# Level 1

## Level 1, Unit 1 - The Understanding of Rocket Design and Manufacture (3 credits)

<table>
<thead>
<tr>
<th>1. 1. Understanding the environment rockets work in and the materials used</th>
<th>2. 2. Testing and making a variety of rockets and exploring their construction</th>
<th>3. 3. Investigating uses for rockets and materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 I can list a number of materials used for rocket manufacture</td>
<td>2.1 I can experiment with materials and make notes for manufacture</td>
<td>3.1 I can list the different ways rockets are currently used</td>
</tr>
<tr>
<td>1.2 I can explain some of the material properties</td>
<td>2.2 I can test the aspects of materials for rocket making</td>
<td>3.2 I can comment on future uses for rocket technology</td>
</tr>
<tr>
<td>1.3 I can list the environmental issues that inform rocket manufacture</td>
<td>2.3 I can explain the properties of materials and relate these to the rocket’s possible success</td>
<td>3.3 I can explain new manufacturing tools and techniques used for rocket production</td>
</tr>
<tr>
<td>1.4 I can explain how the environment affects design decisions</td>
<td>2.4 I can test built rockets on simple flight tasks</td>
<td>3.4 I can explain the most suitable approaches to manufacturing I have discovered</td>
</tr>
<tr>
<td>1.5 I can explain my findings and thoughts to an audience for feedback</td>
<td>2.5 I can summarise my findings in a clear way</td>
<td>3.5 I can predict some developments in rocket manufacturing in the coming years</td>
</tr>
</tbody>
</table>
## Level 1, Unit 2 - The Understanding of Microsatellite Design and Manufacture (3 credits)

1. 1. Understanding why microsatellites are made and the manufacturing guidelines
   - 1.1 I can list some of the current uses of microsatellites [20]
   - 1.2 I can explain some of the dangers of microsatellites [23]
   - 1.3 I can list the advances in manufacturing that have helped microsatellite production [26]

2. 2. Designing, creating and testing a microsatellite
   - 2.1 I can create some rough sketched designs of a new microsatellite [21]
   - 2.2 I can label my designs for clarity and explain their purpose [24]
   - 2.3 I can turn my sketches into digital images [27]

3. 3. Explaining how and why my microsatellite will be used
   - 3.1 I can list the main uses of microsatellites [22]
   - 3.2 I can explain the data microsatellites can capture [25]
   - 3.3 I can explain, with examples, the features of my microsatellite [28]
   - 3.4 I can list the uses for my design [31]
   - 3.5 I can explain to a potential client the purpose of my microsatellite design [34]

## Level 1, Unit 3 - The Exploration of Robotics and Artificial Intelligence (3 credits)

1. 1. Understanding the different uses for robots and AI
   - 1.1 I can list the different types of robot used by sector [36]
   - 1.2 I can list the way AI is used [39]

2. 2. Testing different robot devices and AI systems
   - 2.1 I can explain with an industry example how robots are controlled [37]
   - 2.2 I can investigate some [40]

3. 3. Exploring the future uses of robotics and AI and the impact on my world
   - 3.1 I can make a prediction about the uses of robots in the future [38]
   - 3.2 I can make a
| Used in different sectors of the materials used in robot manufacture prediction about the use of AI in the future |
|---|---|---|
| **1.3 I can explain the ways robots are controlled** | **2.3 I can practice controlling a robot** | **3.3 I can explain how robots and AI might affect my future** |
| **1.4 I can comment on some of the issues for society posed by robots and AI** | **2.4 I can list how AI is used in key industries** | **3.4 I can discuss ways that robots and AI will help the world** |
| **1.5 I can explain my concerns about robots and AI** | **2.5 I can test the AI functions of a common system** | **3.5 I can discuss the ways robots and AI might harm the world** |

### Level 1, Unit 4 - Working with and Understanding Unmanned Vehicles (3 credits)

#### 1. 1. Understanding the range of unmanned vehicles

- **1.1 I can list a variety of unmanned vehicles**
- **1.2 I can list some of the uses for unmanned vehicles**
- **1.3 I can explain some of the uses of unmanned vehicles**
- **1.4 I can explain some of the limitations of unmanned vehicles**
- **1.5 I can explain some future uses of unmanned vehicles**

#### 2. 2. Testing and evaluating unmanned vehicles for particular uses

- **2.1 I can list materials used in unmanned vehicles**
- **2.2 I can explain the choice of materials used in unmanned vehicles**
- **2.3 I can test the basic functions of an unmanned vehicle**
- **2.4 I can explain the limitations of unmanned vehicles I have found**
- **2.5 I can explain the impact of unmanned vehicles on general manufacturing processes**

#### 3. 3. Exploring the use of unmanned vehicles and their future uses

- **3.1 I can comment on the need for unmanned vehicles**
- **3.2 I can explain the issues surrounding unmanned vehicles**
- **3.3 I can list the benefits of unmanned vehicles**
- **3.4 I can explain the dangers of unmanned vehicles**
- **3.5 I can present my findings on the future of unmanned vehicles**