

Personal Exploration Rover
Reference Manual For Educators

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PER Reference Manual For Educators

This manual is designed to guide the educator through the initial setup and development of the Personal Exploration Rover (PER) and its Iconic Interface.

Entering Commands

The PER Iconic Interface allows you to give the rover a sequence of commands. A command contains a number of actions which the Rover should perform at the same time. There are three different types of actions:

- *Head actions*, which tell the robot to turn or tilt its head.
- *Body actions*, which tell the robot to travel forward or backward

Adding A Command



To add a command, click on the Add Command button, then click on the Sequence panel. A new, blank Rover icon will appear at your pointer location. By using the Add Command button, you can insert new commands into the middle of the sequence, or append them to the end, depending on where you click.

Moving A Command

To move an existing command to the left or right, select a command with the pointer, then use the arrows on either side of the Command panel. The command will move one step to the left or right.

Deleting A Command



To delete a command, select it in the sequence panel and click on the Delete Command button. The command will be removed from the sequence.

Head Actions



Turning The Head Left and Right



To command the PER to turn its head left or right, drag either the left or right head turn action onto a command in the sequence panel. A dialog box will appear asking how many degrees you would like the head to turn. Enter the number of degrees and click “OK”.

Head turn degrees are in absolute degrees from straight ahead.

Tilting The Head Up and Down



To command the Rover to tilt its head up or down, drag either the up or down head tile action onto a command in the sequence panel. A dialog box will appear asking how many degrees you would like to tilt the head. Degrees are absolute, measured from head parallel to the floor.

Taking A Picture



To command the Rover to take a picture, drag the camera icon onto an existing command in the sequence. The Rover will take a picture at the given point in the sequence. The actual photo will appear in the window on the right-hand side of the screen.

Body Actions



Body actions tell the robot where and how far to go. As the user enters body actions onto the sequence, the Preview Map will update to indicate the path which the Rover will take.

Moving Forward

To instruct the Rover to move forward, drag the Move Forward icon onto an existing command. A dialog box will appear asking for the distance you would like the rover to travel, in inches or centimeters as appropriate. Enter the distance you would like to travel.

After you enter a Moving Forward command, a line will appear on the Map Preview display indicating the length of the Move Forward command.

Turning



To instruct the Rover to turn, click on the left or right-hand turn icons.

Turning Around

The Turn Around action makes the robot rotate 180 degrees to the right. It is identical to entering 180 degrees into the right hand turn signal.

Command Execution



Once you have entered a sequence into the Iconic Interface, we will need to play it on the Rover. Playback is accomplished with the Play button.

Playing A Sequence Once

The normal playback button plays the sequence back a single time.

Playing A Sequence Endlessly

The cycled playback button plays the sequence over and over again, without stopping.

Saving and Loading Sequences

Under the File menu, you will find “Save” and “Save As” items. Choose these to save a sequence from the Sequence Panel. Choose “Open” to open a previously-saved sequence.