# Portfolio Notebook Template

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

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

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

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

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

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| Materials used:  List, with dimensions if appropriate, the materials used to build your prototype: |

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| 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* |

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| Explanation of the placement of fluid systems:  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 principle, lever, pivot, friction, work done and mechanical advantage* |

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| Proposed solution:  Draw an orthographic drawing of your chosen solution showing main structural components: |

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

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| Alternative Materials:  Provide a list of possible alternative materials that would have been useful with reasons why they would have been so: |

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| Evaluation of Prototype:  What worked and didn’t work well and what did your team learn that will help your team produce a fully functioning device at the Challenge: |

NOTES: