# Lesson Plan

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| **Title:** Weight on Planets | **Date:** |
| **Learning objective/s:**   * To understand the relationship between mass and weight. | **Curriculum links:** |
| **Learning outcomes**  **I want evidence children can:**   * Distinguish between weight and mass. * Record results in a table. * Plot a line graph. | |
| **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:**  Gravity, mass, weight. | **Possible misconceptions:** |
| **Cross curricular links:**  Physics, ICT, Mathematics. | |
| **Teacher resources including ICT:**   * Activity Sheet Document * Computer, projector, board * Weight on Planets Tool (NSO Website) | **Children’s resources including ICT:**   * Graph paper * Ruler * Pencil * Calculator * Access to a computer * Weight on Planets Tool (NSO Website) |

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| **Organisation and class management:** | **Teaching points:** | **Notes:** |
| **Introduction:**  Whole class discussion | * Introduce learning objectives and task. * Discuss the ideas of gravity and weight vs mass. |  |
| **Main phase:**  Independent work | **Task 1:** Students determine their weight in kg. This may require them to be told 2.2lbs per kg, and 14lbs in a stone.   * Students use the Weight on Planets tool to calculate their weight on the different planets. * Students record their results in a table. * On which planets do they weigh the least/most? Students to discuss any correlation.   **Task 2:** Students plot straight line graphs of W against m for each planet. They should plot these on the same graph so they can immediately see which planets have similar gravity to Earth.  **Task 3:** Using the results from task 1 and the graphs from task 2, students should consider how the size of the planets affects the gravity. |  |
| **Plenary/Conclusion:**  Whole class discussion | * Discuss the idea that the smaller planets is where the weigh less and bigger planets is where they weigh the most. * Discuss how the mass of a planet plays a role in the force that gravity applies. * The equation: could be introduced at this point. |  |