MCAS High School Introductory Physics

Sample Blank Supplemental Reference Sheet
for Students with Accommodation A9

INSTRUCTIONS:

The following sample supplemental reference sheet is ONLY for students who have accommodation A9 listed in their IEP or 504 plan.

Before testing:

Schools should print out the following pages (or a supplemental reference sheet that has been submitted to and approved by the Department) and distribute to students who have accommodation A9 so that students can practice using the reference sheet. Schools should also remind students that during testing they may only use a supplemental reference sheet that has not yet been filled in.

During testing:

At the start of each test session, test administrators should check that that they are only providing supplemental reference sheets that have not already been filled in, and that they are providing them only to students who have accommodation A9 in their IEP or 504 plan.

Test administrators should remind students that they may not use any sheets that were filled in previously, nor any other reference materials or notes. Results **may be invalidated** for students who use a supplemental reference sheet that has already been filled in.

MCAS High School Introductory Physics

Sample Blank Supplemental Reference Sheet
for Students with Accommodation A9

Note: Students may ONLY be provided with a blank reference sheet to use during testing.

Problem Solving Steps

1. Unknown: What do you want to find?
2. Given: What do you know?
3. Relationship / equation / formula
4. Substitute givens into equation
5. Solve: Rearrange equation if needed
6. Answer: Include units

Nuclear Processes

Nuclear Fission: nuclei of atoms _____; Nuclear Fusion: nuclei of atoms _____

Motion

$v_{average} = \frac{\Delta x}{\Delta t}$ average velocity = _____

$a_{average} = \frac{\Delta v}{\Delta t}$ average acceleration = _____

Speeding up: Direction of acceleration is _____ the direction of velocity.

Slowing down: Direction of acceleration is _____ the direction of velocity.

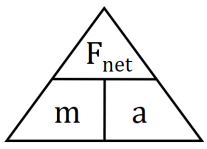
a = acceleration Δt = change in time

v = velocity v_i = initial velocity v_f = final velocity

Δx = change in position (displacement)

Force

$F_{net} = ma$



$F_g = mg$

F_{net} = _____

a = acceleration

F_{net} = net force

F_g = gravitational force/weight

m = mass

g ≈ 10 m/s² on Earth

The force exerted by object A on B is _____ to the force exerted by object ____ on ____.

As mass increases, inertia _____.

Momentum

$$p = mv$$

Before	After

$$F\Delta t = \Delta p$$

Energy

$$KE = \frac{1}{2}mv^2$$

$$\Delta PE = mg\Delta h$$

$$W = \Delta E \qquad W = Fd$$

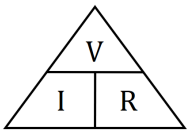
$$Q = mc\Delta T \qquad \Delta T = T_f - T_i$$

Higher KE of the molecules = higher _____

c = specific heat
d = distance
ΔE = change in energy
F = force
g ≈ 10 m/s^2 on Earth
Δh = change in height
KE = kinetic energy
m = mass
ΔPE = change in gravitational potential energy
Q = heat added or removed
ΔT = change in temperature
v = velocity/speed
W = work

Electricity and Magnetism

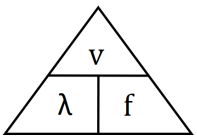
$$V = IR$$



I = current
R = resistance
V = potential difference (voltage)

Series Circuit	Parallel Circuit
V _____	V _____
I _____	I _____
R _____	R _____

Waves

$v = \lambda f$		f = frequency λ = wavelength v = velocity

Mechanical waves travel fastest through _____, then _____, then _____

Electromagnetic waves travel faster through _____ than _____.

Transverse waves move _____, longitudinal waves move _____

Science Practices

What is the Claim?

What is the Evidence?

What is the Reasoning?

Was data asked for in the question? Did you include it in your answer?

If asked to provide a question, is it a testable question?

* If this sample reference sheet is used as is, or if text is removed, additional Department approval is NOT necessary. If information is added, or if a different reference sheet is created, the reference sheet must be submitted for Department approval.