PLTW | Launch

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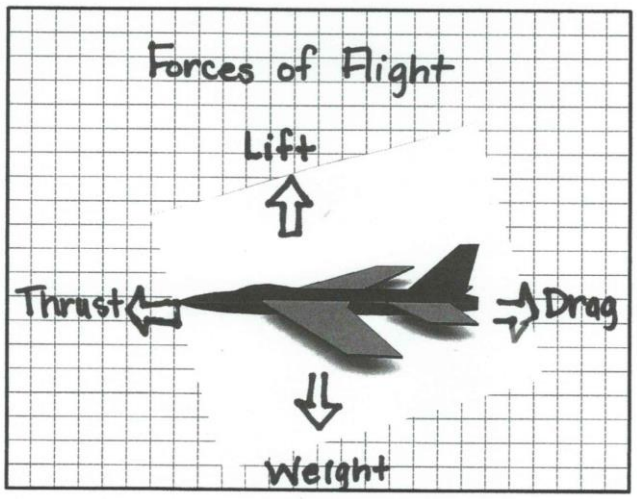
Using Your Launch Log

Engineers and scientists keep a record of their work as they design solutions and construct explanations. The log includes sketches with detailed descriptions and notes they take as they work toward a solution. As you work on the activities, project, and problem in this module you will use this Launch Log to keep of record of your work.

You will create labeled sketches or include copies of pictures you may take, take notes on new ideas, answer questions about your work, and also reflect on your progress. The example below shows how one student used the Launch Log to record their new learning about the forces of flight.

Good luck as you work toward a solution to the problem using the knowledge and skills that you have developed and recorded in your Launch Log.



To take off, lift has to be greater than weight and thrust has to be greater than drag. The forces are unbalanced during take-off. When the aircraft is gliding, the pairs of forces are balanced.

PLTW Launch – Grades 3-5 Launch Log © 2014 Project Lead The Way, Inc.
Page 9

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Table of Contents

Page	Date	Title

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Solving the Design Problem

Ask

What is the need or want that we are trying to fulfill?

What will make the design solution successful?

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What constraints will impact the design?

_____

_____

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Self-Reflection and Teacher Feedback: Ask

Skill	Novice	Apprentice	Practitioner
Identify the need or want	I can't explain how the design problem addresses a need or want yet.	With some help, I can explain how the design problem addresses a need or want.	On my own, I can explain how the design problem addresses a need or want.
Explain successful outcome	I can't describe how the criteria and constraints will lead to a successful outcome yet.	With some help, I can explain how the criteria and constraints will lead to a successful outcome.	On my own, I can explain how the criteria and constraints will lead to a successful outcome.
Know constraints	I can't list any constraints yet.	With help, I can list 2-3 constraints.	On my own, I can list 2-3 constraints.
Teacher Comments:			

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Explore

Describe how others have tried to solve this problem.

Brainstorm ideas to generate solutions. Write about your ideas for a solution below. Sketch and label your ideas on the grids.

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Self-Reflection and Teacher Feedback: Explore

Skill	Novice	Apprentice	Practitioner
Research ways to solve problem	I can't research or describe how others have tried to solve this problem yet.	I can research **or** describe how others have tried to solve this problem.	I can use research **and** describe how others have tried to solve this problem.
Brainstorm ideas.	I can't brainstorm 2-3 ideas yet.	I can brainstorm 2-3 ideas.	I can brainstorm 4 or more ideas.

When I think about completing the **Explore** step, I _____

need a lot of help. need some help. don't need any help.

Teacher Comments :

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Model

Use the **Decision Matrix** to compare multiple solutions to see how well each meets the criteria and constraints. Use the decision matrix below or cut and paste your own decision matrix over it. Use the scale provided by your teacher.

				Total

Include a sketch or an image of your model below.

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Self-Reflection and Teacher Feedback: Model

Skill	Novice	Apprentice	Practitioner
Using a Decision Matrix	I can't compare multiple solutions to see how well each one meets the criteria and constraints yet.	I can compare multiple solutions to see how well each one meets the criteria and constraints without using a decision matrix.	I can compare multiple solutions to see how well each one meets the criteria and constraints using a decision matrix.
Sketch, model and write	I can't sketch, model, or write about the best solution yet.	I can sketch, model, **or** write about the best solution.	I can sketch, model, **and** write about the best solution.

When I think about completing the **Model** step, I _____

need a lot of help. need some help. don't need any help.

Teacher Comments :

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Evaluate

Describe how you will evaluate your design using a **controlled test**.

_____

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Conduct and document a **controlled test**.

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Use data to identify parts of your design solution that can be improved.

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_____

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_____

Self-Reflection and Teacher Feedback: Evaluate

Skill	Novice	Apprentice	Practitioner
Plan a controlled test.	I can't plan a controlled test yet.	I can plan or explain a controlled test.	I can plan and explain a controlled test.
Conduct and document a controlled test.	I can't conduct or document a controlled test yet.	I can conduct or document a controlled test.	I can conduct and document a controlled test.
Identify how to improve.	I can't identify parts of my design that can be improved yet.	I can identify parts of my design that can be improved without using data.	I can identify parts of my design that can be improved using data.
When I think about completing the **Evaluate** step, I _____ need a lot of help. need some help. don't need any help.			
	Teacher Comments :		

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Explain

Summarize and share the results of your design process.

Provide suggestions for improvement using data from your controlled test.

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Self-Reflection and Teacher Feedback: Explain

Skill	Novice	Apprentice	Practitioner
Summarize and show results	I can't summarize or share the results of the design process yet.	I can summarize **or** share the results of the design process	I can summarize **and** share the results of the design process
Suggest improvements using data	I can't make suggestions for improvements yet.	I can include suggestions for improvement without using data.	I can include suggestions for improvement using data.

When I think about completing the Explain step, I _____

need a lot of help. need some help. don't need any help.

Teacher Comments:

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