

**CODE/MOE/UOIT Makerspaces Project**

**Lesson Plan: Grade 6 Science: Creating a Mars Rover, Part 2**

This is the second part of a two-part lesson. Part 1 involves designing a Mars Rover

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| **Lesson Objectives:** The focus is on pre-programming your device to move over a landscape that mimics that of Mars from a starting point to an end point.  |
| **Science and Technology Specific Curriculum Expectations:****Understanding Earth and Space Systems: Space**2.2: Use technological problem-solving skills to design, build, test devices;2.3: Use scientific inquiry/ research skills to investigate scientific advances that allow humans to adapt to a life in space;3.4: identify the technological tools and devices needed for space exploration.  |
| **Learning Goal:** We are learninghow tounderstand the challenges that astronauts experience while exploring in space and how to create devices that assist in this exploration. |
| **Success Criteria:** We can:* Design and build a rover that can move in different directions
* Design a Rover that has a particular function
* Research the landscape and conditions on the surface of Mars
* Work as a class to design a model of the Mars terrain
* Learn to manipulate the device to move through a series of obstacles
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| **Lesson Overview:** Using a previously designed Rover, be able to manipulate it through a series of obstacles that mimic the surface of the planet. Students have used Spheros and Little Bits to create a model of a Mars Rover that includes functional parts.  |
| **Materials and Technology:*** Sphero and I-pad with app
* Variety of ‘little bits’ materials for functional devices on rovers
* Variety of materials-wood, paper, cardboard,
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| **Student Accommodations/ Modifications:** |
| **Minds-On:*** Investigate / research/ video of Mars rovers.
* Investigate / research/ video of Mars landscape.
* Exploration using Spheros and ‘Little Bits”, as a lead in to specific functions.
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| **Action:*** Design and build a rover that can move in different directions
* Design a Rover that has a particular function- students choose what they want their rover to accomplish (i.e., pick up rock samples).
* Research the landscape and conditions on the surface of Mars
* Work as a class to design a model of the Mars terrain
* Learn to manipulate the device to move through a series of obstacles
* Assessment may take the form of a checklist, anecdotal notes, peer/self-assessment or a rubric
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| **Consolidation:*** Discuss scientific advances that allow humans to adapt to a life in space.
* Discuss the technological tools and devices needed for space exploration
* Discuss the challenges they encountered with their designs
* Discuss the challenges they encountered manipulating the terrain
* Brainstorm or suggest alternatives to overcome the challenges.
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