

Learning without Limits (LWL) – Cell Tester – **Smart Materials: Precision Making with Specialist Tools and Equipment**

<b>Skill Set</b>	<b>Developing</b>	<b>Secure</b>	<b>Extending</b>
<p><b>Using computer-based tools:</b> Selecting and manipulating suitable images</p>	<p>1. Simple design found on a search engine with little care about image choice.</p> <p>2. The page margins may not have been adjusted correctly. The image is generally clear and fills the half page. The image may be distorted when stretched to fill the page. <input type="checkbox"/></p> <p>3. Lots of support was needed from the teacher to achieve the task. <input type="checkbox"/></p>	<p>4. Clear and interesting design found on a search engine with a clear thought process about design wanted <input type="checkbox"/></p> <p>5. The page set up is accurate and the image is centralised using up two thirds of the A4 sheet. The image has been cropped, and enhanced with neat cutting areas left around the object. <input type="checkbox"/></p> <p>6. Little Support was needed from the teacher. <input type="checkbox"/></p>	<p>7. Crisp and sharp image found and selected with ease, copied and pasted onto Word document. Students were able to support others and demonstrate the skills required. <input type="checkbox"/></p> <p>8. The page set up is accurate and the image is centralised using exactly two thirds of the A4 sheet. The phone is in proportion. The image has been cropped, and enhanced with regular measured cutting areas left around the object. <input type="checkbox"/></p> <p>9. No Support was needed from the teacher – working independently <input type="checkbox"/></p>
<p><b>Making using tools and equipment:</b> Soldering Iron and various hand tools</p>	<p>10. The two halves of the grey board shell are cut out but are not symmetrical shapes. <input type="checkbox"/></p> <p>11. The aperture for the circuit is roughly cut out. <input type="checkbox"/></p> <p>12. The solder joints are lumpy and bumpy due to too much solder. The solder joints had to be re-soldered with help before a good connection was made. <input type="checkbox"/></p> <p>13. Lots of support was needed from the teacher to achieve the task. <input type="checkbox"/></p>	<p>14. The two halves of the grey board shell are cut out and are almost symmetrical shapes <input type="checkbox"/></p> <p>15. The aperture for the circuit is neatly cut out. <input type="checkbox"/></p> <p>16. The solder joints are mostly smooth and make good connection. <input type="checkbox"/></p> <p>17. Little Support was needed from the teacher. <input type="checkbox"/></p>	<p>18. The two halves of the grey board are symmetrical, creating perfect halves of the shell. All edges are neat. <input type="checkbox"/></p> <p>19. The aperture measure 30mm in width and 20mm in height. <input type="checkbox"/></p> <p>20. The solder joints are neat and accurate with the minimum amount of solder used to secure the connections. The components are held securely and are tested for continuity. <input type="checkbox"/></p> <p>21. No Support was needed from the teacher – working independently. Students able to support others and demonstrate skills as required. <input type="checkbox"/></p>
<p><b>Making using tools and equipment:</b> Assembled Product - Overall Quality</p>	<p>22. The two halves of the cell tester are roughly symmetrical and are sellotaped together. <input type="checkbox"/></p> <p>23. The circuit has been tested with a continuity meter and works. <input type="checkbox"/></p> <p>24. The Nichrome wire heats up and alters the colour of the Thermochromic paper. The whole 'M' shape might not be seen in the window opening. <input type="checkbox"/></p> <p>25. Lots of support was needed from the teacher to achieve the task. <input type="checkbox"/></p>	<p>26. The two halves of the cell tester are almost symmetrical and are sellotaped together neatly. <input type="checkbox"/></p> <p>27. The circuit has been tested with a continuity meter regularly throughout the build and works. <input type="checkbox"/></p> <p>28. The circuit is positioned in the window opening so that the 'M' shape can be partially seen clearly when testing batteries. <input type="checkbox"/></p> <p>29. Little Support was needed from the teacher. <input type="checkbox"/></p>	<p>30. The two of the cell tester are perfectly symmetrical and fit together with no overlaps. The halves are sellotaped together with no gaps between the surface edges. This has been completed independently. <input type="checkbox"/></p> <p>31. The circuit has been tested regularly and accurately throughout the making process and the circuit works to test for voltage in 1.5V batteries. <input type="checkbox"/></p> <p>32. The circuit is positioned in the window opening and the 'M' shape shows clearly when testing batteries. <input type="checkbox"/></p> <p>33. No Support was needed from the teacher – working independently and able to support others and demonstrate skills as required. <input type="checkbox"/></p>
<p><b>Evaluating the process:</b> Making judgments about outcomes</p>	<p>34. Support and guidance was required to complete the evaluation- prompts and reminders were required about processes and skills used were needed. <input type="checkbox"/></p>	<p>35. Little support and guidance was required to complete the evaluation- students were able to recall most processes and skills that were used in the task. <input type="checkbox"/></p>	<p>36. No support and guidance was required to complete the evaluation- students were able to recall and describe in detail all processes and skills that were used in the task. <input type="checkbox"/></p>