

Thurs 10 Dec – Sat 12 Dec 2015

7.30pm

stage@leeds

£9.00 (£7.00)

Box Office 0113 3438730

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Electrified

A New Musical

Educational Workpack

Springbank Primary School

Friday 11th December 2015

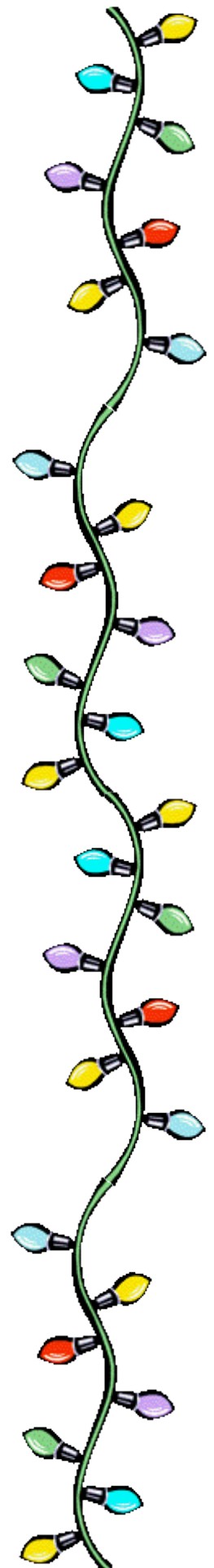
School of Performance and Cultural Industries



UNIVERSITY OF LEEDS

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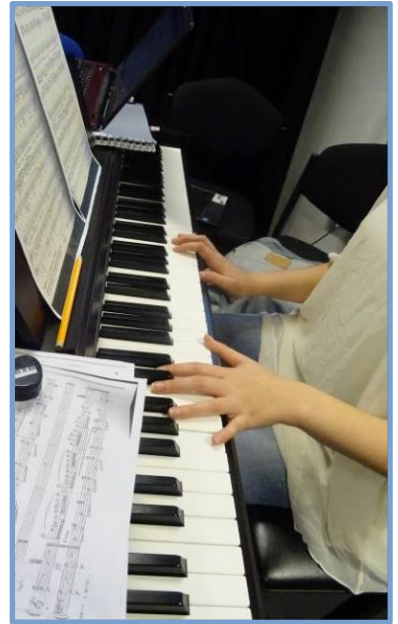


Who are we?

We are a group of final year Theatre and Performance students at the University of Leeds, writing and performing the original historical musical, *Electrified!*

Alongside the performance, which will run from **10th-12th December 2015**, the company's Education Coordinators Katie Dawson and Sophie Massa have been developing an educational project for Key Stage Two pupils.

The historical and somewhat scientific nature of the musical provides an opportunity to invite primary school pupils to see selected sections of the performance, and run a corresponding workshop to complement the Key Stage Two curriculum topic of Electricity.



(Photo credit: Mark McDougall 2015)

Many musical and theatre production companies, such as the Royal Shakespeare Company and the National Theatre, run educational workshops for schools, both to introduce children to performance art *and* to complement curriculum academic learning through practical material. Similarly, our company's workshop will invite Key Stage Two pupils to watch a piece of historical musical theatre, and then use the performance material to develop understanding of the topic. *We want to make science and history exciting!*

During the workshop, we aim to:

- ❖ Demonstrate through performance an insight into the development of domestic electricity, presenting the reception of electricity by different members of society.
- ❖ Present the complexity of electrification in English households, and help the pupils to understand the histories of electrical development.
- ❖ Identify and encourage the children's strengths in the Electricity topic, and help to build upon these through practical activities and creative discussion.
- ❖ Allow the children to explore their creativity through role-playing and drama, and develop upon their understanding of the historical and scientific contexts of electricity by challenging them to dramatically recreate scenes from the era of its development.
- ❖ Develop children's engagement with the topic through practical activity, whilst also developing communication and team-work skills through practical working.

A shortened version of the show will be performed in the workshop, but below we have provided a synopsis of the full-length musical.

A synopsis of Electrified: The Musical

Act One

It is the winter of 1882, and Gilbert and Sullivan's brand new comic opera *Iolanthe* is ready for its world premiere in the Savoy Theatre, London. However, all is not well in **William Gilbert's** rehearsals... Brand new cast member **Mary Dimmock** is causing a stir between the other girls, and there is constant competition to be the most beautiful, most elegant and most *seen* fairy in the show! During one rehearsal, **Mary** explains that she is extremely concerned about the use of the brand new phenomenon electricity in the show; small, pretty electrical 'fairy lights' are even a part of the girls' costumes! **Mary** tries to make **Mr Gilbert** understand her concern, as her brother, **William Dimmock**, was unfortunately electrocuted whilst working for the **Salisburys** at Hatfield House a year previously. **Mr Gilbert** assures **Mary** that the electricity is perfectly safe, and **Ms Sullivan** explains exactly what electricity is to the rest of the cast, in order to suspend their fears.



(D'Oyle Carte Opera Company, no date)

Meanwhile, in Hatfield House, **Lady Salisbury** is planning her tea party, where she will show her most prestigious guests the electric lighting she has installed in her home with the help of decorative electricity expert, **Ms Alice Gordon**. However, **Lord Salisbury** is concerned that the untimely death of their gardener **William Dimmock** will be brought up at the party, and expresses his concerns to his wife. **Mr Dimmock** was electrocuted a year previously in the



(Davis 2014)

Salisbury's grounds. In **Lady Salisbury's** attempt to make the room look as attractive as possible, the maid, **Ms Baldwin**, is forced to carry a lamp from surface to surface, wearing the essential protective gloves. **Lord Salisbury** grows tired of his wife's fussing, and attempts to move the lamp himself, but gets an electric shock. The **Salisburys** question whether electric lighting is safe!

In the gas-lit **Dimmock** household, **Elizabeth Dimmock** works with her daughter **Ruth** to prepare dinner for the evening; **Elizabeth** worries that her eldest daughter **Mary** is not

yet home from work (**Mary** tells her mother that she works at a cotton mill as **Elizabeth** would frown upon her working as an actress.) When **Mary** finally arrives home, **Ruth** tells her about her own day of work at Hatfield House, where she works as a maid.

In the Savoy Theatre, rehearsals are still going badly. The cast are gossiping in the dressing room when they are interrupted by **Mr Gilbert**, who has come to present the new electrical lights in the dressing room. The lights are switched on, and the girls, particularly **Ms Sybil Grey**, are taken aback by how ugly electrical light makes them! The girls declare war against Thomas Edison and Joseph Swan, and **Mr Gilbert** criticises them for focusing on their vanity rather than their commitment to the opera. He presents them all with a Christmas gift of complementary tickets to the show.



In the Hatfield House servant quarters, the three maids are in a panic over a very burnt duck. **Gwendolen**, the **Salisburys'** youngest daughter, comes to speak to **Ms Ruth Dimmock**. She confesses that she had loved **Ruth's** brother, **William Dimmock**, and that she is in despair mourning his death. **Lady Salisbury** overhears the shocking truth of her daughter's relationship with a member of her staff, and relays this to her eldest daughter, **Beatrix**.

During a rehearsal at the Savoy Theatre, **Ms Florence Atkinson** teaches **Mary Dimmock** a dance routine. **Ruth Dimmock** arrives at the theatre, and asks that **Mary** come home at her mother's urgent request. **Florence** offers to read in for **Mary**, and **Mary** is excused, much to **Ms Sullivan's** disapproval. When she arrives home, **Elizabeth Dimmock** reveals that she has found the show tickets hidden in **Mary's** bedroom, and is furious that her daughter has lied to her. She bans her from performing in the show and rips the tickets in anger.

Act Two

Beatrix Salisbury comes to visit her family at Hatfield House, ready for her mother's tea party. Following her discussion with her mother, **Beatrix**, who knows that **Gwendolen** is to be courted by Savoy Theatre actor **Mr Temple**, starts to prepare her sister for married life. **Gwendolen** detests the thought of married life, but **Beatrix** breaks the news to her that her mother has organised the meeting. Following the meeting, **Gwendolen** still refuses to accept her arranged romance, and rebels against her mother.

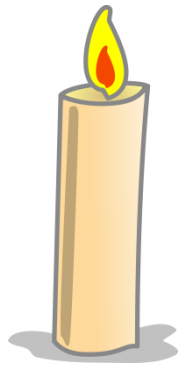
The day of the Salisbury tea party arrives, and **Lady Salisbury** nervously awaits her prestigious guests, with **Beatrix** trying to calm her down. Despite being early afternoon, all electric lights are turned on, with the curtains shut to keep the natural light out. The guests, **Ms**



Alice Gordon (decorative electricity expert) and **Lady Churchill** (Winston Churchill's mother) arrive, and start to compete to be the most important guest at the party. **Alice Gordon** talks about her upcoming publication, *Decorative Electricity*, and how the whole world shall be illuminated by electric light. **Lord Salisbury** and **Richard Temple** arrive, and attention soon turns to his relationship with **Gwendolen**. **Lady Salisbury** encourages **Gwendolen** to take **Mr Temple** on a walk around the garden, which quickly escalates into a row between mother and daughter. **Beatrix** intervenes and escorts the guests on a walk about the grounds, whilst **Lady Salisbury** talks with **Gwendolen**, forcing her to agree to take **Mr Temple's** hand.

Mary Dimmock still hasn't returned to the theatre, and the other fairy actresses are becoming more and more infuriated by her absence. **Ms Sullivan** suggests that **Mary** should be cut from the show. **Mr Gilbert** doesn't give up on **Mary** and goes to see her mother at their home. He tries to reason with **Elizabeth Dimmock**, and leaves her a new set of tickets in the hope that she will change her mind.

In the next scene, **Mary** is seen to return to the theatre, much to the rest of the cast's disapproval. Before rehearsing a number, **Sybil Grey** is told by **Mr Gilbert** to put on her electrical headpiece like the rest of the girls. She has left it on the side of the stage overnight, where the battery has burnt onto the floor. The girls are sent into frenzy, worried that the batteries will similarly burn into their skin. **Mr Gilbert** reassures them yet again, reminding them that lights must not be left on overnight, and explaining that the dangers of candle and gas light are much more severe, by telling the story of **Emma Livry**, the dancer whose dress caught fire on stage.



Everyone prepares for an evening at the theatre to watch *Iolanthe*, and the cast prepare for their first performance, upholding their reputation for bitterness and mindless bickering. The show begins... but the electrical lights quickly cut out, and the girls are left in darkness. **Mary** starts to sing a song, *The Old Lamp Lighter*, to fill the silent darkness, and the girls soon join her in a harmonic chorus.

Gilbert invites the cast and audience to a drink in the theatre foyer as they wait for the lights to come back on. Here, **Elizabeth** congratulates **Mary** on her performance of the song, along with **Mr Gilbert**. **Lady Salisbury** catches the immoral **Mr Temple** with **Ms Alice Barnett** in the corner of the theatre, and tells **Gwendolen** that she has made a mistake, and that **Gwendolen** should not marry **Mr Temple**. When the electric lights are eventually fixed, the cast of *Iolanthe* give thanks, and toast "to the lights!"



Putting the production together

Electrified the Musical is written, composed and produced entirely by a group of students in the School of Performance and Cultural Industries at the University of Leeds. The musical has been created over a rehearsal period of seven weeks followed by two production weeks, during which an educational matinee and workshop will take place.

The musical is partially historically accurate, based on real people and real-life events in the timeline of electricity development. Therefore, our educational workshop not only develops upon pupils' understanding of the scientific process of electric lighting, but provides a historical *context* of its development. Being a period piece, our cast and creative team have had to focus especially on creating the world of the Victorian era. Theatrical devices enable us to do this, for example:

- ❖ Set design
- ❖ Costume design
- ❖ Props
- ❖ Accent and dialect
- ❖ Etiquette of the period



Our rehearsals have involved a rigorous research process, reading both modern research texts and original texts from the period, in order to be able to present the different perspectives of electricity at the time of its development. *Electrified* demonstrates such perspectives through different groups of characters, and below we have outlined some of these early perceptions of electricity:



Rehearsal: The fairy dancers of *Iolanthe* complain about how the new electrical light makes them ugly. Many females of the Victorian period did not initially support the development of electricity, as they thought that electric light made their complexions 'pallid'! One of the songs in our musical, 'Ugly Light', was developed using the exact words of a poem published in *Punch* in 1882, called 'A Lady on Electric Lights', which shows the ladies declaring war on Edison and Swan! (Appendix 1)

Rehearsal: Lady Salisbury talks to her husband Lord Salisbury about the guest list for her tea party. As she mentions Mrs Alice Gordon, she starts to panic about the placement of her decorative lamps (she must impress Mrs Gordon, and show off her social status to her guests!) Lady Salisbury moves the lamp, trying to find the most suitable place for it. Lord Salisbury grows tired of his wife's fussing, and decides to take matters into his own hands. When he goes to pick up the lamp, he gets an electric shock, as he was not wearing the insulating gloves!



Rehearsal: Paula Hodgson rehearses her role as Mrs Alice Gordon, wife of electrical engineer James Gordon. Here, she is at Lady Salisbury's tea party at Hatfield House – where she helped to design the electric lighting. Many wives of electrical engineers helped in the success of electric lighting, as they appealed to ladies by demonstrating how electrical lighting, considered harsher and more glaring than candlelight, could be softened and made more flattering by using specially designed shades.

Rehearsal: The dancers of *Iolanthe* at the Savoy Theatre rehearse their spectacular opening number! The Savoy Theatre was the first theatre to be fully lit by electricity, with *Iolanthe* being the first production to be staged following its electrification. *Electrified the Musical* shows the performers, not only worrying about their appearance in the lights, but about their safety, as 'fairy lights' are incorporated into their costume! Many people did not fully understand electricity, and so were worried about what dangers it may bring!





The history of the electric light

1878 – Thomas Edison (America) and Joseph Swan (Britain) are the first people to create viable electric lightbulbs! Swan was technically the first to achieve this, but Edison patented his lightbulb first. Edison is often more associated with this, due to his invention of electrification systems for whole cities! This is probably due to his position in a research team at Menlo Park – a research opportunity that Swan did not have.

1878 – Cragside, the home of William Armstrong near Newcastle, becomes the first house to be lit by hydroelectricity! A very bright arc light is installed, powered by a nearby stream.

1879 – The first telephone exchanges are established in Britain – people start to understand what electricity can be used for, and people are getting used to overhead wires in cities and towns!

1880s - Electricity and gas companies argue about which of the two is safest to use in the home.

1880 – Cragside is the first house to be electrically lit by Swan's light bulbs, which are not as bright as the previous arc lights. The dimmer lights make lighting indoor spaces more practical.

1881 – The death of a labourer at Hatfield House is reported in the press, causing people to worry about the safety of electricity

1882 – *Iolanthe* opens at the Savoy Theatre; this comic opera was the first theatrical production to incorporate electrical lighting. The cast members even wore 'fairy lights' on their heads and bodies. Ladies wearing electricity as a form of jewellery helped in the promotion of electricity as a safe source of lighting!

1903 – Lotherton Hall (near Leeds) gets electricity! A nearby coal mine owned by the family had previously used electric lighting, which may have played a part in the decision to electrify the house.

1919 – After World War One, electricity companies are trying to expand, encouraging businesses to use electricity! However, as businesses only work during the day, electricity companies encourage the use of electricity in the home, so that they can make money from night time usage as well!

1926 – The national grid is proposed in parliament.

1938 – The national grid is finally operating!



Electrifying the Country House

Electrified the Musical, and the corresponding educational programme, have been developed in connection with the University of Leeds project, '*Electrifying the Country House*.' This project has been run by Professor Graeme Gooday and Dr. Abigail Harrison-Moore, with Dr. Michael Kay working to develop educational resources based on their research. The project aims to build upon the research conducted by Gooday in his publication, *Domesticating Electricity* (2008), and by Gooday and Harrison-Moore in their subsequent joint publications, in order to help country houses such as Lotherton Hall, Craggside and Standen make better use of their historic electrical technologies. Both the project and Gooday's publication have been instrumental in the creation of our musical and educational programme.

Electrifying the Country House also creates educational material and resources on the development of electricity; a development upon which our musical is based. In addition to the musical, our Education Co-ordinators have been working with a small cast to create an educational film to be played in Lotherton Hall's cinema room, and a digital interactive resource for Key Stage 2 groups about the history of electricity. This digital interactive resource will be available online in March 2016 from mylearning.org; a website which hosts educational interactive content for schools from various heritage sites and organisations. This interactive resource will include content from the local site Lotherton Hall, as well as two other historical sites (Standen and Craggside). This resource may prove useful to the Key Stage Two electricity curriculum, providing a social, technical and aesthetic history of electricity through dramatic role play in the settings of the three sites. Other outputs from *Electrifying the Country House* include:

- ❖ An electrical heritage house trail for families at Lotherton Hall, encouraging visitors to look out for electrical points of interest in the house and discover what they are!
- ❖ Public lectures for each of the houses about the history of domestic electricity
- ❖ Animations to be used at Craggside about their historical electrical artefacts and systems



Lotherton Hall (Go Yorkshire, [no date]).



The drawing room, Lotherton Hall (Photo credit: Michael Kay)

The science curriculum

YEAR 4

(

Statutory requirements

Pupils should be taught to:

- identify common appliances that run on electricity
- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- recognise some common conductors and insulators, and associate metals with being good conductors.

Above - (Department for Education 2013: 23)

Below – (Department for Education 2013: 34)

YEAR 6

Statutory requirements

Pupils should be taught to:

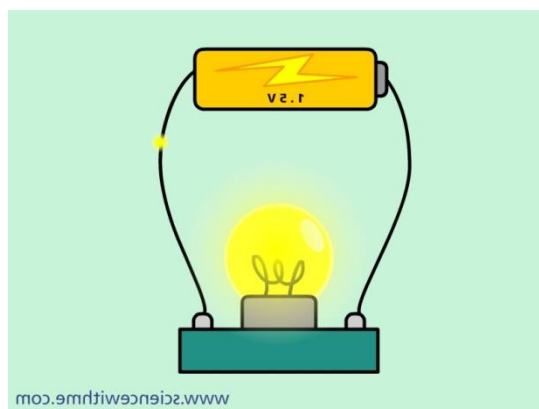
- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- use recognised symbols when representing a simple circuit in a diagram.

Our educational programme uses material from *Electrified the Musical* in order to provide primary school pupils with an insight into the *development* of electricity, and allows them to gain an understanding of its early reception – electricity was not always so well-accepted! Our workshop includes activities to help children understand the working of an electrical circuit, by involving them in a practical demonstration. We also include activities to increase pupils' awareness of the everyday appliances they might be using that require electricity. Our musical demonstrates the early processes of having electricity in the house (lamps often couldn't be touched without wearing protective materials), and therefore encourages the children to consider the advancements in electrical lighting, for example in the safe insulating material used in today's lamps.

Our workshop exercises

The circuit exercise

This exercise helps the children to visualise an electrical circuit practically, using their own bodies to create the components of the circuit. (Appendix 2 shows a diagram of electrical circuits and their symbols.) The children stand in a circle, and are the 'electric circuit'. One child is assigned the role of the power source, with the child next to them being the switch. When the switch 'connects' to the power source (for example by putting their feet together) the current can start to move around the circle. This will be done by passing the clap in our workshop, but can also be done by passing tennis balls around. As the current moves around the circle, the lightbulb (a role assigned to another child) is on – they can interpret this as they want to (it may be a high, smiley face, for example!) When the switch is taken away from the power source, the current stops flowing around the circuit and the lightbulb 'turns off' (lowers their head for example.) This exercise can be developed by adding more power sources and more components (eg: another lightbulb, a buzzer), and asking the children what might happen when we do so.



(Science with me 2015)

Electrical appliances

We will show a short video of a morning 'getting ready' routine, and ask the children to write down all of the things they see that use electricity. This will allow the children to get an insight into how electricity is intrinsic in our everyday life, and consider how electrical currents can travel to different appliances so that we can use them. The National Curriculum states that children should be able to "identify common appliances that run on electricity" and we aim to test the children's ability to do this in this activity (see Resources on page 19 for the video!) This exercise can be extended by asking them to identify appliances within the classroom that run on electricity, without seeing them being used!



(Dreamstime, [no date])

Spot the difference – old vs. new light!

We aim to engage pupils in a discussion of the differences between old and new lighting. Showing them pictures of Victorian and modern style lamps, the children will be asked to name the differences between the two. This will allow the children to develop ideas surrounding decoration and aesthetics, the technicalities of how the lamps work, and the materials that are used in the lamps (how newer lamps are better-insulated, for example.)



Electrolier at Lotherton Hall (Photo credit: Michael Kay)



(CC Design Tech 2015)

Design an electric light (old or new!) – An exercise that can also be taken back to the classroom!

This activity will allow the children to be creative with electrical designs! They can explore ideas of decorative patterns from the Victorian era and compare them to modern lighting designs; they should think about how design ideas have changed over time and apply this to their drawings. They could also start to think about the materials that might be used in old and new lighting designs! (Remembering Mr Salisbury's 'shock' incident with the electric lamp, the material used on the first electric lights was not *insulated* as today's lamps are!) This allows the children to start thinking about materials that are safe for electrical appliances (they might even think about the material used for the wiring of their lamps!)



(Sachs, [no date])

Drama activity



Activity 1: recreating the scene

- ❖ In our educational workshop, we use a drama activity to encourage pupils to consider the development of electric lighting from the perspective of people in the 1800s, and open their minds to thinking about the fact that it was not always as well-received and easily-used as it is today.
- ❖ We use characters and ideas from *Electrified the Musical* to allow pupils to explore this concept and their own creative skills. Children are put into small groups, with each group taking on roles of the Salisburys and the cast of Iolanthe, for example.
- ❖ The children should *empathise* with the situations of these characters, understanding that, in the Victorian era, many people did not understand electric light and therefore may have felt scared of the new source of electricity, preferring the older methods of candles or gas lamps.
- ❖ Children are asked to create a short scene based on what they have seen in the musical, and incorporate some of the ideas surrounding the early receptions of electric light! (See pages 7 and 8 for some ideas!)

This activity also allows the children to gain a historical perspective of life in the Victorian era, as we aim to help the children develop their *performance skills* through workshopping their posture and accents, and therefore introducing the children to acting concepts.



Upper class Victorian ladies, (Victorian era women 2009)

Writing and drama exercise

Below we have included a drama and writing exercise that can be completed back in the classroom. This exercise will aim to develop pupils' understanding of historical perspectives of electricity, as well as their dramatic skills *and* creative writing.



Activity 1: Writing in a role

- ❖ This is an exercise that can be used after watching *Electrified the Musical*.
- ❖ Ask the children to find a space in the room. Read them the extract in Appendix 3, and ask them to think about the character of Mary Dimmock and how she might feel.
- ❖ The children can use their bodies to 'become' the character if they wish – the aim is for them to empathise with Mary and understand what she is feeling on her first day at the theatre.
- ❖ They can perform actions and gestures to help them to connect with the character as you read the extract.
- ❖ Then ask the children to return silently to their desks, not speaking to any other children on the way. Imagining what the character may have felt or thought in the scene described in the extract, they should write 'in role' what the character may have written in their diaries on the day of this event.
- ❖ As they write their diary entries, you can prompt the children with questions such as: what might the character have been feeling? Why might she have felt that? What does she think about Mr Gilbert's use of electricity in the costumes?



Appendix 1

A Lady on Electric Lights

OH, cruel electricity, that gives so strong a light,
In many an unprotected lamp you flashed supremely bright,
You shone upon our pretty gowns, illuminated flowers,
But all too ruthlessly lit up these pallid cheeks of ours.
Twas at the Horticultural, and ferns and flowers were there,
The beautiful gloxinias, and orchids passing rare;
They faced the incandescent lamps as erst they faced the sun,
While many a cheek grew strange of hue and felt itself undone.
And vainly Art aids Nature now in unobtrusive way,
This lamp malign of EDISON'S is worse than brightest day;
A veil may serve to screen from sun, but when in evening dress,
There's nothing twixt these awful lamps and female loveliness.
Then, Men of Science, you must aid and tell us if you please,
How shall we make our charms withstand such glaring lights as these?
For if the Ladies find these lamps still turn them pale and wan,
They'll lead a feminine Crusade 'gainst EDISON and SWAN!

Punch. July 29th, 1882.

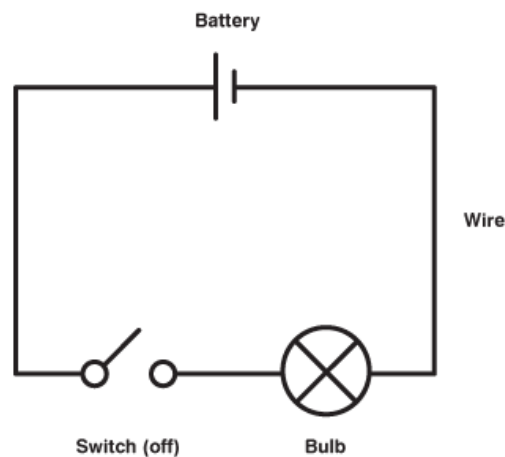
Appendix 2

Circuit diagram and symbols

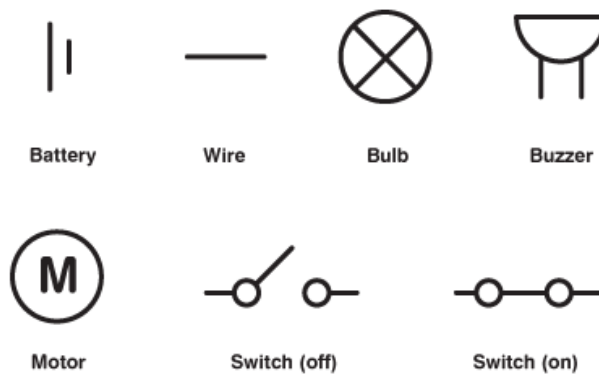
A complete circuit, including a power source and a lightbulb



The complete circuit in its diagram symbol form



Symbols for drawing diagrams of circuits



(BBC Key Stage Two Bitesize 2014)

Appendix 3

Mary Dimmock

Mary Dimmock is attending her first day in rehearsals at the Savoy Theatre. She could not sleep at all last night, and rushes around early in the morning, trying to prepare for the day ahead without letting her mum know where she is going! She has told her mother Elizabeth that she is working at the cotton mill, as her mother definitely would not approve of her working as a dancer! She rushes out of the door, and starts her journey to the theatre.

When she arrives, there are lots of other girls – and they are all very posh! Mary feels a little out of place – she doesn't fit in with how the other girls speak or dress and they are sometimes very mean to her. She tries to make friends with some of the girls, but only one, Ms Florence Atkinson, is kind enough to welcome Mary! Mary starts to learn the dances with the other girls, trying to keep up with them – they are all very good at dancing! Mr Gilbert tells the girls to lift their heads more in the dances, as they will be wearing headdresses with electrical lights on in the show! Mary pauses and thinks about this, as the electrical lights start to remind her of her brother, William Dimmock. Mary talks to Mr Gilbert about the lights, and explains that her brother had an accident with electricity only a year ago. She explains that she does not know what electricity is, and Mr Gilbert tries to explain it to her. Mary knows that he is trying to make her feel better, but she still does not understand and continues to dance whilst remembering her brother and his accident with electricity.

Resources

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If there is no photo credit, an original Electrified the Musical photograph has been used (all taken by Mark McDougall and Rhiannon O'Grady.) Clip art (uncredited) available in Microsoft Word 2010 has also been used in this document.