

Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of <i>FIRST</i> ® LEGO® League either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Engineering and Technology - Middle Level			FLL
Domain 1 General Engineering and Technology Concepts			
Standard 1	Students will examine how engineering and technology helps improve, manage, and control natural and engineered environments.		
	ETE - 1.1	Illustrate the purpose of engineering and technology in society.	-
	ETE - 1.2	Identify how engineering and technology impacts individuals, society, and the environment.	-
	ETE - 1.3	Apply the universal systems model when studying areas of engineering and technology.	-
	ETE - 1.4	Demonstrate safe practices and procedures with tools and equipment.	-
Standard 2	Students will integrate engineering and technology into academic fields, including the STEM disciplines.		
	ETE - 2.1	Analyze the interdisciplinary nature of engineering and technology.	-
	ETE - 2.2	Apply knowledge and skills learned in science, mathematics, language arts, fine arts, and social studies classes when completing engineering and technology-based assignments.	•
Standard 3	Students will investigate the evolution of engineering and technology of products, structures, and systems.		
	ETE - 3.1	Analyze how the eras in history are based on technological innovations and practices of the period.	-
	ETE - 3.2	Investigate inventions and innovations of products, processes, materials, and tools.	-
	ETE - 3.3	Compare technology inventions and innovations and the positive/negative impacts on society and the environment.	-
Domain 2 Engineering Design and Development			
Standard 4	Students will apply engineering principles when planning, developing, implementing, and analyzing technological solutions.		
	ETE - 4.1	Apply the steps of the design process.	•
	ETE - 4.2	Use the design process to create a product that addresses a real world problem.	•
	ETE - 4.3	Create a technical sketch of a design with appropriate annotation.	•
	ETE - 4.4	Develop a product using the design process, while maintaining appropriate documentation.	•
	ETE - 4.5	Develop various types of models (graphical, physical, or mathematical) that help communicate solutions to peers.	•
Standard 5	Students will apply the principles of automation and robotics.		
	ETE - 5.1	Differentiate between the functions of motors, gears, sensors, wheels and control systems.	•
	ETE - 5.2	Interpret a technical document to build a working prototype of an automated system.	-
	ETE - 5.3	Design a working prototype or mechanical system to solve a pre-designated task.	-
	ETE - 5.4	Utilize the principles of computer science and information technologies by developing applications and codes applying to automation and robotics.	•

Domain 3 Producing and Using Technology				
Standard 6	Students will select, use, create, and evaluate transportation technologies.			
	ETE – 6.1	Compare and contrast the different types and uses of land, sea, air, space, and intermodal transportation.		-
	ETE – 6.2	Differentiate between the technical sub-systems common of all vehicles, including propulsion, structural, suspension, control, information, and support systems.		-
	ETE – 6.3	Design, develop, and evaluate transportation systems.		-
Standard 7	Students will select, use, create, and evaluate construction technologies.			
	ETE – 7.1	Investigate various types of construction systems including residential, industrial, commercial, and civil.		-
	ETE – 7.2	Utilize appropriate designs, techniques, tools, and processes for construction systems.		-
	ETE – 7.3	Construct simulations, models, and/or structures for specific construction systems.		-
Standard 8	Students select, use, create, and evaluate manufacturing technologies.			
	ETE – 8.1	Investigate various types of manufacturing systems including continuous, batch, and custom.		-
	ETE – 8.2	Utilize appropriate designs, techniques, tools, materials, and processes for manufacturing systems.		-
	ETE – 8.3	Produce simulations, models, and/or prototypes for specific manufacturing systems.		-
	ETE – 8.4	Describe and create a logistical path a product takes from its point of origin to its destination.		-
Standard 9	Students select, use, create, and evaluate biotechnologies.			
	ETE – 9.1	Investigate various types of biotechnologies including agricultural, genetics, medical, and imaging technologies.		-
	ETE – 9.2	Examine appropriate designs, techniques, tools, and processes for medical or genetic engineering.		-
	ETE – 9.3	Construct simulations, models, and/or prototypes for specific biotechnology disciplines.		-
Standard 10	Students will identify, select, and use energy and power technologies.			
	ETE – 10.1	Analyze a variety of power and energy technology systems.		-
	ETE – 10.2	Solve a simple power and energy challenge and create an efficient solution.		-
	ETE – 10.3	Utilize appropriate designs, techniques, tools, and processes for energy and/or power systems.		-
	ETE – 10.4	Design and construct simulations, models, and/or prototypes for specific power systems.		-
Standard 11	Students will select, use, create, and evaluate communication technologies.			
	ETE – 11.1	Evaluate the parts of a communication system.		-
	ETE – 11.2	Investigate various types of communication technologies including analog and digital technologies.		-
	ETE – 11.3	Design and construct simulations/models/prototypes for specific communication systems.		-
	ETE – 11.4	Analyze how information technology impacts modes of communication.		-
Domain 4 Engineering and Technology Careers				
Standard 12	Students will explore engineering and technology related careers.			
	ETE – 12.1	Investigate careers in engineering and technology pathways.		●
	ETE – 12.2	Analyze education and skill requirements for engineering and technology professions.		-
	ETE – 12.3	Report the outlook, demand, and projected wages for engineering and technology careers.		-