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| UNIT TITLE | Unit 1: Digital Electronics |

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| TOPIC | 1-1: Basic Digital Electronics |
| DURATION | 7 days |
| DATES |  |

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| ESSENTIAL QUESTION | What are the basic building blocks of digital electronics and how do they function? |

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

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| STANDARDS |
| 10.10 Identify types of logic gates and their truth tables. |

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

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| LEARNING GOALS |
| * TSW utilize truth tables to describe the behavior of basic digital gates. |

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| LEARNING TARGETS | | |
| 2.0 Simpler Content | 3.0 Target | 4.0 More Complex |
| * Identify the basic symbols for digital logic gates | * Create truth tables for AND, OR, and NOT digital gates | * Create truth tables for combinational digital circuits |

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| LESSON SEQUENCE / ASSIGNMENTS |
| * Days 1-3:   Unguided hands on exploration of digital gates. Students experiment with “black box” circuits attempting to describe the behavior using their own terms. Teacher monitors student discussion for student discovery & understanding.   * Day 4:   Class discussion on what was learned about the blocks. Teacher introduces proper vocabulary and the concept of truth tables.   * Day 5:   Students apply truth tables to the “black box” circuits to identify the digital logic gate hiding within.   * Day 6:   Class discussion on truth table identification of “black boxes.”   * Day 7:   Basic Digital Gates 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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