Technology Education Outcomes, Grades 7-9 (DRAFT- JUNE 2011)

GCO 1: Students will be expected to design, develop, evaluate, and articulate technological solutions.
GCO 3: Students will be expected to demonstrate an understanding of the history and evolution of technology, and of its social and cultural implications.

Threading Outcomes

Grade 7	Grade 8	Grade 9
Students will be expected to…		
5.1 work independently, co-operatively, and collaboratively to solve technological problems		
5.2 demonstrate an awareness of ethics and environmental responsibility in technological decision-making and work habits		
5.3 demonstrate preparedness for technological problem solving		
5.4 demonstrate safe and healthy practices with regard to materials, processes, and equipment		
5.5 document the design process		
5.6 independently demonstrate appropriate application of skills learned		
5.7 demonstrate measuring skills with accuracy and precision		
5.8 communicate ideas using 2D and 3D technical drawings and sketches		
5.9 use appropriate language and terminology as applied to technology education		
5.10 investigate connections between technology education, STEM (Science, Technology, Engineering, and Math), and careers		

Communications Technology

GCO 4: Students will be expected to demonstrate an understanding of the consequences of their technological choices.

Grade 7	Grade 8	Grade 9
Students will be expected to…		
follow a plan to solve communications technology problems	modify a plan to solve communications technology problems	develop a plan to solve authentic communications technology problems
create solutions to communications technology problems using given media	create solutions to communications technology problems using a variety of media	create solutions to authentic communications technology problems
evaluate their design solutions, re-designing as necessary		evaluate their solutions to authentic communications technology problems
modify a variety of given communications technology media to solve a design problem	demonstrate effective use of a variety of communications technology media	create and manipulate a variety of communication technology media to solve a design problem
identify target audiences	characterize target audiences and determine effective medium	determine criteria for specific target audiences
identify elements and principles of design	apply elements and principles of design	
		present a solution and rationale to a target audience using a given medium

Energy Engineering

GCO 2: Students will be expected to operate and manage technological systems.

Grade 7	Grade 8	Grade 9
Students will be expected to…		
read and interpret a plan to solve energy engineering problems	modify a plan to solve energy engineering problems	develop a plan to solve energy engineering problems
construct an energy engineering solution by using a given plan	construct an energy engineering solution by using or creating a modified plan	design and construct solutions to energy engineering problems
identify solutions to energy engineering problems	examine solutions to energy engineering problems	evaluate solutions to energy engineering problems

demonstrate mechanical advantage using a simple machine	demonstrate practical applications of mechanical advantage	construct or modify a device that demonstrates the conversion of energy
identify devices which change motion in real world technological solutions	operate and analyze devices that change motion	create a mechanical device that demonstrates a change in motion
identify mechanical advantage in real world technological solutions	create and operate devices that use mechanical advantage	use mechanical advantage in the solution of a technological problem
investigate the forces affecting structures or control systems		use knowledge of energy sources to make decisions about real-life energy problems

Innovations and Inventions		
GCO 2: Students will be expected to operate and manage technological systems.		
Grade 7	**Grade 8**	**Grade 9**
Students will be expected to…		
interpret a plan to develop a system	modify a plan to develop a system	design and construct a system incorporating simple machines that will initiate a series of events
create a model or prototype of an existing invention		design an adaptation for an existing product that solves a new need
differentiate the components of simple technological systems	explain a complex system in terms of its subsystems	
examine and communicate the importance and impact of invention and innovation		evaluate the impact of invention and innovation
develop improvements to an existing product		
investigate the manufacturing process of a product	document the life cycle of a manufactured product	hypothesize and investigate how products are manufactured
engineer a prototype to solve a design challenge	employ control systems to regulate processes	
	diagnose and repair malfunctioning systems	reverse-engineer a product to explain its inner workings

Production Technology		
GCO 5: Students will be expected to demonstrate an understanding of current and evolving careers and of the influence of technology on the nature of work.		
Grade 7	**Grade 8**	**Grade 9**
Students will be expected to…		
interpret a plan to solve production technology problems	modify a plan to solve production technology problems	develop a plan to solve authentic production technology problems
construct solutions to production technology problems		construct solutions to authentic production technology problems
evaluate solutions to production problems		evaluate solutions to authentic production problems
use basic hand tools, power tools, and equipment to create a product that solves a design problem	use a variety of hand tools, power tools, and equipment to prepare stock and construct a finished product that solves a design problem	demonstrate safe and effective use of a variety of production technology tools and processes
		work with real-life clients or situations to solve production related problems within school or community environments
use fasteners to combine materials	use a variety of fasteners to combine materials or assemble a product	use production equipment and machines to process materials
use a variety of finishing techniques to enhance the esthetics or functionality of a product		