The IET

DIY Faraday Challenge Day

Coding the Future
Teacher Extras
DIY Faraday Challenge Day

Presented to

Signed by

Date

theiet.org/faraday
Account sheet

Team

You will need to keep an accurate record of all the purchases your team makes.

<table>
<thead>
<tr>
<th>Materials/resources purchased</th>
<th>Quantity</th>
<th>Cost</th>
<th>Faradays remaining</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Total Faradays remaining:
Student Team Registration Form

Team……………………………………………………

Faraday Challenge Date:……………………………………………..

Your School Name:................................................................

Your Teacher’s Name:............................................................

Team Member Names (please print clearly):

<table>
<thead>
<tr>
<th>First name</th>
<th>Surname</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
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<tr>
<td>5</td>
<td></td>
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<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Faradays spent/refunded at each visit to the shop</td>
<td>Team 1</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
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<td>7</td>
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<td>8</td>
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<tr>
<td>9</td>
<td></td>
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<tr>
<td>10</td>
<td></td>
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<tr>
<td><strong>TOTAL FARADAYS SPENT</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Full list of materials to purchase from the shop

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crocodile leads</td>
<td>Lead with crocodile clips at each end</td>
<td>Each</td>
<td>5 Faradays</td>
</tr>
<tr>
<td>Piezo buzzer</td>
<td>Connect to the rings in a circuit to give a sound output</td>
<td>Each</td>
<td>8 Faradays</td>
</tr>
<tr>
<td>LEDs – green + resistor</td>
<td>LED which can be connected to the rings in circuit – green. Must be used with a resistor.</td>
<td>Each</td>
<td>10 Faradays</td>
</tr>
<tr>
<td>LEDs – amber + resistor</td>
<td>LED which can be connected to the rings in a circuit – amber. Must be used with a resistor.</td>
<td>Each</td>
<td>10 Faradays</td>
</tr>
<tr>
<td>Thermistor + resistor</td>
<td>Component that detects the ambient temperature and changes resistance to allow a current to flow through a circuit. Must be used with a resistor.</td>
<td>Each</td>
<td>15 Faradays</td>
</tr>
<tr>
<td>Light Dependent Resistor + resistor</td>
<td>Component that detects the light level and changes resistance to allow a current to flow through a circuit when it becomes dark. Must be used with a resistor.</td>
<td>Each</td>
<td>15 Faradays</td>
</tr>
<tr>
<td>Resistor</td>
<td>Component used in a circuit to ensure that the correct current is supplied to other electrical components in the circuit.</td>
<td>Each</td>
<td>Comes free with LED, thermistor and LDR</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>Component used to adjust the sensitivity of a sensor in an electrical circuit.</td>
<td>Each</td>
<td>10 Faradays</td>
</tr>
<tr>
<td>Polyfoam</td>
<td>A5 foam sheet – assorted colours</td>
<td>Each</td>
<td>10 Faradays</td>
</tr>
<tr>
<td>Coloured card</td>
<td>A4 sheet of card – assorted colours</td>
<td>Each</td>
<td>5 Faradays</td>
</tr>
<tr>
<td>Tin foil</td>
<td>A conductive material</td>
<td>30cm strip</td>
<td>5 Faradays</td>
</tr>
<tr>
<td>Masking tape</td>
<td>Can be used to secure parts in your design - do not stick anything to your BBC micro:bit or it may not work properly.</td>
<td>30cm piece</td>
<td>5 Faradays</td>
</tr>
<tr>
<td>Sticky tape</td>
<td>Can be used to secure parts in your design - do not stick anything to your BBC micro:bit or it may not work properly.</td>
<td>30cm piece</td>
<td>5 Faradays</td>
</tr>
</tbody>
</table>
not stick anything to your BBC micro:bit or it may not work properly.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectangular sponges</td>
<td>Can be used to make pressure switches or enhance your design.</td>
<td>Each</td>
</tr>
<tr>
<td>Cardboard tube</td>
<td>Can be used to reduce or focus light levels or enhance your design</td>
<td>Each</td>
</tr>
<tr>
<td>Cable ties</td>
<td>Can be used to hold your BBC micro:bit onto a background</td>
<td>Each</td>
</tr>
<tr>
<td>Scissors</td>
<td>Used for soft materials only – do not use to cut wires or any part of your BBC micro:bit.</td>
<td>Each</td>
</tr>
<tr>
<td>Stapler</td>
<td>Used to staple soft materials only – do not use to staple anything to your BBC micro:bit.</td>
<td>Each</td>
</tr>
<tr>
<td>Hole punch</td>
<td>Used to make small holes in soft materials</td>
<td>Each</td>
</tr>
<tr>
<td>Rulers</td>
<td>Used to measure any part of your product or additional items</td>
<td>Each</td>
</tr>
<tr>
<td>String</td>
<td>Can be used as part of your product design</td>
<td>30cm piece</td>
</tr>
<tr>
<td>Calculators</td>
<td>Can be used to calculate resistance and to help with accounting</td>
<td>Each</td>
</tr>
<tr>
<td>Codes to buy</td>
<td>Complete codes which your team can buy to copy or adapt – ask the shop keeper for information on the codes available for purchase</td>
<td>Each</td>
</tr>
</tbody>
</table>

**AVAILABLE ON THE LAPTOP:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding support sheets</td>
<td>PDFs of support sheets and PowerPoints under 'New to Coding'</td>
<td>FREE</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>Basic software for creating a presentation</td>
<td>FREE</td>
</tr>
</tbody>
</table>

**AVAILABLE ON THE JUDGES/PRESENTATION TABLE:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding support sheets</td>
<td>Hard copies (laminated) of ‘How to …..’ support sheets</td>
<td>FREE</td>
</tr>
</tbody>
</table>

The Coding Support sheets can be provided to help students get started on their products. We recommend you print 3 or 4 of each so that students have access to these when needed. You may also wish to put an electronic copy of the document on the laptops/computers the students are working on.
Piezo buzzer
F8.0

Faraday Challenge Days

theiet.org/faraday

LEDs - green
F10.0
Hole punch

Ruler

Faraday Challenge Days

theiet.org/faraday
Faraday Challenge Days

Faraday Reserve Note

One Faraday

Michael Faraday
Faraday Challenge Days

Faraday Reserve Note

Five Faradays

Michael Faraday
Faraday Reserve Note

Ten Faradays

Michael Faraday
Faraday Challenge Days

Faraday Reserve Note

Twenty Faraday Days

Michael Faraday