Curriculum Map
Industrial Technology I & II

Week 1-3	Week 4-6	Week 7-10	Week 11-13	Week 14-16	Week 17-18
Introduction** Text Book **Technology in Actions:** ***Students will learn: **(1) Getting started in Technology;***What is Technology*Technology Is Chancing Fast*Solving Problems Step by Step*Putting Your Abilities to Work*Safety Rules, **(2) Using Technology;** *Technology and Other School Subjects*Putting It All Together, **(3)How Technology Affects You;***Technology Has Changed Our World*Evaluating Technology's Impacts*Testing Material*The Ecology of a Product,**(4) Introducing Computers;***Computer Basics *Using a Word Processor*Using a Database*Using a Spreadsheet ***Students will learn one of the following types of industrial technology***. Biotechnology, Plastics, Fluid power, Residential Electrical Writing, Conceptual/ Applied Physics, Engineering & Stress Analysis, Exploratory Electronics, CO2 Raceway and Manufacturing Technology, Residential Design and 3D Modeling, Fiber Optics & Lasers, Exploring Mechanisms, Exploring Electricity, Residential Plumbing, ***Students are assigned to their first & second technology station:*** *Rotation (1);***Fluid Power** ***Students will learn:*** *Force*Area and Pressure*Measuring Pressure *Buoyancy*Surface Tension *Pascal's Law*Boyle's Law *Charles's Law and Gay-Lussac's Law. *Rotation(2);* **Exploratory Electronics *Students will learn*:** *Safety &Meters* Electric Circuits*Current*Voltage & Resistance*Conductors & Insulators*Series Circuits *Parallel Circuits*Ohm's Law	**Technology in Actions:** ***Students will learn:*** **(5)Using Computers;***Drawing with a Computer*Using Digital Photography*Animating with Computers, **(6)Inventing Things;** *Innovation*Getting Ideas *Protecting New Ideas, **(7)Making Things:***Resources We Need*Choosing &Conserving Resources*How Products Are Manufactured. ***Students are assigned to there third & forth technology station:*** *Rotation (3)*;**Fiber Optics & Lasers** ***Students will learn:*** *Morse Code Transmission *Data Transmission *Voice Transmission *Radio Transmission*Fundamentals of Optics*Laser Light*Lasers *Rotation (4)*; **Exploring Mechanisms *Students will learn:*** *Introduction to Mechanical Power*The Inclined Plane & Wedge*The Lever*Types of Levers*The Wheel & Axle *The Pulley*The Screw and the gear --- **Beginning Level** (7Lessons) The Beginning Level curriculum begins with a 30-question pre-test to determine the degree of student familiarity with the module. This pre-test is followed by seven, 45 minute foundational lessons, most of which conclude with a lesson quiz. A 30-question post test concludes the module to assess student achievement	**Technology in Actions:** ***Students will learn:*** **(8)How Things Work;** *What is a system *Exploring Mechanical Systems *Exploring Electrical and Electronic Systems*Exploring fluid Systems*Exploring Thermal and Chemical Systems, **(9)Designing Things;***Why We Need Measuring Tools*Using Measurements *Designing Products For People*Choosing The Right Material*Making Models and Prototypes, **(10)Exploring Automation;** *Producing Products and Moving Materials*Mass Production *Moving Material*Robots, Robots, Everywhere*Putting Robots to Work. ***Students are assigned to their fifth & sixth technology station:*** *Rotation (5)*; **Engineering & Stress Analysis *Students Will Learn:*** *Forces in Structure *Stress*Materials 1*Materials 2 *Shapes and Forces 1*Shapes and Forces 2*Building Structures That Last. *Rotation (6)*; **Exploring Electricity *Students will learn:*** *Safety and Meters *Electric Circuits*Current, Voltage, and Resistance *Conductors and Insulators *Series Circuit*Parallel Circuit *Ohm's Law. --- **The Advance Level**(8Lessons) The Advance Level curriculum contains a total of eight 45 minute lessons. Upon completing the 30-question pre-test students begin with a review lesson of what was covered in the Beginning Level. There are seven additional 45 minute lessons which allow students to work more in-depth concepts. A 30-question post test concludes the module to assess student achievement	**Technology in Actions:** ***Students will learn:*** **(11)How Business Works;** *What is a Company*Starting a Corporation *Mass Productions*Total Quality Improvement*Packaging and Selling Products,**(12)Building Things;***What is Construction *Making Plans for Construction *Structural Design*Designing Communities,**(13)Using Energy;** *Where Do We Get Energy *Common Energy Sources*How Can We Save Energy*What Is Alternative Energy,**(14)Moving Things;***What is Transportation *Land Transportation*Water Transportation*Air Transportation ***Students are assigned to their seventh &eighth technology station:*** *Rotation (7)*;**Conceptual & Applied Physics *Students Will Learn:*** *Physics *Introductory Mechanics*Mechanical and Sound Waves *Basic Optics *Mirrors *Introduction to Thermodynamics *Electrostatics In Action. *Rotation (8)*; **Residential Wiring *Students Will Learn:*** *Wiring a Subpanel *Wire a 30-Amp 120/240 Volt Receptacle *Wire a Switch-Controlled Light Fixture*Wire a Switch-Controlled Receptacle *Wire Two Receptacles in Sequence *Wire a Switch-Controlled Split Receptacle*Wire a Three-Way Switches and Light Fixture *Wire a Doorbell *Install a Phone Jack *Install a Coaxial Cable Connector, --- **Credit—0.5** **Prerequisites---None** **Single-Block** **One Semester**	**Technology in Actions:** ***Students will learn:*** **(15)Finding & Using Information;***How Do We Communicate*Computer Networks and the Internet *Technical Writing and Drawing *Electronic Communication, **(16)Producing TV/Radio Programs;***How Radio and TV Work*Pre-Production*Radio Broadcasting*Video Production, **(17)Traveling in Space;***Space History*Putting Things Into Space*Unstaffed Space Flights ***Students are assigned to their ninth and tenth technology station:*** *Rotation (9);* **Plastics *Students Will Learn:*** *Plastics *Vacuum Forming *Basic Chemistry of Plastics *The Properties of Plastics *Injection Molding *Types of Plastics 1 *Types of Plastics 2,*Rotation(10);* **3D Design and Construction Modeling *Students Will Learn:*** *Measure for a Floor Plan *Create Wall Elevation Sketches *Create a Final Floor Plan *Create Final Wall Elevation Drawings *Assembly a 3D Scale Model of the Room *About Roofs *Circles and Polygons *Floor Area Puzzle *Use Home Design Software to Create a Floor Plan *Completing Your Floor Plan, --- **Comprehensive Level** (12 lessons) The Comprehensive Level curriculum is composed of 10 intensive lessons that cover all of the educational objectives of the Beginning and Advanced Level curricula. In addition, there are two lessons which present suggestions and guidance for **Independent Study Projects**. As with the other levels, the module begins with a 30-question pre-test and ends with the 30-question post test.	**Technology in Actions:** ***Students will learn:*** **(18)Living and Working in Space;** *The Benefits of Space Travel*Space Physics*Working in Microgravity *Living in Space for a Long Time, **(19)Exploring Chemical & Bio-Related Technology;** *Chemical and Bio-Related Technology *Distillation and Fermentation at Work*The Flow of Fluids *Genetic Engineering, **(20)Technology and Your Future;***Technology Today and Tomorrow*Building for the Future*Transportation for the Future*What Technology Means to You, ***Students are assigned to their eleventh, twelfth and thirteenth technology station:*** *Rotation (11);* **CO2 Raceway *Students Will Learn:*** *The Manufacturing System *What is Custom Manufacturing *Engineering in Manufacturing *CO2 Engine & Model Car *Designing a Model Car*Building a Prototype *Building the CO2 Model Car *The Finishing Touch *Constructing the Raceway *Race Day, *Rotation(12);***Biotechnology *Students Will Learn:*** *Introduction to Biotechnology *Ergonomics/Microscope Use *Bioengineering/Bionics*Health & Biotechnology *Biotechnology & Nutrition *Biotech & The Human Race * Biotechnology in Your Life, *Rotation(13)*; **Residential Plumbing *Students Will Learn:*** *Install Sink Basket Strainer and Drain Assembly *Install Tub Drain/Overflow and Trap *Rough in the Drainpipe *Install a Vent/Soil Stack and Cleanout *Rough In the Supply Pipes *Install a Kitchen Faucet *Troubleshoot a Lavatory Faucet *Install Shower Faucet *Install a Showerhead and Tub Spout *Install a Hose Bib 4/24/09