 **Dash**: Forces and their Effects

### (303-16) demonstrate the use of rollers, wheels, and axles in moving objects

### Description:

Students will program Dash to pull a constructed form across a distance.

### Materials:

Dash robot, iPad, small box or container to be used as a trailer, weight, string, various items to alter friction (wheels, axles, rollers, cylinders, lubricants, etc.), stopwatch and paper for recording observations.

### Prep:

Set out all items for student exploration.

### Activity:

Students will construct and connect the trailer structure to Dash. The students will decide on what weight to put in the trailer. Dash will pull the trailer a distance of 50cm. Students must use the stopwatch to measure how long it takes Dash to pull the trailer.

Students will explore using a variety of items (wheels, axles, rollers, etc.) to attempt to reduce friction while pulling the trailer the 50cm distance. Students will measure the time Dash takes to pull the trailer with each friction-reducing attempt and record the data.