Grade: Fourth Grade
Course: STEM
Year: 2023-2024
Credits:

Essential Questions: Can you use the Engineering Design Process to solve problems in a team?
Big Idea: Learn how to work together (collaborate).
Big Idea: Learn the Engineering Design Process.
Big Idea: Use the EDP to complete a challenge.

Vocabulary:

Suggested Pacing	Content Standards	Learning and Performance Expectations What must students know and be able to do?	Connection to	Connection to **Social Emotional Standards** and/or **Social Justice Standards**	Assessment of Learning Options How will we know if they learned this skill?	Resources Options
Quarter 1	Introduction to STEM/ Team Building/ Engineering Design Process					
	Ohio Technology Standards: Design & Technology Topic 2: Identify a problem and use an engineering design process to solve the problem. **3-5.DT.2.a.** Critique needs and opportunities for designing solutions. **3-5.DT.2.b**. Plan and implement a design	Describe a challenge/ problem and brainstorm multiple, reasonable solutions.	Collaboration Communication Critical/Creative Thinking Growth Mindset	**Self-Awareness** A3. 2.b Seek help and acknowledge constructive feedback from others that addresses challenges and builds on strengths A4. 2.b Demonstrate confidence in the ability to complete a range of tasks and address challenges while expressing positive attitudes towards self A4. 3.b Identify ways to respectfully advocate for academic and personal needs	Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		Develop a plan to solve a problem providing a detailed explanations of materials and design.	Collaboration Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, discussions, EDP plans, student projects and models	

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	process: identify a problem, think about ways to solve the problem, develop possible solutions, test and evaluate solution(s), present a possible solution, and redesign to improve the solution. **3-5.DT.2.c.** Generate, develop and communicate design ideas and decisions using appropriate terms and graphical representations.	Create following the developed plan.	Collaboration Critical/Creative Thinking Empathy Growth Mindset	**Self Management** B3. 1.b Identify strategies for persevering through challenges and setbacks B3. 2.b Identify the cause of a challenge or setback and with assistance, develop a plan of action **Social Awareness** C1. 2.b Identify and acknowledge others' viewpoints, knowing that both sides do not have to agree but can still be respectful	Observations, EDP plans, student projects and models	
		Evaluate the design to determine if it meets the given criteria, identifying potential improvements.	Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, EDP plans, student projects and models, student reflections	
Quarter 2		Engineering Design Process/LEGO Challenges				
		Describe a challenge/ problem and brainstorm multiple, reasonable solutions.	Collaboration Communication Critical/Creative Thinking Growth Mindset	**Self-Awareness** A3. 2.b Seek help and acknowledge constructive feedback from others that addresses challenges and builds on strengths A4. 2.b Demonstrate confidence in the ability to complete a range of tasks and address challenges while expressing positive attitudes towards self A4. 3.b Identify ways to respectfully advocate for academic and personal needs **Self Management** B3. 1.b Identify strategies for persevering through	Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		Develop a plan to solve a problem providing a detailed explanations of materials and design.	Collaboration Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, discussions, EDP plans, student projects and models	
		Create following the developed plan.	Collaboration Critical/Creative Thinking		Observations, EDP plans, student projects and models	

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			Empathy Growth Mindset	challenges and setbacks B3. 2.b Identify the cause of a challenge or setback and with assistance, develop a plan of action **Social Awareness** C1. 2.b Identify and acknowledge others' viewpoints, knowing that both sides do not have to agree but can still be respectful		
		Evaluate the design to determine if it meets the given criteria, identifying potential improvements.	Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, EDP plans, student projects and models, student reflections	
Quarter 3		Coding/ Robotics & 3D Design				
		Describe a challenge/ problem and brainstorm multiple, reasonable solutions.	Collaboration Communication Critical/Creative Thinking Growth Mindset	**Self-Awareness** A3. 2.b Seek help and acknowledge constructive feedback from others that addresses challenges and builds on strengths A4. 2.b Demonstrate confidence in the ability to complete a range of tasks and address challenges while expressing positive attitudes towards self A4. 3.b Identify ways to respectfully advocate for academic and personal needs **Self Management** B3. 1.b Identify strategies for persevering through challenges and setbacks B3. 2.b Identify the cause of	Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		Develop a plan to solve a problem providing a detailed explanations of materials and design.	Collaboration Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, discussions, EDP plans, student projects and models	
		Create following the developed plan.	Collaboration Critical/Creative Thinking Empathy Growth Mindset		Observations, EDP plans, student projects and models	

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		Evaluate the design to determine if it meets the given criteria, identifying potential improvements.	Communication Critical/Creative Thinking Growth Mindset Global Awareness	a challenge or setback and with assistance, develop a plan of action **Social Awareness** C1. 2.b Identify and acknowledge others' viewpoints, knowing that both sides do not have to agree but can still be respectful	Observations, EDP plans, student projects and models, student reflections	
Quarter 4		STEM Career Explorations & Projects				
		Describe a challenge/ problem and brainstorm multiple, reasonable solutions.	Collaboration Communication Critical/Creative Thinking Growth Mindset	**Self-Awareness** A3. 2.b Seek help and acknowledge constructive feedback from others that addresses challenges and builds on strengths A4. 2.b Demonstrate confidence in the ability to complete a range of tasks and address challenges while expressing positive attitudes towards self A4. 3.b Identify ways to respectfully advocate for academic and personal needs **Self Management** B3. 1.b Identify strategies for persevering through challenges and setbacks B3. 2.b Identify the cause of a challenge or setback and with assistance, develop a plan of action	Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		Develop a plan to solve a problem providing a detailed explanations of materials and design.	Collaboration Communication Critical/Creative Thinking Growth Mindset Global Awareness		Observations, discussions, EDP plans, student projects and models	
		Create following the developed plan.	Collaboration Critical/Creative Thinking Empathy Growth Mindset		Observations, EDP plans, student projects and models	
		Evaluate the design to determine if it meets	Communication Critical/Creative		Observations, EDP plans, student projects	

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		the given criteria, identifying potential improvements.	Thinking Growth Mindset Global Awareness	**Social Awareness** C1. 2.b Identify and acknowledge others' viewpoints, knowing that both sides do not have to agree but can still be respectful	and models, student reflections	