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**Technology Exploration-I**

Module 6:

Project



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PREPARED BY

**Academic Services**

August 2011

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Module 6: Project

**Module Objectives**

In this project-based module, students will be able to:

* Explore how simple machines could be used to build simple systems.
* Explain the purpose of electric cars.
* Design and assemble a walker using simple machines and other components and test its functioning.
* Present the project through a PowerPoint presentation.

**Module Content:**

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| **6.1** **Walker Assembly** | |
| **Construct**  Build the Walker (all of book 13A and book 13B up to page 13 step 18)   * Make sure the power lead is held clear of all moving parts * Place it on a smooth surface and start the motor by pushing the battery switch forward * The legs should move freely     Figure 6.1: The Walker Robot | |
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| **6.2 Material List** |
| 1. Lego MINDSTORMS Simple and Motorized Mechanisms Base Set. 2. Large thin book with a hard cover – big book or ring binder. 3. Ruler. 4. Stopwatch or timer. 5. Up to 1 m of floor space. 6. Book 13A and Book 13B.   http://www.legoeducation.us/_static/webupload/730/29_2068_3.jpg  Figure 6.2: Simple and Motorized Mechanisms Base Set |

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| **6.3 Activities**  **Task1: How fast can the Walker walk?**  First predict how long it will take the Walker to walk 50 cm using leg setting A. Then test your prediction. Next, follow the same procedure for leg settings B and C.  Fill the table below with your predictions and measurements.    Figure 6.3: Test the speed. |

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| **Task 2: Climbing over Hills**   * Make a low hill from a big book or ring binder * Place the Walker as shown in the illustration * First predict which leg settings A, B or C is fastest for climbing over hills? Then test which in fact is the fastest hill climber.     Figure 6.4: Climb the hill. |