Stage lighting

Introduction

At concerts and theatres stage lighting is used to create different effects.

In this activity you will use your research skills to find out:

- how different colours are created by mixing light
- how coloured light affects what we see
- how stage lights are used to create different effects
- how to combine lights to create special effects.

You will use your literacy skills to produce a fact-sheet to give to amateur-theatre groups to help them plan their lighting schemes.

Brief

You will produce a fact-sheet for people who are planning lighting effects for a concert or production.

Your fact-sheet should:

- state the primary and secondary colours of light
- describe how to create different colours of light
- explain how the appearance of objects changes under different coloured lights
- be made from one folded piece of A4 paper
- be suitable for people with no scientific knowledge.

Step 1

Research the following topics:

- primary and secondary colours of light and what happens when they are mixed
- how different colours of light are produced
- how coloured light affects the appearance of objects.

Step 2 (extension)

Find out how stage lighting is used to create other special effects. For example, research the difference between spot-lights, flood-lighting, and back-lighting.

Step 3

Plan appropriate sub-headings to structure your fact-sheet and decide what important information you want to include.

Step 4

Make your fact-sheet.

Sources

Primary and secondary colours

This website explains how coloured light mixes to make secondary colours:

http://www.funscience.in/study-zone/Physics/RefractionOfLight/PrimaryColorsAndSecondaryColors.php#sthash.3JkNhB7w.dpbs

Coloured light and filters

This website contains a lot of detail so look at the pictures. It explains what primary and secondary colours of light are. It explains what filters do to light and there is a table showing the colour of objects seen in different lights. You will need to follow the different links to get to all of the useful information:

www.cyberphysics.co.uk/topics/light/color.htm#addition

Mixing colours

This website allows you to see the effect of mixing different colours:

https://trycolors.com/

Stage lighting (extension)

This website explains the difference between different types of stage light and how effects can be created:

www.stagelightingguide.co.uk/

Writing frame

Produce a fact-sheet to give to amateur-theatre groups to help them plan their lighting schemes.

Summarise your research findings on the key areas below.

What are the primary and secondary colours of light?	What colours are produced when coloured light is mixed?	How are different colours of light produced? e.g. filters
How and why do objects appear different in coloured light?	How are other stage-lighting effects created? (extension)	Plan for layout of fact-sheet

Important points

- Make sure your leaflet fits on one folded piece of A4 paper.
- Use interesting images and language that people who are not scientists can understand.
- Labelled diagrams and bullet points are better than a lot of text. Summarise the points.

Your work

You have now made a fact-sheet to give to amateur-theatre groups to help them plan their lighting schemes.

Look at the questions below and check whether you have met the brief.

- Have you stated the primary and secondary colours of light?
- Have you stated the combinations of coloured light that are used to create other colours?
- Have you described how filters affect the colour of light passing through them?
- Have you described how colours of objects appear to change when you see them in coloured light?
- Is your fact-sheet made of one folded piece of A4 paper?
- Have you used language which can be understood by people with no scientific knowledge?