Whole Class Assembly/Presentation

Topic
Electricity

For class size
20 to 40. In classes with fewer children some will need to take more than one of the smaller speaking parts.

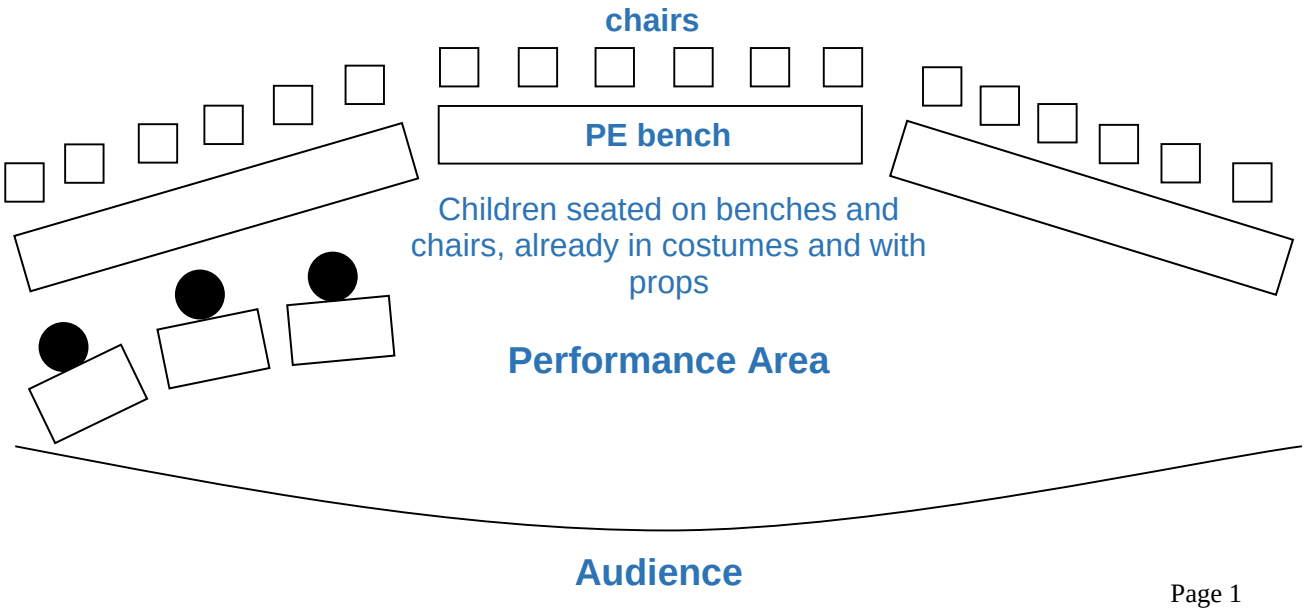
Summary
The assembly begins with 3 contestants in a game show pressing buzzers to answer questions. One contestant's buzzer doesn't work, and on inspection it is revealed to have an incomplete circuit. With children playing the parts of electrical components there follows a demonstration of how to build a circuit and how to change the component features. We then consider the everyday uses of electricity, our reliance upon it, and how to be safe when using it. Then, having fixed the contestant's buzzer in the light of the facts learned, the quiz concludes with questions about electricity. An optional prayer and then a song, 'Electricity', close the assembly.

Duration
20 – 25 minutes

Props/costumes to make or collect
You will need to make 3 simple circuits with switches and buzzers – see p34. The game show presenter should wear a sparkly jacket and bow tie, and his assistant a glamorous dress. For the circuit diagram you will need A1 card cut-outs of the recognised symbols for 2 batteries, a buzzer and a switch. Long skipping ropes or string can represent wires. Two maintenance workers could wear overalls and hard hats. The battery powered gadgets required are a mobile phone, a remote control car, a clock, a hand-held video game, and an i-pod (or similar) with headphones. You will also need a flip chart or cut-outs depicting pictures of the 'dos and don'ts' of electrical safety mentioned.

Music required
Abba's 'Money, Money, Money' – chorus only.

Seating



(To the chorus of 'Money, Money, Money' a tacky game show host, Eddie Wallet, and his glamorous assistant enter to one side. On the other side are 3 contestants seated at tables. They each have a simple 2 battery circuit, with a buzzer and a switch, hidden behind a decorated name card. They will flick the switch on then off to buzz in with an answer. Contestant 3's circuit is wired up in correctly and doesn't buzz.)

Eddie Hello and welcome to 'Dosh' – the quiz that's the 'biz', where, in a dash for the cash, our contestants must work that finger, no time to linger! Here's my suggestion - as I ask a question, if you want to win…….

All BE THE FIRST TO BUZZ IN!

Eddie You got it! I'm Eddie Wallet, and this is my gorgeous assistant Penny.

All *(wolf whistle)*

Eddie So Penny, why don't you introduce our three lucky contestants who are hoping to walk away with Eddie's readies.

Penny Certainly Eddie. Contestant number 1 is *(name)* and her/his hobbies are (*mention hobbies)*. Contestant number 2 is *(name)* and her/his hobbies are (*mention hobbies)*. And Contestant number 3 is *(name)* and her/his hobbies are (*mention hobbies)*.

Eddie Let's have a round of applause for all our contestants who are here to play 'Dosh'! So just to recap, 'Dosh' is a straight forward question and answer quiz. Remember, here's my suggestion - as I ask a question, if you want to win…….

All BE THE FIRST TO BUZZ IN!

Eddie Ok, here goes. Question 1. *(He reads from a clip board or cue cards)* Who had a chart hit with the song 'Happy'?

(All 3 contestants switch their switches. Only contestants 1 and 2's buzzers sound. Contestant 3 looks confused. Penny keeps a running tally of scores on a white board.)

Eddie *(to contestant 1)* I think that was you *(name)* with the first buzz. Give me your answer.

Contest. 1 That would be Pharrell Williams.

Eddie Correct. Next question. In which popular TV programme do contestants live in the jungle, undertaking 'bush-tucker trials'?

(Again all 3 contestants switch their switches, and again only contestants 1 and 2's buzzers sound. Contestant 3 looks angry and switches the switch again in frustration.)

Eddie *(to contestant 2)* Yes *(name)*? You buzzed first.

Contest. 2 I'm a Celebrity – Get Me Out Of Here!

Eddie Correct. Question 3. What is the capital city of Australia?

(Again all 3 contestants switch their switches, and again only contestant 1 and 2's buzzers sound.)

Contest. 3 But my stupid buzzer won't……

Eddie Sorry *(name)*, but if you want to speak you must buzz in! *(to contestant 1)* Yes *(name)*? What is the capital city of Australia?

Contest. 1 Canberra.

Eddie Correct. Question 4. How many cakes are there in a baker's dozen.

(Again all 3 contestants switch their switches, and again only contestant 1 and 2's buzzers sound.)

Contest. 3 This is ridic……

Eddie Sorry *(name)*, I can't accept an answer unless you buzz in! *(to contestant 2)* Yes *(name)*? What is the answer?

Contest. 2 Thirteen.

Eddie Correct. Now come on *(name of contestant 3)*, you'll not win Eddie's readies if you don't buzz in.

Contest. 3 But that's what I'm trying to tell you, you silly man! My buzzer doesn't work! Listen……

(S/he flicks the switch repeatedly.)

See. It's broken.

Eddie Oh for goodness' sake. Penny, call maintenance.

Penny *(with finger in ear as if talking to the director)* Can we get maintenance down here right away, before his lordship blows a gasket.

(Two maintenance operatives enter and go straight to contestant 3's buzzer. They remove the name card and stand there tutting.)

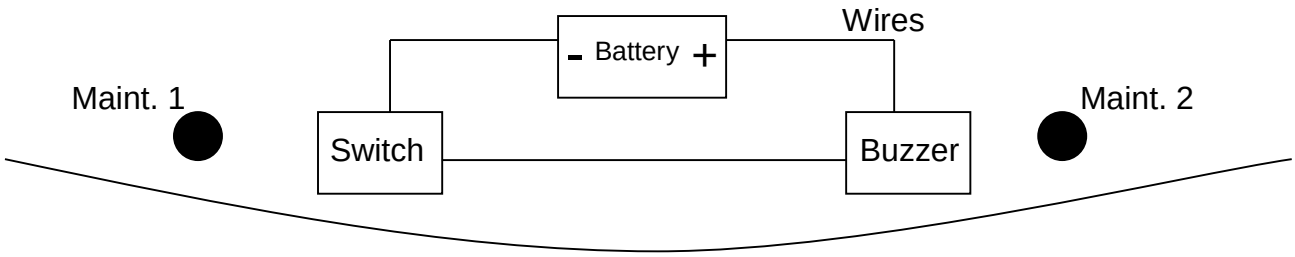
Maint. 1 Look at this! Which joker wired this up?

Maint. 2 It's all over the place. Honestly! *(tut)* Cowboys!

Penny Can you fix it? We've got a show to finish.

Maint. 1 Luckily we can. It's an easy enough job, but it may take a few minutes…

(Eddie, Penny and the contestants sit down. The performance area is then occupied by children in the circuit 'diagram' as shown. The cut-outs held by the children should depict the standard symbols for the electrical components of a simple circuit. For wires use long skipping ropes or string attached to the cut-outs or held by the children holding them. The maintenance operatives move over to describe the set-up.)



Audience

Maint. 2 For anything electrical to work it must contain a complete electrical circuit. This is a simple electrical circuit containing electrical components.

Battery A battery is the power source for an electrical circuit. It has two terminals, one positive and one negative. Electricity travels from the negative terminal, round the circuit, and back to the battery's positive terminal. After some time the battery will go flat, which means it will no longer have an electrical charge. It must be replaced, or charged up again if it is re-chargeable.

(A second battery joins the circuit.)

Battery 2 If more power is required in a circuit, for example to make a buzzer stronger or a bulb brighter, more batteries can be added. You must be careful, however, to connect them correctly. The negative terminal of one battery must join to the positive terminal of the other….like this. If two positives or two negatives are joined the circuit will not work.

Maint. 1 The electricity can only travel through conductive material, in most cases copper wire. Any other material is known as an insulator, and will not allow electricity to pass through. These wires must be joined to every component in the circuit. If there are any gaps or breaks in the wires the electricity will not be able to get back to the power source and the circuit will be incomplete.

Buzzer The whole point of an electrical circuit is to power something, or to make something work. In this case it is a buzzer. The buzzer must be joined into the circuit by the wires. Like the battery, the electricity must be able to flow into it and out of it, which is why the wires come into it and out of it. When the circuit is complete, the flow of electricity through the buzzer is what activates its buzzing mechanism.

Switch Every electrical appliance that we use has a switch, like in this circuit. A switch enables us to create a gap in the circuit which stops electricity travelling round, and turns it off. In this case it will stop the buzzer working. A switch in the 'on' position will close that gap, complete the circuit and let the electricity travel.

Maint. 2 So that's how it's supposed to work. However, with poor *(name of contestant 3)*'s buzzer something is not quite right. It could be one of five faults. Let's look at these in detail.

(The maintenance operatives go back to examine the faulty buzzer and 5 children take their places to talk about the 'diagram'. As they describe possible faults in the circuit they stand by the relative section of the large model.)

Child 1 Firstly, the batteries could be flat, but that's not the case here. Before each broadcast of the game show 'Dosh' new batteries are fitted to the contestants' buzzer circuits. It must be something else.

Child 2 It could be the buzzer itself. There could be a malfunction in its mechanism, but all the buzzers are checked twice before they're placed in the contestants' units, and no faults were found in any of those used today.

Child 3 A common reason why circuits don't work is because there is a gap. Either the wire has broken, or else it hasn't been connected to one of the components securely and has come loose, creating a break in the flow of electricity.

Child 4 Coming back to the batteries, it could be that both wires have been connected to the same terminal of one battery. Remember, electricity can only flow out of the negative terminal and back into the battery through the positive terminal.

Child 5 And finally the batteries could be in the wrong position in the circuit. As we've just been told, if more than one battery is in a circuit, they must be joined with the negative terminal of one battery to the positive terminal of the other. This is a common mistake people make when putting new batteries into appliances.

Child 1 While our maintenance operatives try to find out which of these faults is causing *(name of contestant 3)*'s buzzer not to work, let's take a look at how we make use of electrical circuits containing batteries in our daily lives.

(These 5, and the children with cut-outs of components, sit down, and 5 more with various electrical gadgets take their places.)

……..end of sample…….