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| UNIT TITLE | Unit 1: Digital Electronics |

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| TOPIC | 1-2: Intermediate Digital Electronics |
| DURATION | 7 days |
| DATES |  |

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| ESSENTIAL QUESTION | How are basic digital circuits built and tested? |

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| DESIGN QUESTION | | |
| Introducing New Knowledge (DQ2) | Deepening or Practicing (DQ3) | Generating and Testing Hypotheses (DQ4) |

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| STANDARDS |
| 01.02 Make proper electrical wire connections.  10.03 Demonstrate proficiency in the use of logic probes for digital circuits.  10.04 Demonstrate proficiency in the use of power supplies for digital circuits.  10.12 Troubleshoot logic circuits. |

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| ASSESSMENT AND MONITORING | |
| Formative | Exit slips, Q&A |
| Summative | Lab Quiz |

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| LEARNING GOALS |
| * TSW properly wire integrated circuits, switches, LEDs, and power supplies. * TSW utilize logic probes to test and troubleshoot digital circuits. |

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| LEARNING TARGETS | | |
| 2.0 Simpler Content | 3.0 Target | 4.0 More Complex |
| * Properly place components into breadboard | * Make proper connections between ICs, switches, LEDs, and power supply to construct functioning digital circuits | * Troubleshoot dead ICs to determine failure mode |

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| LESSON SEQUENCE / ASSIGNMENTS |
| * Day 1:   Lecture on breadboard, integrated circuits, IC pinouts, voltage levels, and logic probes. Teacher demonstration of proper circuit construction.   * Days 2-3:   Hands on practice with breadboarding of digital circuits. Teacher demo from Day 1 is available for students to refer to.   * Days 4-5:   Formal lab exercise for digital circuits. Results will be saved for first lab report to be written during Topic 1-3 Advanced Digital.   * Day 6:   Digital circuits practice for lab quiz.   * Day 7:   Digital circuits lab quiz. |

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| RESOURCES AND MATERIALS |
| Handouts, lab equipment |

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| ADAPTATIONS FOR UNIQUE STUDENT NEEDS (ELL, SPECIAL ED, GIFTED) |
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| AFTER LESSON – TEACHER REFLECTION |
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