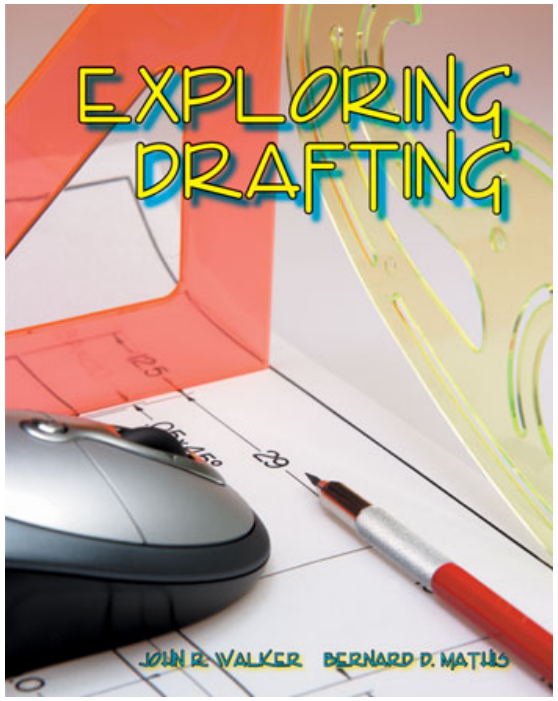
Goodheart-Willcox Publisher

Florida Department of Education
State Standards Correlation

Subject Area: Technology Education, 6-12
Course: 8600810 Drafting/Illustrative Design I
Exploring Drafting © 2006



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CORRELATION
FLORIDA DEPARTMENT OF EDUCATION
COURSE DESCRIPTION

SUBJECT: Technology
COURSE NAME: Drafting/Illustrative Design Technology 1 **COURSE CODE NUMBER:** 8600810
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OUTCOME NUMBER	BENCHMARK NUMBER	INTENDED OUTCOME/BENCHMARK DESCRIPTION	PAGE(S) OR LOCATION(S) WHERE TAUGHT IN MAJOR TOOL	I/M*
1		**DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY--The student will be able to:**		
	1.01	Discuss the nature and development of technological knowledge and processes. STL.1.J, LA.B.2.4, LA.C.3.4, SC.H.3.4	152-153	I
	1.02	Conduct specific goal-directed research related to inventions and innovations. STL.1.L, LA.A.2.4, LA.B.2.4	515	M
2		**DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY--The student will be able to:**		
	2.01	Identify systems thinking logic and creativity with appropriate compromises in complex real-life problems. STL.2.W	349 (OA#4)	M
	2.02	Define technological systems as the building blocks of technology, embedded within larger technological, social, and environmental systems. STL.2.X, LA.D.2.4	498	M
	2.03	Identify resources involving trade-offs between competing values, such as availability, cost, desirability, and waste. STL.2.Z	83-85	I
	2.04	Identify the criteria and constraints of a product or system and determine how they affect the final design and development. STL.2.AA, MA.A.5.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.3.4, SC.H.1.4	376	I
	2.05	Define a management system as the process of planning, organizing, and controlling work. STL.2.EE, LA.B.2.4	370	M

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3		**DEMONSTRATE AN UNDERSTANDING OF THE RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTIONS BETWEEN TECHNOLOGY AND OTHER FIELDS OF STUDY--The student will be able to:**		
	3.01	Identify technology transfer occurring when a new user applies an existing innovation developed for one purpose in a different function. STL.3.G, SC.H.3.4	172	M
	3.02	Identify technological innovation resulting when ideas, knowledge, or skills are shared within a technology, among technologies, or across other fields. STL.3.H, SC.H.3.4	498	M
	3.03	Identify technological progresses that promote the advancement of science and mathematics. STL.3.J, LA.A.1.4, LA.B.1.4, SC.H.3.4	172	M
4		**DEMONSTRATE AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY--The student will be able to:**		
	4.01	Identify changes caused by the use of technology ranging from gradual to rapid and from subtle to obvious. STL.4.H	498	I
	4.02	Classify the use of technology involving weighing the trade-offs between the positive and negative effects. STL.4.I, LA.B.2.4	371	M
	4.03	List the cultural, social, economic, and political changes caused by the transfer of a technology from one society to another. STL 4.K, LA.B.2.4, LA.E.1.4, SC.H.3.4		

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5		**DEMONSTRATE AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY--The student will be able to:**		
	5.01	Research how the evolution of civilization has been directly affected by, and has in turn affected the development and use of tools and materials. STL.7.H, LA.A.1.4, LA.A.2.4, LA.B.2.4, SC.H.3.4, SS.A.2.4	453	M
	5.02	Define the history of technology as a powerful force in reshaping the social, cultural, political, and economic landscape. STL.7.I, LA.D.2.4, SS.A.2.4	498	M
	5.03	Define the Industrial Revolution and the development of continuous manufacturing, sophisticated transportation and communication systems, advanced construction practices, and improved education and leisure time. STL.7.N, SS.A.5.4	498	M
	5.04	Define the Information Age and its placement of emphasis on the processing and exchange of information. STL.7.O	166	M
6		**DEMONSTRATE AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN--The student will be able to:**		
	6.01	Recognize the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results. STL.8.H	369-377	I

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	6.02	Restate design problems that are seldom presented in a clearly defined form. STL.8.I, LA.D.1.4, LA.D.2.4	376	M
	6.03	Check and critique a design continually, and improve and revise the idea of the design as needed. STL.8.J, SC.H.1.4	349	M
	6.04	List competing requirements of a design, such as criteria, constraints, and efficiency. STL.8.K, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4	484	M
7		**DEMONSTRATE AN UNDERSTANDING OF ENGINEERING DESIGN--The student will be able to:**		
	7.01	Identify design principles used to evaluate existing designs, to collect data, and to guide the design process. STL.9.I	370-376	I
	7.02	Describe the influence of personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly on the engineering design process. STL.9.J, LA.D.1.4, SC.H.1.4	152	M
	7.03	Construct a prototype or working model used to test a design concept by making actual observations and necessary adjustments. STL.9.K, MA.B.1.4, SC.H.1.4, SC.H.3.4	379-389	I
	7.04	Identify factors taken into account in the process of engineering design. STL.9.L, MA.A.2.4, MA.A.4.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.E.1.4, SC.H.3.4	370-376	I

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8		**DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND EXPERIMENTATION IN PROBLEM SOLVING--The student will be able to:**		
	8.01	Define research and development as a specific problem-solving approach that is used intensively in business and industry to prepare devices and systems for the marketplace. STL.10.I	370-371	I
	8.02	Identify research needed to solve technological problems. STL.10.J, LA.A.1.4, LA.A.2.4	482	I
	8.03	Differentiate between technological and non-technological problems, and identify which problems can be solved using technology. STL.10.K, SC.H.1.4		
	8.04	Utilize a multidisciplinary approach to solving technological problems. STL.10.L, MA.A.1.4, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.1.4, MA.E.3.4, SC.H.1.4, SC.H.3.4	377	M
9		**DEMONSTRATE ABILITIES TO APPLY THE DESIGN PROCESS--The student will be able to:**		
	9.01	Identify the design problem to solve and decide whether or not to address it. STL.11.M, SC.H.1.4	376	M
	9.02	Identify criteria and constraints and determine how these will affect the design process. STL.11.N, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4, SC.H.1.4, SC.H.3.4	484	M
	9.03	Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product. STL.11.O, MA.B.1.4, MA.B.4.4	379-389	I

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	9.04	Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed. STL.11.P, MA.A.4.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, SC.H.1.4, SC.H.3.4	379-389	I
	9.05	Develop and produce a product or system using a design process. STL.11.Q	377	I
	9.06	Evaluate final solutions and communicate observation, processes, and results of the entire design process, using verbal, graphic, quantitative, virtual, and written means, in addition to three-dimensional models. STL.11.R, LA.B.2.4, LA.C.3.4, MA.B.4.4, MA.D.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4, SC.H.1.4, SC.H.3.4	389	M
10		**DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS--The student will be able to:**		
	10.01	Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. STL.12.L, LA.B.2.4, LA.B.1.4, LA.C.3.4	113 (ACT #2)	M
	10.02	Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. STL.12.M		
	10.03	Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision. STL.12.N		
	10.04	Operate systems so that they function in the way they were designed. STL.12.O	86	I

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	10.05	Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. STL.12.P, LA.A.2.4, MA.E.1.4	151-173, 294	I
11		**DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS--The student will be able to:**		
	11.01	Collect information and evaluate its quality. STL.13.J, LA.A.2.4, SC.H.1.4	403 (G.A. #2)	M
	11.02	Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and environment. STL.13.K, LA.A.2.4, SC.G.1.4, SC.G.2.4, SC.H.1.4	417	M
	11.03	Use assessment techniques, such as trend analysis and experimentation to make decisions about the future development of technology. STL.13.L, LA.A.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4		
	11.04	Design forecasting techniques to evaluate the results of altering natural systems. STL.13.M, MA.E.3.4, SC.G.2.4		
12		**DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE INFORMATION AND COMMUNICATION TECHNOLOGIES--Students will be able to:**		
	12.01	Discuss information and communications technologies including inputs, processes, and outputs associated with sending and receiving information. STL.17.L	82-85	I

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	12.02	Classify information and communications systems that allow information to be transferred human to human, human to machine, machine to human, and machine to machine. STL.17.M	82-85, 169-172	I
	12.03	Use information and communication systems to inform, persuade, entertain, control, manage, and educate. STL.17.N, LA.B.1.4, LA.B.2.4, LA.C.1.4, LA.C.2.4, LA.C.3.4	36	M
	12.04	Identify many ways to communicate information, such as graphic and electronics means. STL.17.P, LA.C.3.4	406,-417, 36	I
	12.05	Communicate technological knowledge and processes using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli. STL.17.Q, LA.C.3.4, MA.A.1.4, SC.H.3.4		
13		**DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES--The student will be able to:**		
	13.01	Service products to keep them in good operating condition. STL.19.L	86	I
	13.02	Discuss the interchangeability of parts to increase the effectiveness of manufacturing processes. STL.19.P, MA.B.4.4	498	M
15		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT THE USE AND CARE OF DRAFTING INSTRUMENTS, EQUIPMENT, AND MATERIALS--The student will be able to:**		

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	15.01	Identify and demonstrate technical knowledge and skills about the use and care of drafting instruments and equipment. MA.B.2.4, MA.B.4.4	68-88, 95-99, 362	I
	15.02	Demonstrate technical knowledge and skills about the properties, specifications, and use of drafting materials and supplies. MA.B.1.4, MA.B.4.4, MA.C.1.4	73-74, 76, 78	I
16		**DEMONSTRATE TECHNICAL SKILLS AND APPLICATIONS COMMON TO ALL TYPES OF DRAFTING--The student will be able to:**		
	16.01	Apply lettering techniques. LA.B.1.4, LA.B.2.4, MA.A.1.4	175-189	I
	16.02	Make freehand sketches. MA.A.4.4	42-65	I
	16.03	Use drafting symbols and alphabet of lines in accordance with technical standards and practices. MA.B.4.4	42-47, 474, 477	I
	16.04	Apply measuring techniques. MA.B.1.4, MA.B.2.4, SC.E.2.4		
	16.05	Apply industry standard dimensioning techniques. MA.B.1.4, MA.B.4.4	219-251	I
	16.06	Apply geometric construction techniques. MA.C.1.4, MA.C.3.4	121-149	I
	16.07	Interpret information from drawings, prints, and sketches. MA.E.1.4		
	16.08	Apply coordinate systems. MA.C.3.4	155-158	I
	16.09	Produce and reproduce drawings using modern technical methods for drafting reproduction.	358, 360, 362-363, 365	I
17		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING BASIC ORTHOGRAPHIC DRAWINGS--The student will be able to:**		

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	17.01	Explain the theory of orthographic projection. MA.C.2.4	193, 197	I
	17.02	Identify the six principal views of an object. MA.C.2.4	192	I
	17.03	Produce a three-view orthographic drawing. MA.C.2.4	215-217	I
	17.04	Produce a CAD three-view orthographic drawing. MA.C.2.4	210	M
18		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING PICTORIAL DRAWINGS--The student will be able to:**		
	18.01	Explain methods of pictorial drawing.	285-317	I
	18.02	Produce an isometric drawing. MA.C.2.4	288-293	I
	18.03	Produce a CAD isometric drawing. MA.C.3.4	308	I
	18.04	Produce an oblique drawing. MA.C.3.4	293-294	I
	18.05	Produce a CAD oblique drawing. MA.C.2.4	308-309	I
	18.06	Produce a perspective drawing. MA.C.2.4, MA.C.3.4	300-305	I
	18.07	Produce a CAD perspective drawing. MA.C.2.4, MA.C.3.4	308	M
19		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING AUXILIARY VIEW DRAWINGS--The student will be able to:**		
	19.01	Explain terminology and concepts associated with auxiliary view drawings. MA.C.2.4, LA.A.1.4	273-283	I
	19.02	Produce an auxiliary view drawing. MA.C.2.4	273-283	I
	19.03	Produce a CAD auxiliary view drawing. MA.C.2.4	278	I
	19.04	Develop a pattern using surface development techniques. MA.C.2.4	321-324, 327-339	I
20		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING SECTIONAL VIEW DRAWINGS--The student will be able to:**		

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	20.01	Define sectional view and types of sectional views. LA.A.1.4, MA.C.2.4	254	I
	20.02	Illustrate the types of breaks and symbols used in drawing sectional views.	254-265	I
	20.03	Produce a sectional view drawing. MA.B.4.4, MA.C.2.4	254-278	I
	20.04	Produce a CAD sectional view drawing. MA.B.4.4, MA.C.2.4	265-266	I
21		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING WORKING DRAWINGS--The student will be able to:**		
	21.01	Produce detailed machine drawings. MA.B.1.4, MA.B.4.4	350-354	I
	21.02	Produce detailed assembly drawings. MA.B.1.4, MA.B.4.4	343,345	I
	21.03	Produce a technical illustration. MA.B.1.4, MA.B.4.4	305-306	M
22		**DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING A BASIC RESIDENTIAL DRAWING--The student will be able to:**		
	22.01	Produce a dimensioned floor plan. MA.B.1.4, MA.B.2.4, MA.B.4.4	471, 474-483	I
	22.02	Produce dimensioned elevation drawings. MA.B.1.4, MA.B.2.4, MA.B.4.4	397,471	I

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