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

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

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|  Essential Question: |  |

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| Topics: |
| * Arduino Programing Card and Block coding (Mblock)
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| Aims: |
| * They will use at least 4 Leds and code them by Mblock.
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| 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.
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| 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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