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**Lesson outcome**

Understanding the effects of lighting in an animation

**Resources needed**

* modelling equipment such as Lego, Plasticine, junk or toys for creating a scene from *The Tiger Who Came to Tea*
* tables and a variety of lights, such as desk lamps and torches. Halogen bulbs are good because they don’t get too hot. Clamps or stick tac for securing the lights can be helpful
* iPads or cameras for taking photographs
* trays on which to build the scenes

**Lesson objectives**

**KS2 objectives**

Pupils should be taught to:

* plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* take measurements, with increasing accuracy and precision, taking repeat readings when appropriate
* record data and results of increasing complexity using scientific diagrams and labels
* use test results to make predictions to set up further comparative and fair tests
* report and presenting findings from enquiries, including conclusions

**KS3 objectives**

* ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
* make predictions using scientific knowledge and understanding
* select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate
* use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
* make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements

**Lesson introduction**

Lighting makes a lot of difference to the way a scene in an animation looks. That’s why in every animation production, there are people who are responsible for working out different lighting effects. In a hand-drawn animation, like *The Tiger Who Came to Tea*, the **director** and the **art director** are responsible. In a stop-motion animation, the **director of photography** is in charge of lighting. In a computer-generated animation there are **lighting artists** who recreate the effects of lights on computers.

This lesson is to allow the children to explore different outcomes by using different sources of light.

**Lesson activities**

**Task 1**

Look at the book of the film of the *Tiger Who Came to Tea* and think about where the sources of light are for the drawings. Is the light coming from the sun? Is it coming from a street lamp? From a window? What direction is the light coming from? How do you know?

**Task 2**

Ask the children to work in groups of around five or six to create a scene in 3D from the *Tiger Who Came to Tea*. They can use Lego, Plasticine, toys or any other modelling material. It might be helpful to do this on trays as they will need to carry the scenes to different light stations.

**Task 3**

Arrange light stations around the classroom. You will need around six sturdy tables. You will need to draw the blinds down in the classroom to help control the light. Use desk lights to create different lighting effects. Some can be on the left, some on the right, some from above and so on. You could also use torches. Label the light stations and have different lighting arrangements on them.

You could also have cameras or iPads for taking photographs at each station.

**Task 3**

Ask the children to predict what they think will happen to the lighting of the scene when they take photographs of their models at each one. Can they predict where will be the most effective use of light? What will be the differences? Discuss this with the children.

**Task 4**

In their groups, ask children take their model scenes to each light source station and take photographs of their models, noting the different effects of the lights.

**Task 5**

Allow the children to present their different photographs to the class, discussing the light effects.

**Task 6**

Tell the children to record their results in a table and conclude which lighting effects they would use if they were making an animation and why.

**Notes for teachers**

* Looking at shadows is the way to understand the direction of the light
* Bright, clean lighting will give a happy feel to a shot, whereas darker lighting with long shadows will make a scene more moody
* Light changes colours as well as casts shadows – when Sophie goes under the table her dress becomes darker

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