

Thermodynamics

Checklist for Division B & C

Science Olympiad 2018-2019 Season
Version 1.0

Team Number: _____ Division: _____

Team Name: _____

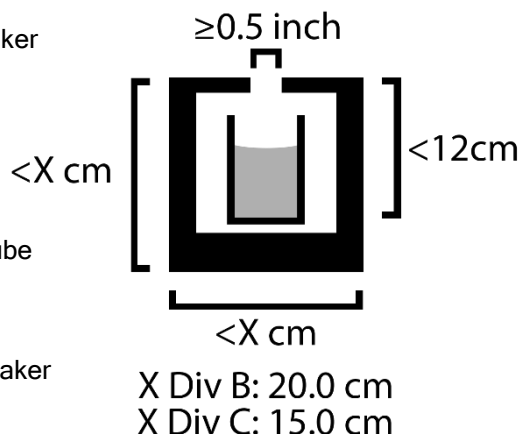
Student Names: _____

Impound Checklist

- 1 One insulated device (ideally labeled with team name and number)
- 3.f Device not significantly different from room temp
- 2.c One unaltered (glass or plastic) standard 250 mL beaker
- 2.c Device diagram, graphs and/or tables for scoring

Construction Checklist

- 3.a No asbestos, mineral wool, fiberglass, commercial Thermos/cooler/vacuum in device
- 3.b Device fits within 20.0 cm (Div B) / 15.0 cm (Div C) cube
- 3.c Beaker can be inserted/removed from device
- 3.d Device has ≥ 0.5 inch diameter hole above beaker
- 3.d Top of hole < 12 cm above inside bottom surface of beaker
- 3.e Device has no energy sources
- 2.g Participants able to answer questions regarding device



Device Testing

- 2.f Competitors wear eye protection while setting up device and receiving source water
- 3.d With exception of cotton ball, hole remains open and unobstructed during the competition

Starting Data - Recorded when teams receive water

_____	_____	_____
Start Time	Source Water Temp ($^{\circ}$ C)	Room Temp ($^{\circ}$ C)

Prediction

Final Temp Prediction ($^{\circ}$ C)

Ending Data - Recorded at and of cooling period

_____	_____
End Time	Final Internal Temp ($^{\circ}$ C)

Verification - Initial to verify device testing data

INITIALS	INITIALS
Competitor(s)	Supervisor

Penalties - No penalties unless otherwise noted

<input type="checkbox"/> 5.e Competition Violation(s)	<input type="checkbox"/> 5.g No Device	<input type="checkbox"/> 5.g DQ for Unsafe operation
<input type="checkbox"/> 5.f Construction Violation(s) Corrected	<input type="checkbox"/> 5.f Missed Impound	
Rationale: _____		Supervisor Initials: _____

Graphs / Tables - Each item can get up to two points

5.d.i	_____ / 2	Data spans at least one variable listed in 4.l.a
5.d.ii	_____ / 2	At least 10 data points per data series
5.d.iii	_____ / 2	Proper labeling (e.g. title, team name, units)
5.d.iv	_____ / 2	0.5pts for each graph / table (up to 2 points total)
5.d.v	_____ / 2	Labeled device picture / diagram

Written Exam

- 2.a Reference materials secured in 3 ring binder
- 2.b Competitors bring up to 2 calculators

Exam Score