

Whole Class Assembly/Presentation

Topic

Light – incorporating Diwali. Ideal for performance late October to mid November.

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 by considering various sources of light, and how light is important in our daily lives. Following a short lesson about how we see there is a demonstration of how light can be blocked (forming shadows), or can pass through materials depending on whether they are translucent, transparent or opaque. We move on to look at how light can be reflected and how mirrors are useful in various situations. There follows a short dramatic presentation of the story of Rama and Sita and the origins of Diwali, the Hindu festival of lights. An optional prayer and then a song, 'Let There be Light', close the assembly.

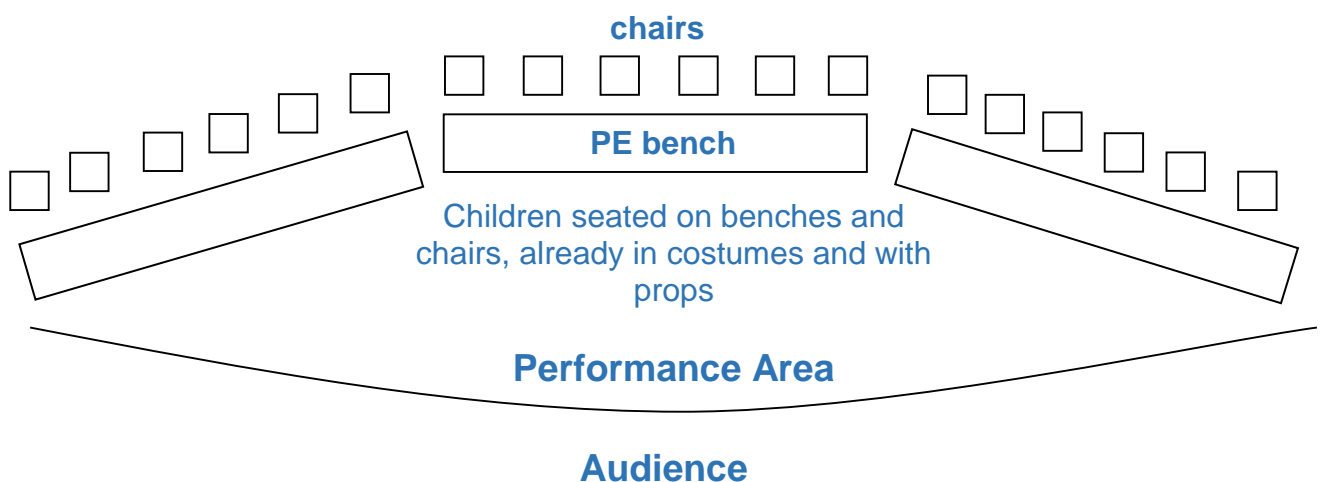
Duration

20 – 25 minutes

Props/costumes to make or collect

For the demonstration of sources of light you will need a candle and match/lighter, a torch, an apple, a cardboard box and a duvet/blanket. Make A1 size cut-outs of the sun, a house and an eye for the explanation of how we see. For the section on light and materials you will need a powerful torch, a white board, an A3 card cut out (any shape), a transparent and a translucent sheet of plastic or cellophane and 3 sturdy sticks of dowel. A large mirror and display board are required for the reflection demonstration. For the Diwali play children should be dressed in traditional Indian garments. For Ravana cut ten holes in a sheet for ten children to put their heads through, and give them ghoulish masks to wear. Hanuman will need a monkey mask, and all children should have a decorated paper lantern.

Seating



(4 children and the teacher stand at the front facing the audience. If possible your hall curtains should be shut. The lights are switched off.)

Child 1 Let there be light!

(The teacher strikes a match, lights a candle held by child 2 and stands beside him/her.)

Child 2 Fire is a source of light!

(Child 3 points at the ceiling as someone switches on the hall lights.)

Child 3 Electric bulbs are a source of light!

(Child 4 points at the windows as others open the curtains.)

Child 4 The sun is a source of light!

(The teacher blows out the candle and resumes his/her place.)

Child 1 Now that's better isn't it. We can all see what we're doing. Welcome to our assembly which is all about...yes, you've guessed it....Light!

Child 2 As you've just seen, light can come from various sources. A source of light is something which gives out, or generates light.

Child 4 Since the dawn of time the sun has been the earth's major source of light. Although it is approximately 150 million kilometres away its light has helped the earth to evolve and sustain many living organisms.

Child 3 Only very recently have humans introduced other sources of light to the planet. First fire, which was really only needed for warmth and cooking, and then electric light which enabled our waking hours to continue long after the sun set.

Child 1 So what's so great about light? Let's look at a few examples of how it brightens up our lives.

(The 4 sit down and 3 more take their places. Child 5 has a box on his/her head, child 6 holds an apple, and child 7 is under a duvet or blanket with a torch. Child 5 staggers aimlessly and bumps into child 6!)

All OI! TAKE THE BOX OFF YER 'EAD!

Child 5 *(removing the box and blinking)* Ooh! That's better. The major benefit of light is that it is the reason we can see. Without light it would be impossible to get things done. OK, moles and earthworms seem to manage without light and sight, but I want more out of life than crawling around eating bugs and dirt!

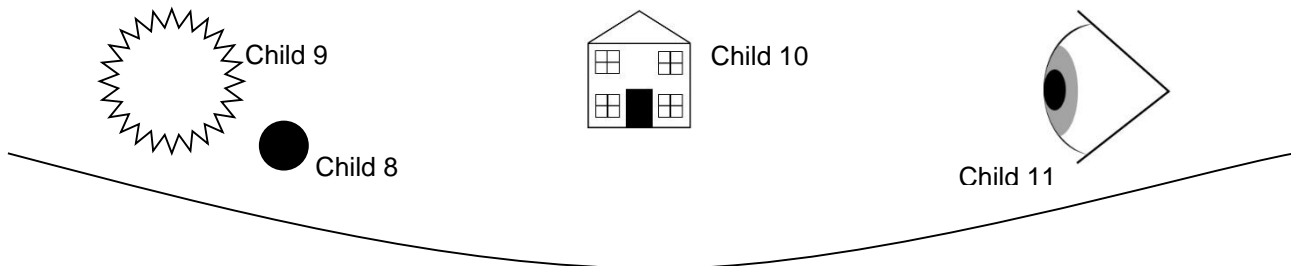
Child 6 Without light nothing on our planet would grow. It's not a coincidence that it's in the warmer months of the year, with more daylight, that our crops grow. Photosynthesis is the process these crops use to feed themselves, and this word literally means 'made using light'. So without light we'd all starve! (*bites apple*)

Child 7 (*emerging from beneath the duvet with a torch*) Many years ago people would go to sleep when darkness fell. But nowadays electric light lets us carry on with the day's activities long after dark, which is helpful because I forgot we've got a spelling test tomorrow and I haven't learned my words.

Hidden voice It's midnight! Go to sleep!

Child 7 (*going back under the duvet*) I guess I'm in for a long night!

(*These 3 sit down and 4 more take their places as shown. Child 9 holds a diagram of the sun, child 10 one of a house, and Child 11 one of the human eye.*)



Audience

Child 8 Let's take a closer look at the important part light plays in letting us see things around us. Our eyes are obviously the parts of our body which see objects, but it isn't the objects themselves which go into our eyes. That would be pretty painful! It's all to do with the movement of light.

Child 9 Firstly, a source such as the sun gives out rays of light. These rays of light travel in perfectly straight lines in all directions, and incredibly fast – around 300km per second!

(*Child 8 moves from the sun to the house.*)

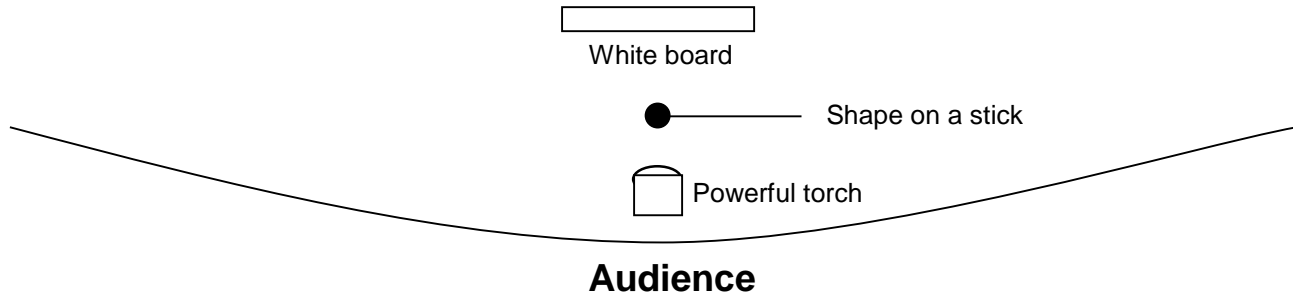
Child 10 These rays then hit any and every object that can be reached in a straight line, in this case a house. They then bounce off the object and carry on travelling in straight lines. If a person is facing the object some of the light rays will travel into their eyes, if they are open.

(*Child 11 moves from the house to the eye.*)

Child 11 The light rays travel into the eye through a hole called the pupil. The lens then focuses them, and a perfect image of the thing we are looking at is projected onto the retina at the back of the eye, which is a bit like a movie screen. Information about this image travels down the optic nerve to the brain, which makes sense of the object we're looking at.

Child 8 That's why it's impossible to see in total darkness. Unless light is bouncing off objects and entering our eyes, we don't know where things are.

(These 4 sit down and 4 more take their places. They position powerful torch in front of a white board or white-covered display board as shown.)



Child 12 An interesting thing about light is the fact that it can be blocked by certain materials, depending on their properties. Here we have torch which is shining light onto the surface of this white board. All the light from the bulb is reaching the board.

Child 13 But watch what happens when I put this shape, cut from card, in the way of the light on its journey from the torch to the white board.

(A cut-out shape on a stick is held between the torch and the white board, so a shadow can be clearly seen.)

The card is what we call opaque. This means it doesn't let any light pass through it. The light rays hitting the shape are blocked and cannot travel onwards to the board, which is why you can see a dark area which we call a shadow. This shadow is exactly the same shape as the object which is blocking the light.

Child 14 ~ If *(child 13's name)* moves the shape nearer to the light watch what happens... ..the shadow gets bigger because more light rays are blocked. If s/he moves away from the light source and nearer to the board watch what happens.....the shadow gets smaller because fewer light rays are blocked. And when the opaque shape is removed completely from the passage of light rays.....the shadow is no more, as all the light can reach the board.

Child 15 Now watch what happens when I put this sheet of clear plastic in the way of the light on its journey from the torch to the white board.

(An A4 transparency sheet on a stick is held between the torch and the white board. The shadow of the stick will be visible, but not the sheet.)

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