



Reavis High School
Curriculum Snapshot/Cover Page for Electronics 1



Unit 1: Safety

# of Days: 5 - 8	Students will examine what constitutes safe practices when dealing with voltage, current and resistances. Students will understand how Amperage affects the human body. Students will also understand safe electrical shop practices and First aid to shock victims. Assessment will be through a Safety Exam.
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Unit 2: Electrical Energy Fundamentals

# of Days: 5	Students will understand and explain the Electron Theory for Current. They will also be aware of the differences between Alternating Current and Direct Current. Students will become familiar with Conductors and Insulators. Assessment will be through quizzes.
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Unit 3: Mathematics used in Electronics.

# of Days: 5 - 8	Students will describe and understand the concepts of Voltage, Current and Resistance; they will understand the measurement units of Voltage, Current and Resistance. Students will gain the ability to express electrical quantities in engineering notation. Assessments will be through worksheets and quizzes.
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Unit 4: Conductors

of
Days:
5

Students will describe the factors that effect conductors, including their ampacity rating; they will determine correct conductor size based on the circuit load using the National Electrical Code. Students will also become familiar with the 'AWG' to assist them in choosing the correct conductor size. Assessment will be through quizzes.



Unit 5: Wiring Systems

of
Days:
5

Students will know where to find codes and authorities for an installation, including the marks of Testing agencies. Students will also understand the different conductor systems used in Residential and Light Commercial wiring. Assessment will be through a quizzes.



Unit 6: Conduit Bending

of
Days:
5 - 8

Students will understand the principles of Bending Conduit. They will practice the Mathematics and actual bending of the most common conduit bends including: 90 Degree Stub, Back to Back, Saddle. Assessments will be through worksheets and rubrics in lab sessions.



Unit 7: Boxes, Fittings and Covers

of
Days:
5

Students will understand the common electrical box shapes, usages and installations; they will explore the uses of ground clips, bushings and plaster rings. Students will understand "Bonding." Assessment will be through quizzes.



Unit 8: Tools for the Electrician.

of
Days:
3 - 5

Students will gain a practical understanding of essential tools and learn to use them safely and correctly. Assessments will be through quizzes.



Unit 9: Device Wiring-Labs

of
Days:
20 - 25

Students will complete a series of HouseWiring labs which will progressively advance the students knowledge of common household and light commercial wiring jobs. Assessments will be through Lab Rubrics.



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Unit 10: Direct Current Electronics

of Days: 5

Introduction to D.C. Electronics. Students will describe the concepts of voltage, current and resistance. Assessment will be through quizzes and Lab.



Unit 11: Resistor Color Coding

of Days: 5-8

Students will use the resistor color code to identify proper values and tolerance of a resistor. Assessment will be through worksheets and Quiz.



Unit 12: Ohm's Law

of Days: 5

The use of Ohm's Law will be presented to students, who will determine voltage, current and resistance in a circuit. Assessment will be through Worksheets and Quiz.



Unit : 13: Direct Current Labs

of
Days:
10 - 15

Students will name/identify and build circuits using Resistors, Capacitors, Inductors, Transformers, Semi-Conductor Devices and Switches. Assessments will be through Lab Rubric and Quiz.



Unit 14: Test Equipment

of
Days:
5

Students will name, identify and use Ohmmeters, Voltmeters, Ammeters and Multimeters during Lab sequences. Assessment will be through worksheets and Lab rubrics.



Unit 15: Soldering

of
Days:
5

Students will learn to safely solder electrical circuits. Assessments will be through worksheets and Lab rubrics.



Unit: 16

of
Days:
15-20

Students will build and solder series, parallel and combination Direct Current circuits. Assessments will be through Lab Rubrics.





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Unit 17- Digital Logic/ Solid State Devices

of
Days: 5
- 8

Students will learn the difference between analog and digital circuits and give examples of each. Students will also learn to count in varying number systems including Binary (base 2) and Hex (base 16). Students will perform the following types of number system conversions using manual calculations: Binary to decimal, Decimal to Binary, Binary to hexadecimal and Hexadecimal to Binary. Assessments will be through Worksheets and Quiz.



Unit 18: Logic Gates

of
Days: 5
- 8

Students will identify the different types of Logic Gates and their symbols including: NOT, AND, OR, NAND, NOR, XOR, XNOR. Students will also construct a Truth Table for a single Logic Gate and a combination Logic Gate. Boolean Expressions will also be covered for a single Logic Gate. Assessments will be through Worksheets and Quiz.



Unit 19: Troubleshoot Digital Circuits

of
Days: 3
- 5

Students will analyze and describe the operation of Decoders, Encoders, Multiplexers and Demultiplexers. Students will also describe the operation of a Digital Latch and determine the outputs for Set-Reset Latch constructed with Nand or Nor gates. Assessments will be through Worksheets and Quizzes.



Unit 20: Types of Memory

of
Days: 3
- 5

Students will analyze and describe the basic components and operation of the Memory Units including the following types: ROM, PROM, EPROM, EEROM and RAM. Assessments will be through Worksheet, Lab and Quiz.



Unit 21: Computer Overview

of
Days:
3 - 5

Students will identify the different internal computer components and understand their purpose. Students will practice disassembly and assembly of a computers internal parts including Ram, Soundboards, Graphic Boards and cooling fans. Assessment will be through Worksheet and Quiz.