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| **Learning**  **Outcomes** | * TLW learn about binary numbers and counting. * TLW build a whisker circuit on the Boe-Bot breadboard. * TLW learn how the whisker circuit can be used as an input to perform a function. * TLW use the whisker circuit to make LED’s Blink. * TLW use the whisker circuit along with LED’s to make an 8 bit binary counter. |

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| **Materials List** | | |
| * Boe-Bot * Laptop/computer * PBasic Stamp Program * USB cable & adapter | * 3-pin Headers * 2-220Ω Resistors * 10kΩ Resistors * Whisker Wire | * 7/8” screws * 1/2” spacers * Nylon Washer * Jumper wire * LED |

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| **Lesson**  **Summary** | * Discuss Binary numbers. * Create a wihisker circuit that can make an LED blink on and off. * Set up eight LEDs so that an eight bit binary counter can be controlled with the whisker inputs. |

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| **Homework** | Finish the 8-bit binary counter, to be due in the next 5 class periods |

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| **Resources** | Text Reference: |
| * Robotics with the Boe-Bot (pg 174-177) |

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| **Relevant Standards** | |
| GLEs |  |
| Guiding  Questions |  |