# Portfolio – Notebook Template

|  |
| --- |
| **Introduction: Situation & Challenge:**  Describe the challenge in your own words. |

|  |
| --- |
| **Team members:**  Who are the team members and what are their responsibilities in the production of the portfolio and the prototype device? |

|  |
| --- |
| **Idea 1:**  Draw a sketch of your team’s first design concept. |

|  |
| --- |
| **Idea 2:**  Draw a sketch of your team’s second design concept. |

|  |
| --- |
| **Idea 3:**  Draw a sketch of your team’s third design concept. |

|  |
| --- |
| **Materials used:**  List the materials (including dimensions, if appropriate) used to build your prototype. |

|  |
| --- |
| **Principles of Structural Strength and Stability:**  Describe how your device incorporates structural principles.  ***Hint:*** *Use terms such as: force, load, compression, tension; symmetry, triangulation; center of gravity, balance, beams, struts, gussets, and aesthetics.* |

|  |
| --- |
| **Rationale used to decide on the type of fluid power used and where to place the piston-syringes:**  Describe why the piston-syringes are located where they are in your device.  ***Hint:*** *Use terms such as pneumatic, hydraulic, input, output; density, particle theory, pressure, Pascal’s Law; lever, pivot, friction; work done, and mechanical advantage.* |
| **Proposed solution:**  Draw an orthographic drawing of your chosen solution that shows the main structural components. |

|  |
| --- |
| **Proposed solution:**  Draw an isometric drawing of the portion of your prototype device used to grab the object. |

|  |
| --- |
| **Alternative Materials:**  List possible alternative materials that would have been useful and provide the reasons why they would have been useful. |

|  |
| --- |
| **Evaluation of Prototype:**  Describe what worked and what did not work well. Also, describe what your team learned that will help the team produce a fully functioning device on Challenge Day. |