



TeachEngineering

STEM Curriculum for K-12

Phase 3: Design to Deliver: Optimizing Craft Production for Efficiency, Profit, and Purpose



Subscribe to our newsletter at TeachEngineering.org to stay up-to-date on everything TE!

Brought to you by



Lesson Objective

Students will evaluate and reflect on the performance of the initial and revised systems and propose potential next steps.

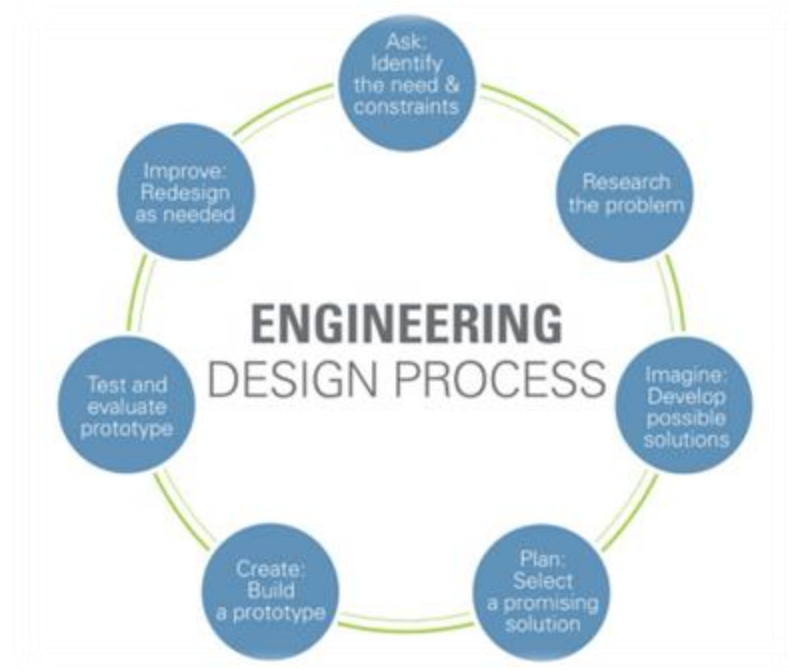
Let's Analyze Your Systems Data!

In the previous lesson, your team evaluated the efficiency and effectiveness of your initial and revised production system.

- Your team will use a spreadsheet to evaluate your production system, identifying areas for improvement. Assess the efficiency and effectiveness of the revised system by analyzing the number of cars produced and the overall profit generated.
- Each team will organize their findings into a digital portfolio, using a rubric for guidance, and present their portfolio to the class.



Engineering Design Process



Instructions



You have 30 minutes to work with your team on the Manufacturing Performance Review using the Craft Production Data Analysis Spreadsheet.

Use the handout and spreadsheet to help you complete the review.



Raw Material Inventory				Assembly 1	Assembly 2
	Part Name	# per Standard Kit	Weight per Part	Cost per Part	
Brick	B1x1	100	0.01	\$0.01	4
	B1x2	100	0.01	\$0.11	4
	B1x3	40	1.15	\$0.12	12
	B1x4	40	1.00	\$0.11	
	B1x7	24	1.15	\$0.14	
Plate	P2x2	50	0.00	\$0.11	
	P2x5	20	1.70	\$0.19	4
	P2x8	30	3.25	\$0.21	4
	P2x10	15	2.80	\$0.23	
	P2x15	20	3.25	\$0.43	
	P2x18	7	5.40	\$0.54	2
Slope	S1x2	50	0.01	\$0.11	
	S1x2 (upper)	50	0.70	\$0.11	
	S1x2	40	1.15	\$0.14	
Tire	Thick (Tire 3)	4	5.40	\$0.61	4
	Thick Soft (Tire 4)	28	3.00	\$0.29	
	Thick Hard (Tire 1)	28	1.20	\$0.29	4
	Thick (Tire 2)	28	0.01	\$0.11	
Axe	A1x1	4	1.40	\$0.29	4
	A1x1 One Sided	68	0.01	\$0.19	4
	A1x1 Two Sided	14	0.70	\$0.11	
Rim	Large (Rim 3)		1.15	\$0.20	4
	Medium (Rim 2)		0.7	\$0.21	4
	Small (Rim 1)		0.25	\$0.20	
Steering Wheel		20	0.00	\$0.29	4
Wind Shield	W1x1	20	2.10	\$0.38	4
	W1x4	3	4.00	\$0.70	4
Completed (place an x if delivered to customer)					
Items				200	10

Company's Digital Portfolio

You've worked hard designing and improving your vehicle prototypes and production lines.

Now, use the digital portfolio to showcase your skills, reflect on your learning, and demonstrate how engineering helps solve real-world challenges.

Review the [Project Portfolio RUBRIC](#).
Get Started!!

Team Presentation

You have 5 minutes to present your Digital Portfolio.



Complete the Student Survey.

