Grade: Kindergarten

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. K-2.DT.2.a. Observe and describe details of an object's design.	1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem. 4. Gather information about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation A4. 2.a Demonstrate confidence in the ability to complete simple tasks and	Observations, discussions, student reflections	Use this link to access pacing and resources.
		1. Make a sketch or	Collaboration		Observations, EDP	Use this link to

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	K-2.DT.2.b. Demonstrate the ability to follow a simple design process: identify a problem, think about ways to solve the problem, develop possible solutions, and share and evaluate solutions with others. K-2.DT.2.c. Explain that a design process is a plan to find solutions to problems. K-2.DT.2.d. Demonstrate that there are many possible solutions to a design problem. K-2.DT.2.e. Communicate design plans and solutions using drawings and descriptive language.	drawing of an object that will solve a problem. 2. Label the drawing or sketch to show how it will work. 3. Make a model of an object that will solve a problem. 4. Share how the object created will solve a given problem.	Communication Growth mindset Critical & Creative Thinking	challenges independently, while expressing positive attitudes towards self Self Management B3. 2.a Explain how practice improves performance of a skill and can help in overcoming a challenge or setback Social Awareness C1. 2.a Identify words and actions that may support or hurt the feelings of others	plans, student projects and models, student reflections	access pacing and resources.
		1. Test objects that were designed to solve the same problem. 2. Collect data on how the objects performed. 3. Compare the strengths and weaknesses of the objects.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, data collection, discussions, EDP plans, student reflections	Use this link to access pacing and resources.
Quarter 2		Engineering Design Process/LEGO Challenges				
		1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation	Observations, discussions, student reflections	Use this link to access pacing and resources.

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		4. Gather information about a simple problem.				
		1. Make a sketch or drawing of an object that will solve a problem. 2. Label the drawing or sketch to show how it will work. 3. Make a model of an object that will solve a problem. 4. Share how the object created will solve a given problem.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		1. Test objects that were designed to solve the same problem. 2. Collect data on how the objects performed. 3. Compare the strengths and weaknesses of the objects.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, data collection, discussions, EDP plans, student reflections	Use this link to access pacing and resources.
		1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a	Observations, discussions, student reflections	Use this link to access pacing and resources.

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		3. Make observations about a simple problem. 4. Gather information about a simple problem.		task, skill or situation		
Quarter 3		Coding/ Robotics				
		1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem. 4. Gather information about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation	Observations, discussions, student reflections	Use this link to access pacing and resources.
		1. Make a sketch or drawing of an object that will solve a problem. 2. Label the drawing or sketch to show how it will work. 3. Make a model of an object that will solve a	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.

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		problem. 4. Share how the object created will solve a given problem.				
		1. Test objects that were designed to solve the same problem. 2. Collect data on how the objects performed. 3. Compare the strengths and weaknesses of the objects.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, data collection, discussions, EDP plans, student reflections	Use this link to access pacing and resources.
		1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem. 4. Gather information about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation	Observations, discussions, student reflections	Use this link to access pacing and resources.
Quarter 4		STEM Career Explorations & Partner/Team Projects				
		1. Identify a simple problem that can be solved by developing a	Collaboration Communication Growth mindset	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents	Observations, discussions, student reflections	Use this link to access pacing and resources.

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		new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem. 4. Gather information about a simple problem.	Global Citizenship Empathy Critical & Creative Thinking	A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation		
		1. Make a sketch or drawing of an object that will solve a problem. 2. Label the drawing or sketch to show how it will work. 3. Make a model of an object that will solve a problem. 4. Share how the object created will solve a given problem.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, EDP plans, student projects and models, student reflections	Use this link to access pacing and resources.
		1. Test objects that were designed to solve the same problem. 2. Collect data on how the objects performed. 3. Compare the strengths and weaknesses of the objects.	Collaboration Communication Growth mindset Critical & Creative Thinking		Observations, data collection, discussions, EDP plans, student reflections	Use this link to access pacing and resources.

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		1. Identify a simple problem that can be solved by developing a new tool or improving a current tool. 2. Ask questions about a simple problem. 3. Make observations about a simple problem. 4. Gather information about a simple problem.	Collaboration Communication Growth mindset Global Citizenship Empathy Critical & Creative Thinking	Self Awareness: A2. 2.a Explore opportunities to develop skills and talents A3. 2.a Seek help when faced with challenges or when frustrated with a task, skill or situation	Observations, discussions, student reflections	Use this link to access pacing and resources.