



Curriculum

Industrial Technology I- II

Grade: 9-12

2012 - 2013

*** For adoption by all regular education programs
Board Approved: <Month Year>
as specified and for adoption or adaptation by
all Special Education Programs in accordance
with Board of Education Policy.**

PAULSBORO SCHOOL DISTRICT

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PAULSBORO SCHOOL DISTRICT

Number Sense;

- (4.1): ALL STUDENTS WILL GAIN A PRACTICAL EXPOSURE TO MATHEMATICAL THEORIES AS RELATED TO THE CONSTRUCTION TRADES.

Measuring;

- (4.2): ALL STUDENTS WILL BE ABLE TO ACCURATELY USE MEASURING TOOLS TO PREPARE ASSIGNMENTS AS REQUIRED FOR ROUGH & FINAL PROJECT REQUIREMENTS.

Table & Graphs;

- (4.3): ALL STUDENTS WILL BE ABLE TO ACCESS WOOD TRADE INFORMATION.

Probability Estimate;

- (4.4): ALL STUDENTS WILL BE ABLE TO PROPERLY ESTIMATE PROJECT ASSIGNMENT.

Problem Solving;

- (4.5): ALL STUDENTS WILL BE ABLE TO DEVELOP BASIC PROBLEM SOLVING SKILLS AS RELATED TO THEIR INDIVIDUAL OR GROUP PROJECT ASSIGNMENTS.

Computer & Information Literacy

- (8.1): ALL STUDENTS WILL USE COMPUTER APPLICATIONS TO GATHER AND ORGANIZE INFORMATION AND SOLVE RELATED WOODWORKING PROBLEMS.

Career & Technical Education

- (9.1): ALL STUDENTS WILL DEVELOP CAREER AWARENESS AND PLANNING, EMPLOYABILITY SKILLS, AND FOUNDATIONAL KNOWLEDGE NECESSARY FOR SUCCESS IN THE WORKFORCE.

Consumer, Family, and Life Skills

- (9.2): ALL STUDENTS WILL DEMONSTRATE CRITICAL LIFE SKILLS IN ORDER TO BE FUNCTIONAL MEMBERS OF SOCIETY.

Paulsboro Schools Mission Statement

The mission of the Paulsboro School District is to provide each student educational opportunities to assist in attaining their full potential in a democratic society.

Our instructional programs will take place in a responsive, community based school system that fosters respect among all people.

Our expectation is that all students will achieve the New Jersey Core Curriculum Content Standards (NJCCCS) at every grade level.

<u>Marking Period (1)</u>	<u>Industrial Technology I-II</u> (Enter major concept here) Students will review safety and tool usage, as well as learn the use of new tools and machines. Students will use this knowledge to design and create a technology project. (CO2 cars, bridges, hot air balloons, magnetic levitation cars etc.)
<u>Marketing Period (2)</u>	<u>Industrial Technology I-II</u> (Enter major concept here) This course will allow students to develop critical thinking, problem solving, manipulative skills and cooperative learning strategies, which will aid them in other areas of study, future technology courses, and in everyday life.
<u>Marking Period (3)</u>	

Industrial Technology I-II
(Enter major concept here)

Students will be introduced to various engineering design challenges to develop problem-solving skills. Students will be challenged, individual or as a group.

Marking Period (4)

Industrial Technology I-II
(Enter major concept here)

This class is designed for those students who have interest in vehicles. We will experiment with not only land based but also boats, airplanes, rockets. The class will be mostly lab time with various assigned activities. Most work will be done in small groups. Students will employ individual and group problem solving skills. We will be designing and building model planes, CO2 cars, mag-lev cars & rockets.

Core Curriculum
Marking Period (1)

Woods: I-II-III-IV
Grade: 9-12

Quarter 1
Objective/ Cluster
Concept/ Cumulative
Progress Indicators
Taken from CPI's in NJCCCS
standards

<http://www.nj.gov/education/aps/cccs/>

NJCCCS:

9.4.12.I.(4).2

9.4.12.I.(4).3

9.4.12.I.(4).4

9.4.12.I.(4).5

9.4.12.B.40

9.4.12.B.41

Suggested days of instruction
Mon. Tues. Wed. Thur. Fri.

MASTER GOAL FOR THE YEAR

Industrial technology is an area of study that helps student become technologically literate. Through classroom lesson and lab activities, students learn about technical, social and cultural impacts of technology in our world. Students acquire a new vocabulary that helps them to better express their knowledge of technology. Likewise, their hands-on experiences in technology education teach them how to use tools and equipment while applying safety principals to accomplish technical tasks

9.4.12.B.42 9.4.12.B.43 9.4.12.B.44 9.4.12.B.45 9.4.12.B.46 9.4.12.B.47	<u>Topic: (name of unit)</u> INTRODUCTION OF SAFETY PRINCIPLES Overarching Goals: Students will be able to demonstrate proper safety Procedures. (Written & Hands-On) *
	<u>Goal 1:</u> Students will be able to: I. Demonstrate the use and understanding of safety principles, which are applicable to the woodshop facility. • State basic shop safety rules • Explain how to avoid injury to themselves and others • Identify common hazards found in the woodshop setting. • Demonstrate and explain the correct manner in which to proceed in the woodshop. II. Demonstrate the safe and proper use of hand tools, portable power tools, and stationary machinery. • Explain how to use tools and equipment safely and

properly

- Identify and explain the correct function of all mechanical safety devices in the woodshop.
- Demonstrate the correct, safe procedures to use all hand tools, portable and stationary equipment in the shop.

Goal II:

Students will be able to:

- Demonstrate the correct use of tools and materials in planning an orthographic drawing of an object.
- Correctly produce an orthographic drawing of the objects given.
- Produce a model of a given orthographic drawing.
This project will be done in groups.

Goal III:

Students will be able to:

- Explain the importance of knowing why and how to plan projects.
- Choose and identify the tools and materials used to complete the planning process.
- Demonstrate the understanding of good design in planning.

	<u>Assessment Criteria:</u> • Written Tests • Knowledge & Comprehension • Hands-on demo on hand tool use • Hands-on use of portable tools • Hands-on use of stationary tools • Finish project	Learning Activities: • Addressing safety rules • Planning projects • Using hand tools • Using portable tools • Using stationary tools • Using common joints • Using fasteners • Joinery & gluing • Finishing projects
	<u>Core Curriculum</u> Marking Period (2)	
Woods: I-II-III-IV	Suggested days of instruction	
Grade: 9-12	Mon. Tues. Wed. Thur. Fri.	
Quarter 1		
Objective/ Cluster	Topic: (name of unit)	

Concept/ Cumulative Progress Indicators

taken from CPI's in NJCCCS standards

<http://www.nj.gov/education/aps/cccs/>

NJCCCS:

3.4.B.3

9.1.F.1

9.1.F.2

9.1.F.3

5.1.C.1

9.1.B.4

9.2.B.2

9.2.B.1

9.1.B.4

9.2.B.2

9.2.C.1

IDENTIFICATION & USE OF COMMON HAND, PORTABLE & STATIONARY MACHINE TOOLS.

Overarching Goals: (taken from Introduction, Philosophy and educational goals page, pg 4)

Students will be able to identify common hand, portable & stationary tools.

Goal 1:

Students will be able to:

- Identify and use hand tools associated with the woodworking industry.
- Sequence tasks to be performed using hand tools.

Goal II:

Students will be able to:

- Identify and use common portable machine tools used in the woodworking industry.
- Follow safety practices when using portable machine tools.
- Students will be able to use portable tools to complete specific tasks given.
- Use portable tools as part of the process to successfully complete their woodworking projects.

GOAL III:

Students will be able to:

	• Use common stationary machine tools found in a woodworking setting. • Follow safety practices when using machine tools.
	<u>Core Curriculum:</u> Marking Period (3)
Woods: I-II-III-IV Grade: 9-12 Quarter 1 Objective/ Cluster Concept/ Cumulative Progress Indicators Taken from CPI's in NJCCCS standards http://www.nj.gov/education/aps/cccs/	Suggested days of instruction Mon. Tues. Wed. thur. Fri. Topic: (name of unit) All students will develop an understanding of the nature and impact of Technology, engineering, technological design, and the designed world as they relate to the individual, society, and the environment. Overarching Goals: (taken from Introduction, Philosophy and educational goals page, pg 4) Students will be able to describe the nature of technology and the consequences of various technological activities. <u>GOAL !:</u> Students will be able to stress relationships;; • Workplace readiness • Technology

9.2.A.1
9.1.F.1
9.1.F.2
9.1.F.3
5.1.C.1
3.4.B.2

- Language Arts
- Math
- Science
- Basic interrelationships between technologies.

GOAL II:

Students will be introduced to TLA's

- Identifying the problem
- Detective work
- Tying down the problem
- Exploring ideas
- Planning
- Construction
- Testing
- Problem solving

Assessment Criteria:

- Written Tests
- Knowledge & Comprehension
- Hands-on demo on hand tool use
- Hands-on use of portable tools

Learning Activities:

- Addressing safety rules
- Planning projects.
- Using hand tools
- Using portable tools
- Using stationary tools

- | | | |
|--|--|--|
| | <ul style="list-style-type: none">• Hands-on use of stationary tools• Finish projects | <ul style="list-style-type: none">• Finish project |
|--|--|--|

Core Curriculum:
Marking Period (4)

Woods; I-II-III-IV Grade: 9-12	Suggested days of instruction Mon. Tues. Wed. Thur. Fri.
Quarter 1 Objective/ Cluster Concept/ Cumulative Progress Indicators Taken from CPI's in NJCCCS standards http://www.nj.gov/education/aps/cccs/	Topic: (name of unit) All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, interpreting and analyzing data, drawing conclusions, and communicating results.
NJCCCS: 3.4.B.1 3.4.B.2 3.4.B.3 8.2.A.1 3.4.B.5 9.2.A.1 9.1.F.1 9.1.F.2 9.1.F.3	Overarching Goals: (taken from Introduction, Philosophy and educational goals page, pg 4) Proper awareness of various technological procedures Goal 1: (what the student will be able to do at the end of the unit) Students will be able to: • Inter-relate various technological activities.. • Students will be able to demonstrate an understanding of the various processes used to

5.1.C.1
3.4.B.2

- evaluate & communicate personal projects.
- Students will be able to prepare their projects for evaluation by other students.

GOAL II:

Students will be able to:

- Basic projects will be given to students.
- More difficult projects will follow depending on students progress.
- Stress shop safety procedures

Assessment Criteria:

- Written Tests
- Knowledge & Comprehension
- Hands-on demo on hand tool use
- Hands-on use of portable tools
- Hands-on use of stationary tools
- Finish projects

Learning Activities:

- Addressing safety rules
- Planning projects
- Using hand tools
- Using portable tools
- Using stationary tools
- Using common joints
- Joinery & gluing
- Finishing projects

Core Curriculum:

Curriculum Management system. These are the things your students will be able to do when they are finished this course.

Students will be able to:

- 1. Work safely and efficiently in a shop environment with hand and power tools.**
- 2. Apply background info about the nature of the project.**
- 3. Use tools and machines for layout work and prototyping to complete the design challenge.**
- 4. Construct a project out of wood and other materials that will display the techniques learned and practiced.**
- 5. Apply info learned about problem solving and tool usage to design and construct school and personal projects.**
- 6. Cross reference among other shop related technologies.**

ASSESSMENT & EVALUATION

Students will be evaluated bases on the following criteria:

I. Written Test:

- Safety
- Knowledge and Comprehension

II. Application Related:

- Teacher observation of the use of strategies, skills, and knowledge.
- Successful completion of a quality grade project.
- Teacher provided rubrics

III. Group & Individual Activities:

- Teacher observations of student participation during group activities.
- Teacher observation of classroom participation during classroom discussions and demonstrations.
- Students reflections based on rubrics.