Mass & Force

Worksheet (Grade Level) Name _____

Question 1

What is mass, and how is it different from weight?

Question 2

What units do we use to measure mass, and when would we use grams or kilograms?

Question 3

How does increasing the mass of an object affect the force needed to move it?

Question 4

If two objects are dropped at the same time, one heavier and one lighter, will they hit the ground together? Why or why not?

Question 5

Why is it harder to push a full shopping trolley than an empty one?

Question 6

How would the distance a cube travels change if you were to perform the same experiment on Mars instead of Earth?What happens to the distance an object travels when you launch it with the same force but give it more mass?

Question 7

How does mass relate to gravitational force?

Question 8

Can two objects with the same size have different masses? Give an example.

Mass & Force

Worksheet (Higher Level) Name _____

Question 1

Explain the difference between mass and weight, including how each is affected by gravitational forces.

Question 2

What are the standard units for measuring mass, and why is it important to use consistent units in scientific experiments?

Question 3

Describe how an increase in an object's mass influences the net force required to change its velocity, referencing Newton's Second Law.

Question 4

When two objects of different masses are dropped simultaneously in a vacuum, explain why they accelerate at the same rate despite their mass differences.

Question 5

Analyze why an object with greater mass requires more force to initiate and maintain motion compared to one with less mass.

Question 6

Predict and justify how the range of a projectile changes when its mass is increased but the applied force remains constant.

Question 7

Discuss the relationship between mass and gravitational force, including how mass affects weight and free-fall acceleration under different gravitational conditions.

Question 8

Provide examples of objects with identical volumes but differing masses, and explain how material density influences this difference.

Mass & Force

Worksheet (Lower Level) Name _____

Question 1

What is mass? How is it different from how heavy something feels?

Question 2

What do we use to measure mass? When do we use grams or kilograms?

Question 3

If something is heavier, does it take more or less work to push it?

Question 4

If you drop a big rock and a small rock at the same time, which one hits the ground first? Why?

Question 5

Why is it harder to push a full box than an empty box?

Question 6

What happens if you throw a heavy ball and a light ball with the same push? Which one goes farther?

Question 7

What does mass have to do with how strong gravity pulls on something?

Question 8

Can two things be the same size but weigh different amounts? Can you give an example?