

Sixth Grade - Student Technology Competencies

Rationale: Technology literacy is increasingly important in our technology-driven society. The Technology Education Program is designed to educate all students in the following five strands: Nature of Technology; Technology and Society; Design; Abilities for a Technological World; and The Design World. Knowledge in all of these strands serves as a vehicle to develop and enhance understandings, skills, and attitudes that are applied in real life situations, regardless of career.

Course Description: Technology Education is an exploratory class that engages students in areas of design, construction, engineering, robotics, drafting, and problem-solving. The curriculum is designed to integrate math, science, and technology using tools and materials to construct a variety of projects (i.e. woodworking, robotics, manufacturing, and rockets). Students will be instructed as to the safe and proper use of hand and power tools.

Strand: The Nature of Technology

Content: Standard 2 - Develop an understanding of the core Learning Goals of technology.

Learning Goal D: Different materials are used in making things.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Identify different types of construction materials. (e.g., tin, wood products, plastics, mat board, and adhesives)			
	Use different types of construction materials. (e.g., tin, wood products, plastics, mat board, and adhesives)		

Content: Standard 3 – Develop and understanding of the relationships among technologies and the connections between technology and other fields of study.

Learning Goal J: Technological progress promotes the advancement of science and mathematics.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
			Use technology to reinforce and apply mathematical Learning Goals and scientific principles.

Strand: Technology and Society

Content: Standard 4 Develop an understanding of the cultural, social, economic, and political effects of technology.

Learning Goal E: Technology, by itself, is neither good nor bad, but decisions about the use of products and systems can result in desirable or undesirable consequences.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Discuss the inter-relationship among technology, people, and the environment.			

Strand: Design

Content: Standard 8 – Develop an understanding of the attributes of design.

Learning Goal C: The design process is a purposeful method of planning practical solutions to problems.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
		Explore and use the problem-solving process to arrive at a workable solution to a problem.	

Content: Standard 9 – Develop an understanding of engineering design.

Learning Goal C: Use the engineering design process involves defining a problem, generating ideas, selecting a solution, testing the solution, making the item, evaluating it, and presenting the results.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
			Use the engineering design process to define a problem, generate ideas, select a solution, make the item, evaluate it, and present the results.

Strand: Abilities for a Technological World

Content: Standard 11 – Develop the abilities to apply the design process.

Learning Goal B: Build or construct an object using the design process.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
	Follow a drawing to construct the object.		

Content: Standard 12 – Develop the abilities to use and maintain technological products and systems.

Learning Goal D: Follow step-by-step directions to assemble a product.

Learning Goal E: Select and safely use tools, products, and systems for specific tasks.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
	Follow written and oral directions to construct a project.		
	Demonstrate the safe use of tools and machinery.		
Demonstrate the understanding of the safety rules by passing a safety test with 100% accuracy.			

Strand: The Designed World

Content: Standard 17 – Develop an understanding of, and be able to select and use information and communication technologies.

Learning Goal K: The use of symbols, measurements, and drawings promotes a clear communication by providing a common language to express ideas.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Measure to the nearest 1/16 of an inch.			

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Identify an object line, a dimension line, and a hidden line on a drawing.			
	Draw an object displaying an object line, a dimension line, and a hidden line.		
		Distinguish between the height, width and depth of an object.	
	Measure the height, width and depth of an object.		
	Use measurement to calculate a variety of points.		

Content: Standard 19 – Develop an understanding of and be able to select and use manufacturing technologies.

Learning Goal A: Manufacturing systems produce products in quantity.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Identify reasons for producing products in quantity.			
			Produce a product using the manufacturing process.

Strand: Career Clusters - Employability & Career Development

Content: Exhibit continuous improvement for personal and professional growth.

Learning Goal A: Develop skills and knowledge for career growth.

Learning Goal B: Demonstrate performance expectations of a job.

Measurable Learner Objectives:

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
		Use teamwork to accomplish a common goal in a problem-solving activity.	

Recall Level 1 (Basic Knowledge)	Application Level 2 (Skills)	Strategic Thinking Level 3 (Reasoning)	Extended Thinking Level 4 (Products/Performance)
Develop an awareness of careers and opportunities related to technology.			
	Recognize and respect the safety rules in the classroom.		