Science Olympiad 2013-2014 Season
Magnetic Levitation Checklist / Data Sheet

Version 1.0

Team #: _____ **Tier: _____**

Team Name:

_____

Competitor Names:

_____

_____

General Requirements

- € 1. Competitors construct up to 2 vehicles

Construction Section Requirements

- € 2.b. Vehicle(s) and material impounded
- € 2.c. Reference materials secured in 3 ring binder
- € 2.d. Competitors must wear eye protection during set up and testing of the vehicles.
- € 3.b. Vehicle(s) length is >=15.0 cm and <=22.0 cm, and height <20.0 cm
- € 3.b. Vehicle(s) length doesn't change during run
- € 3.c. Vehicle(s) mass is >=250.0 g and <=2000.0 g
- € 3.d. Vehicle(s) fit on standard track if being used
- € 3.e. Vehicle(s), except for propeller/shield, doesn't extend beyond track side rails
- € 3.f. Vehicle(s) has 1/4" dowel < 5.0 cm from front edge with top >=30.0cm and <= 35.0cm above bottom
- € 3.f. Dowel(s) has mounted rigid flag facing rear sized at least 5.0 cm by 5.0 cm
- € 3.g. Only commercial batteries <= 9.0 V used. No other energy used or stored.
- € 3.g. No circuit exceeds 9.0 V
- € 3.h. Vehicle(s) has 1 propeller and 1 motor
- € 3.h Propeller(s) diameter <= 14.0 cm cross section and shielded from contact with a1/4" dowel
- € 3.i No brushless motors or I.C.s
- € 3.j. No rare earth magnets used
- € 3.j. Vehicle(s) able to travel either direction on track
- € 3.k. Vehicle(s) are levitated
- € 3.l. Vehicle(s) has electric switch to start and automatic (non-remote controlled) stopping system

Track Section Requirements

- € 4.a. Track is >= 119.0 cm long, between 2.0" and 3.0" inside width
- € 4.c. Height of inside rails is between 2.00 cm and 5.00 cm from tops of magnets on base

Competition Section Requirements

- € 5.b.v. Team doesn't touch vehicle after motor is on

Part 2: Written Test

Exam Score (50 pts max) _____

Vehicle Data

Mass Vehicle 1 (250.0 – 2000.0 g)	_____
Mass Vehicle 2 (250.0 – 2000.0 g)	_____

Successful Run 1

Vehicle # used	_____
Timer #1 (nearest 0.1 s)	_____
Timer #2 (nearest 0.1 s)	_____
Timer #3 (nearest 0.1 s)	_____
Run Time (Middle value of above)	_____

Successful Run 2

Vehicle # used	_____
Timer #1 (nearest 0.1 s)	_____
Timer #2 (nearest 0.1 s)	_____
Timer #3 (nearest 0.1 s)	_____
Run Time (Middle value of above)	_____

Teams with Unsuccessful Runs

Missed impound?	_____
Vehicle didn't move or attempt run?	_____
Vehicle moved partially?	_____