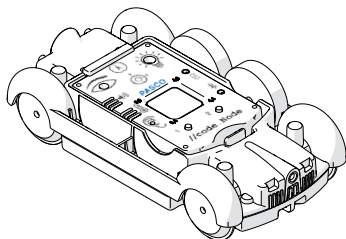


# //code.Node Cart | PS-3235

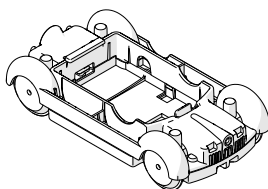
**PASCO**

Quick Start Guide  
012-16934A



**Note:** Additional information on how to use the //code.Node Cart can be found in the SPARKvue and PASCO Capstone Help.

## What's Included



//code.Node Cart

### Required Equipment

- //code.Node (PS-3231)

## Experiments


Print-ready experiment worksheets are available to download from the PASCO website. Go to [pasco.com/freelabs](https://www.pasco.com/freelabs) and enter **PS-3235** in the **Part No.** field to access all experiments related to the //code.Node Cart.

## Software Help

Additional information on how to use the //code.Node Cart can be found in the PASCO Capstone and SPARKvue Help.

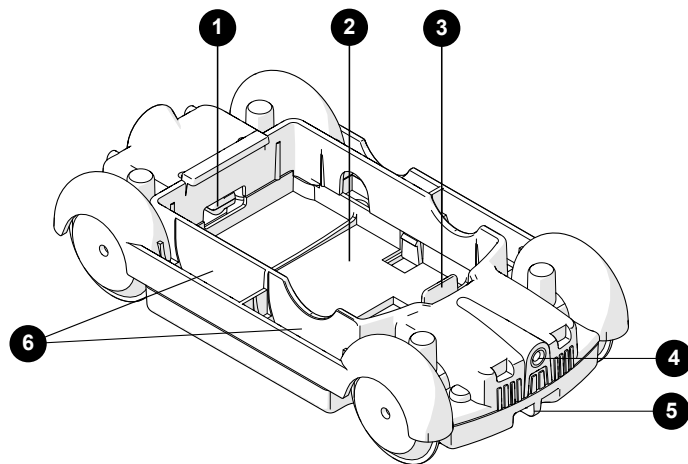
 SPARKvue

Click  then select Help.

 PASCO Capstone

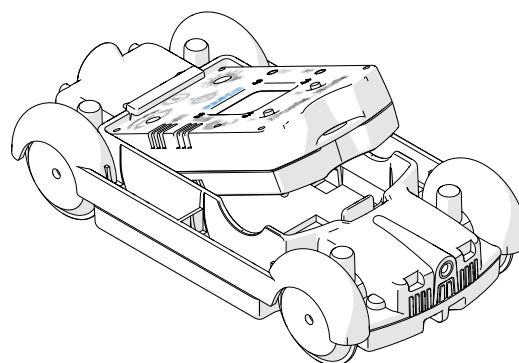
In the menu bar, click Help then select PASCO Capstone Help.

## Features



- 1 Axle Magnet**  
For measuring the cart's motion using the //code.Node Magnetic Field Sensor.
- 2 //code.Node Bay**  
For inserting a //code.Node.
- 3 Release Tab**  
For releasing the //code.Node from the cart.
- 4 Threaded Hole**  
For attaching bumpers from the ME-9884 Bumper Accessory Set.
- 5 String Tie (front and rear)**  
For attaching a string to pull the cart.
- 6 Mass Bay (4 total)**  
For inserting masses from the ME-8984 50-g Mass Set.

## Insert a //code.Node



1. Insert the top side of the //code.Node into the cart bay face up.
2. Press down on the bottom side of the //code.Node until it snaps in place.

To remove the //code.Node from the cart, gently pull back the release tab on the cart and push the //code.Node out of the cart using the hole on the bottom of the cart.

## Set Up Data Collection


Measure the position and velocity of the `//code.Node` Cart with a `//code.Node` in SPARKvue or Capstone .

### SPARKvue

1. Insert a `//code.Node` into the cart.
2. Connect the `//code.Node` to SPARKvue.
3. Under `//code.Node` Motion Sensor select Cart Position and Cart Velocity.
4. Under Templates select Graph.
5. Click Start to begin data collection.

### Capstone

1. Insert a `//code.Node` into the cart.
2. Connect the `//code.Node` to Capstone.
3. Click Data Summary then click and drag Cart Position to Graph in the Displays palette.
4. Click and drag Cart Velocity to the graph display.
5. Click Record to begin data collection.

 **Note:** Cart Position and Velocity data will not immediately appear after beginning data collection. See [Data Collection Notes](#) for more information.

## Data Collection Notes

### How the Cart Records Data

The `//code.Node` records Cart Position and Cart Velocity data by monitoring the magnetic field of the axle magnet on the `//code.Node` cart. One data point is recorded for every quarter-turn of the axle. When the axle is not moving, one data point is recorded every second. As a consequence, data is *not* collected at a constant rate like the other measurements on the `//code.Node`.

### Maximum Cart Velocity

Due to how the cart records motion data, Cart Position and Cart Velocity data may become noisy as the cart increases velocity. Increase the sample rate of the `//code.Node` Motion Sensor to decrease the noise.

## Accessories

### Light Spring Bumper (ME-9275)

Attach the ME-9275 Light Spring Bumper to the threaded hole on the cart to perform collision experiments and launch the cart.

### 50-g Mass Set (ME-8984)

The 50-g Mass Set includes six 50-g masses. Insert up to four masses into the `//code.Node` Cart mass bays to change the mass of the cart.

## Technical Support

Contact PASCO Technical Support for assistance with this or any other PASCO product.

Address	PASCO scientific 10101 Foothills Blvd. Roseville, CA 95747-7100
Phone	1-800-772-8700 (USA) 1-916-462-8384 (International)
Chat	<a href="http://www.pasco.com">www.pasco.com</a>
email	<a href="mailto:support@pasco.com">support@pasco.com</a>

## Regulatory Information

### Warranty, Copyright, and Trademarks

#### Limited Warranty

For a description of the product warranty, see the Warranty and Returns page at [www.pasco.com/legal](http://www.pasco.com/legal).

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