

Product Design Process NOTE: Steps are iterative	Product Design Process Description (Adapted from <i>We Build It Better Curriculum: Flight Works Alabama</i>) Note: Bullets may be addressed in any needed order.
Understand the problem	<ul style="list-style-type: none"> • Identify a need or desire for a product. • Who needs or wants this?
Research the problem	<ul style="list-style-type: none"> • Gather information about the need and ideas that can help you meet the need. • What other products already address this need? • Who do you want this product to target?
Identify and list the criteria and constraints	<ul style="list-style-type: none"> • What requirements (criteria) and limitations (constraints) does your product need to meet?
Design the product	<ul style="list-style-type: none"> • Imagine a variety of creative designs for the product. • Evaluate your possible designs and decide which one best suits the requirements of this product. • Prepare a detailed sketch of the product design you choose. • Construct a working prototype of that product.
Test the product	<ul style="list-style-type: none"> • Assess the performance of your prototype using the criteria and constraints, along with other things you want to consider. • Redesign and retest the product until the prototype meets specs.
Build and manufacture	<ul style="list-style-type: none"> • Prepare a technical drawing of the successful prototype drawn to scale. • Decide what materials you will use and the costs involved. • Manufacture the real product in needed quantities for the project.
Ship the product	<ul style="list-style-type: none"> • Decide how you will package the product. • Confirm market locations. Where will you send the product? • Decide the best method of delivery.
Market the product (takes place at many places during the PDP)	<ul style="list-style-type: none"> • Promote the product to targeted groups. • Determine the price you will charge for the product. Include manufacturing and materials costs, shipping costs, and a modest profit.
Analyze success/failure	<ul style="list-style-type: none"> • Evaluate whether your product accomplished its purpose by using the product criteria, customer satisfaction surveys, interviews, and other data collection strategies. • Use the data to optimize your product for subsequent productions.
Determine the environmental impact	<ul style="list-style-type: none"> • Determine how your product can be reused, recycled or disposed of when no longer in use. • Determine potential impacts on consumer health and well-being.