

Name: _____
Mr. Willis
Conceptual Physics: _____
Date: _____

Unit III
Forces and Motion (Newton's Laws)
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Unit Syllabus and Portfolio Directions

Objective: Assemble the assignments for the units into a booklet. Then use the booklet to complete review questions and prepare for the test.

The following items should be put in the following order in the portfolio:

- ___ Unit Syllabus and Portfolio Directions (this sheet)
- ___ Vocabulary Review Sheet
- ___ Classwork/Daily Log
- ___ Video: Motion, Force and Gravity
- ___ Reading Assignment (Chapter 12, sec 1, 2, 3 & 4)
- ___ Math Review Activity
- ___ A Crash Course in Safety
- ___ Gravity – A Familiar Force
- ___ Exploration Lab – Investigating a Balloon Jet
- ___ Unit III Study Guide

Portfolio Grade

- | | | | |
|------------|-------------|-------|--|
| cover | (out of 5) | _____ | (Neatness, effort, and color are important.) |
| objectives | (out of 5) | _____ | |
| concepts | (out of 5) | _____ | (You may use words, symbols, diagrams on each.) |
| contents | (out of 5) | _____ | (All assignments must be included and in order.) |
| total | (out of 20) | _____ | |

Test Grade

The Front Cover

Write the unit title on the cover. "Unit III – Force and Motion (Newton's Laws)"
Decorate the front cover with drawings of concepts from the chapter.

The Inside Front Cover

- Write "Objectives" at the top of the page. List the following unit objectives:
- State Newton's first law of motion (the law of inertia) and describe inertia.
 - Identify natural forces such as gravity, friction, nuclear forces and electromagnetic forces.
 - Explain how forces affect the motion of an object.
 - Calculate force using Newton's second law ($F_{\text{net}} = m \cdot a$).
 - Compare and contrast momentum and inertia.
 - Calculate momentum (momentum = $m \cdot v$) and explain the Law of Conservation of Momentum.
 - Describe the effect of action/reaction forces (Newton's third law).
 - Describe projectile motion and show how gravity affects the motion of projectiles.
 - Distinguish between weight and mass and show how weight can be calculated ($w = g \cdot m$).

Inside Back Cover

Write "Concepts" at the top of the page. Divide the page into nine squares.
Explain the answers to the unit objectives with words and diagrams.

Back Cover Write your name – last name, first name and class in the lower right hand corner.