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| **TITLE: KNIGHT RIDER LEDS (CYLON EYE)** |

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| **LEARNING SCENARIO** | | | |
| ***School:*** | | Duration (minutes): | 40 |
| Teacher: |  | Students  age: | **12 -13** |

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| Essential Question: |  |

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| Topics: |
| * Arduino Programing Card and Block coding (Mblock) |
| Aims: |
| * They will use at least 4 Leds and code them by Mblock. |
| Outcomes: |
| * They will understand the basic electronic circuit. * They will use digital pin and GND * They will use LED, Resistor, breadboard, Jumper Cable * They will code Arduino with Mblock. * They will control digital pins with Mblock Code. * They will use loop Mblock Code. * They can adapt the circuit for the same task. |
| Work forms:   * Work in pairs   Methods: |
| Presentation and Project based Learning |

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| **ARTICULATION** |
| Course of action (duration, minutes) |
| **INTRODUCTION** |
| * Remind the discussion at the last lesson. How can we turn on at least 4 LEDs although we have 3 GND? Is it Possible? * Explain this:   https://twinspace.etwinning.net/files/collabspace/9/49/449/95449/images/bdf0664e_opt.jpg |
| **MAIN PART** |
| * **Let’s make Knight Rider Leds (Cylon Eye)** * **Set up this circuit with Arduino and other equipment**   https://twinspace.etwinning.net/files/collabspace/9/49/449/95449/images/be1277cde_opt.jpg   * Open Mblock and connect the Arduino * Write this code:   https://twinspace.etwinning.net/files/collabspace/9/49/449/95449/images/beffa80e_opt.jpg  **Video:**  [**https://youtu.be/ldsH8nJqJY8**](https://youtu.be/ldsH8nJqJY8)  **Scenarios for discussion**  **How can we set up this circuit with less jumper cable?**  **The other way of the circuit with less than 5 jumper Cable.**  https://twinspace.etwinning.net/files/collabspace/9/49/449/95449/images/b69faebe_opt.jpg  **Video:**  [**https://youtu.be/\_QkEmbSb3Vw**](https://youtu.be/_QkEmbSb3Vw) |
| **CONCLUSION**  **The + line and the - line on the breadboard are connected horizontal, So if you connect the beginning of one of this line to GND all pins can be used as GND.** |
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| Methods | Work forms |
| *presentation interview*  *talk demonstration*  *work on the text role playing*  *graphic work*  *interactive exercise /simulation on the computer* | *individual work*  *work in pairs*  *group work*  *frontal work* |

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| Material |
| * Arduino and USB connection Cable * Computer * 4 Leds * BreadBoard * 330 ohms Resistors * Jumper Cables |

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| Literature |

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| **PERSONAL OBSERVATIONS, COMMENTS AND NOTES** |
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