# Lesson Plan

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| **Title:** 3 Colour Imaging | **Date:** |
| **Learning objective/s:**   * To understand how red, green and blue filtered images combine to make full colour images. * To develop skills in using astronomical software. * To produce a 3 colour image using astronomical software. | **Curriculum links:** |
| **Learning outcomes**  **I want evidence children can:**   * Discuss how 3 colour images are produced. * Utilise LT Image to produce a 3 colour image from three filtered images. | |
| **Notes on children who have exceeded the performance expected:** | **Action to be taken:** |
| **Notes on children who did not achieve the performance expected:** | **Action to be taken:** |
| **Essential vocabulary:**  Filter, CCD. | **Possible misconceptions:** |
| **Cross curricular links:**  Physics, ICT, Mathematics. | |
| **Teacher resources including ICT:**   * Introductory Presentation PowerPoint. * Introductory Presentation notes (optional) * 3-Colour Step-by-Step Guide (printed) * Downloaded versions of a selection of data files. | **Children’s resources including ICT:**   * Access to a computer with LT Image installed. * Printed version of 3-colour step-by-step guide. * Downloaded versions of 2/3 sets of data files. |

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| **Organisation and class management:** | **Teaching points:** | **Notes:** |
| **Introduction:**  Whole class discussion | * Introduce the task and the learning objectives. * Use the PowerPoint presentation to introduce the idea of composite images and how CCD chips work. * If required demonstrate how to load images into LT Image and how to combine three filtered images to produce a 3 colour image. |  |
| **Main phase:**  Independent work | * Provide children with all resources. * Children should choose a set of data images and load all three into LT Image, taking care to place the red filtered image in the first window, the green filtered image in the second window and the blue filtered image in the third window. * Children should then use the fourth window to produce a 3 colour composite image. * Children should be encouraged to check the alignment of their image. * Children should be encouraged to use trial and error with the RGB settings within LT Image to produce the best looking result. * Final images can be saved as jpg files and printed if required. |  |
| **Plenary/Conclusion:**  Whole class discussion | * As a class look at a selection of the images produced. Are they all the same? Why not? Discuss the subjectivity involved. * Challenge the children to request their own 3 colour observations from the National Schools’ Observatory and use them to make a composite 3 colour image. |  |