

9th Grade Science Choice Board: Choose one for each day NTI work needs to be completed.

Assignment Title	Assignment Description
Scientific Method Poster	Create a poster that illustrates the steps of the scientific method.
Graphing Data	Use a dataset to create a bar graph and a line graph, explaining which is more appropriate for the data.
Metric Conversion Worksheet	Complete a worksheet converting various measurements between metric units.
Acceleration Analysis	Write a short essay explaining how acceleration affects motion using real-life examples.
Momentum Calculation	Solve problems involving momentum, using the formula $p = mv$.
Force and Motion Presentation	Prepare a presentation that explains Newton's Laws of Motion with examples.
Gravity and Free Fall Report	Research and write a report on gravity's effect on free-falling objects, including terminal velocity.
Friction in Daily Life	Create a visual infographic showing different types of friction and their effects in daily life.
Newton's Laws of Motion Summary	Summarize each of Newton's three laws of motion with examples that can be written or drawn.
Exploring Forces	Create a comic strip that illustrates the effects of balanced and unbalanced forces on motion.

Metric Conversion Mastery Worksheet

Fill in the Blank: Fill in the blank with the correct words.

1. 1 kilometer is equal to _____ meters.
2. To convert 2500 milliliters to liters, you divide by _____.
3. The prefix "centi-" means _____ of a unit.
4. 1 kilogram is _____ grams.
5. To change 0.5 meters to centimeters, multiply by _____.

Word Bank: 1000, 100, 1000, 0.01, 2500

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which of the following is equal to 5,000 grams?
 - ☐ a) 0.5 kilograms
 - ☐ b) 5 kilograms
 - ☐ c) 50 kilograms
 - ☐ d) 500 kilograms
2. How many centimeters are in 2.5 meters?
 - ☐ a) 25
 - ☐ b) 2.5
 - ☐ c) 250
 - ☐ d) 0.25
3. What is 1,200 milliliters in liters?
 - ☐ a) 0.12 L
 - ☐ b) 1.2 L
 - ☐ c) 12 L
 - ☐ d) 120 L
4. The prefix "kilo-" represents which value?
 - ☐ a) 10
 - ☐ b) 100
 - ☐ c) 0.01
 - ☐ d) 1,000
5. If a pencil is 19 centimeters long, how many millimeters is it?
 - ☐ a) 1.9 mm
 - ☐ b) 19 mm
 - ☐ c) 190 mm
 - ☐ d) 1900 mm
 - ☐ e) _____

Momentum Problems Worksheet

Fill in the Blank: Fill in the blank with the correct words.

1. Momentum is calculated by multiplying an object's mass by its _____.
 2. The unit for momentum is _____.
 3. The law that states that the total momentum in a system remains constant if no external forces act on it is called the law of _____ of momentum.
 4. If a moving car hits a stationary car, momentum can be _____ from one car to the other.
 5. An object at rest has _____ momentum.
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Word Bank:

velocity, transferred, zero, conservation, kilogram-meter per second

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which of the following will have the greatest momentum?
 - a) A 1 kg toy car moving at 10 m/s
 - b) A 2 kg bowling ball moving at 5 m/s
 - c) A 0.5 kg tennis ball moving at 20 m/s
 - d) A 3 kg rock sitting still
 2. If the total momentum before a collision is 8 kg·m/s, what is the total momentum after the collision (if no external forces act)?
 - a) 0 kg·m/s
 - b) 8 kg·m/s
 - c) 4 kg·m/s
 - d) 16 kg·m/s
 3. In the equation $p = m \times v$, what does the letter p stand for?
 - a) Power
 - b) Pressure
 - c) Position
 - d) Momentum
 4. If a 4 kg object is moving at 0 m/s, what is its momentum?
 - a) 0 kg·m/s
 - b) 4 kg·m/s
 - c) 8 kg·m/s
 - d) 16 kg·m/s
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