activities:

Pupils could carry out literacy activities linked to the disaster (writing newspaper reports, obituaries etc). They may also want to design posters or other marketing material to encourage mine owners to adopt the use of mining lamps down their mines as miners were responsible for buying their own lamps. They could investigate the people who died and the jobs that they did down the mine. There are additional resources to support this activity on the Beamish Learning website. Visit this section and click on Just One Spark to download them. The names of those who died are included in this resource and children could organise the individuals by those who are related. Patterns of fathers, sons and brothers who died can be seen.

Contact us: If you have any queries please do not hesitate to contact Simon Woolley, Head of Learning on 0191 370 4011 OR email education@beamish.org.uk.



Hazard Identification Sheet: Just One Spark

Potential Hazard	Who is particularly at risk	Context of hazard and steps to be taken by accompanying adults to prevent accidents	Risk of accident/dangerous occurrence High/medium/low	If high or medium what additional precautions or measures need to be taken to reduce risk to low
Band Hall				
Naked flames from lighter/ candle/ explosion may cause burns.	Children / Adults	The activity uses naked flames, candles and explosions as demonstrations. All audience members will be positioned at least 2 metres away from the source and the flames will be controlled and handled by trained members of staff. School staff are responsible for controlling the pupils at all times.	Low	
Fumes produced by flammable liquids and gases, along with airborne lycopodium powder may cause respiratory problems to all participants	Children / Adults	All materials will be handled by appropriately trained staff, and sealed when not in use. The activity will take place in a well ventilated area. Audience to be positioned at least 2 metres away from sources.	Low	
Slips, trips and falls	Children/Adults	The activity will take place in the Band Hall or Lamp Cabin. Floor surfaces can become slippery when children enter the spaces and it is raining outside. Supervising adults should ensure that children are wearing sturdy footwear and watch them carefully to prevent trips. Beamish staff will highlight fixed hazards, remind participants to be careful and take all due precautions to ensure that conditions are kept safe.	Low	

Group work – security issues	Children /Adults	During the activity, children will be exploring in groups. Each group must be accompanied by an adult. Beamish admits free supervising places to a ratio of 1 adult to 5 children.	Low	

All children and adults must wash their hands on completion of the activity. Toilets and hand washing facilities are provided behind the Band Hall.

Date Reviewed: 8th September 2015

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