**Unit / Project Overview**

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| **Curriculum Area**:  Mathematics, electronics, robotics, pneumatics, fabrication, coding & CNC  **Skills:**  Problem-solving, independent study, innovative thinking, group-collaboration.  Learning Outcomes  For Y12: Meet unit 6 AQA Mechatronics criteria.  For Y10: Rudimentary understanding of methodology, and processes, for industry-based design & development. An understanding, and application, of the various academic knowledge required for the design & creation of a new device. | | **Subject / Course:** Engineering project  **Teachers:** Mike Reid & David Myers  **Class/Year group: 10x-Pr3**  **Number of Students: 16**  **Start date:** 16/12/2019  **Length of project:** Until April 2020  **Additional Info** |
| Driving Question: Improve the efficiency of the robot gripping mechanism to suit the needs of Husqvarna in packing products. By redesigning and constructing, a new gripping mechanism, more items can be packed into an industry-standard sized box. | | |
| How can the learning from the employer visit be applied to the project idea?  The company has loaned the current gripping mechanism.  Assistance & resources from the employer have been specified.  CAD files have been donated.  Opportunities to visit the company/ meet the employers outside of the UTC have been discussed/ suggested as a trip. | | |
| Which Stakeholders could help deliver the project?  Husqvarna | Foreseen Challenges / solutions?  Costs/ parts/ creating a new design. | |
| Draft activity timeline (specific delivery times / flexibility)  January – Introduce problem & create structures for solving it.  February – Research, prototyping & development.  March – Agree & order parts for the final design/ construct.  April – Final building, testing & presentation of the new product. | | |
| Products / outputs?  Working robot gripping mechanism, designs & product. | | How will you celebrate, showcase learning with wider stakeholders?  Project fair event in April |
| How will the work be assessed? How will you measure the impact, what are the success criteria?  Soft & hard development of skills/ ongoing assessment. E.g. Y10 presentational skills assessed at several intervals according to Cambridge presentation criteria. Y12 assessed according to unit 6 AQA Mechatronics criteria. | | Differentiation  Students will design, select & allocate dynamic roles within the project. |
|  Is the idea clear to communicate with potential partners?   Has a timeline been drafted?   Have outcomes and evaluation process been agreed?   Have key contacts agreed a communication strategy? | | Key Contact details: |