

Flight-Testing Newton's Laws			
2004 Science			
Standard Course of Study			
North Carolina Science			
Grades 9-12 (Physical Science)			
Activity/Lesson	State	Standards	
Session-10 (1-5)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-10 (1-5)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-10 (1-5)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-1 (1-17)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-1 (1-17)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-1 (1-17)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-2 (1-10)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-2 (1-10)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-2 (1-10)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-3 (1-6)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-3 (1-6)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-3 (1-6)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-5 (1-6)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.

Session-5 (1-6)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-5 (1-6)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-6 (1-8)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-6 (1-8)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-6 (1-8)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-7 (1-5)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-7 (1-5)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-7 (1-5)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-8 (1-9)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-8 (1-9)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-8 (1-9)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Session-9 (1-7)	NC	SCI.9-12.PS.2.02.a	In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force.
Session-9 (1-7)	NC	SCI.9-12.PS.2.02.b	Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass.
Session-9 (1-7)	NC	SCI.9-12.PS.2.02.c	Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.
Flight-Testing Newton's Laws			
2004 Science			
Standard Course of Study			
North Carolina Science			
Grades 9-12 (Physics)			
Activity/Lesson	State	Standards	

Session-10 (1-5)	NC	SCI.9-12.PH.4.01	Determine that an object will continue in its state of motion unless acted upon by a net outside force (Newton's First Law of Motion, The Law of Inertia).
Session-10 (1-5)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-10 (1-5)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-10 (1-5)	NC	SCI.9-12.PH.4.07	Assess and calculate the nature and magnitude of gravitational forces (Newton's Law of Universal Gravitation).
Session-1 (1-17)	NC	SCI.9-12.PH.3.04	Evaluate, measure, and analyze circular motion.
Session-1 (1-17)	NC	SCI.9-12.PH.4.01	Determine that an object will continue in its state of motion unless acted upon by a net outside force (Newton's First Law of Motion, The Law of Inertia).
Session-1 (1-17)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-1 (1-17)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-1 (1-17)	NC	SCI.9-12.PH.4.07	Assess and calculate the nature and magnitude of gravitational forces (Newton's Law of Universal Gravitation).
Session-2 (1-10)	NC	SCI.9-12.PH.4.01	Determine that an object will continue in its state of motion unless acted upon by a net outside force (Newton's First Law of Motion, The Law of Inertia).
Session-2 (1-10)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-2 (1-10)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-2 (1-10)	NC	SCI.9-12.PH.4.07	Assess and calculate the nature and magnitude of gravitational forces (Newton's Law of Universal Gravitation).
Session-3 (1-6)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).

Session-3 (1-6)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-5 (1-6)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-5 (1-6)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-6 (1-8)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-6 (1-8)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-7 (1-5)	NC	SCI.9-12.PH.4.01	Determine that an object will continue in its state of motion unless acted upon by a net outside force (Newton's First Law of Motion, The Law of Inertia).
Session-7 (1-5)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-7 (1-5)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-7 (1-5)	NC	SCI.9-12.PH.4.07	Assess and calculate the nature and magnitude of gravitational forces (Newton's Law of Universal Gravitation).
Session-8 (1-9)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-8 (1-9)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Session-9 (1-7)	NC	SCI.9-12.PH.4.03	Assess, measure, and calculate the relationship among the force acting on a body, the mass of the body, and the nature of the acceleration produced (Newton's Second Law of Motion).
Session-9 (1-7)	NC	SCI.9-12.PH.4.04	Analyze and mathematically describe forces as interactions between bodies (Newton's Third Law of Motion).
Flight-Testing Newton's Laws			

**2004 Science
Standard Course of Study**

North Carolina Science			
Grades 9-12 (AP Physics B)			
Activity/Lesson	State	Standards	
Session-10 (1-5)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-10 (1-5)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
Session-10 (1-5)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
Session-10 (1-5)	NC	SCI.9-12.PB.2.02.b	Investigate, measure and analyze Newton's laws of motion: Dynamics of a single particle (second law).
Session-10 (1-5)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
Session-1 (1-17)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-1 (1-17)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
Session-1 (1-17)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
Session-1 (1-17)	NC	SCI.9-12.PB.2.02.b	Investigate, measure and analyze Newton's laws of motion: Dynamics of a single particle (second law).
Session-1 (1-17)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
Session-2 (1-10)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
Session-2 (1-10)	NC	SCI.9-12.PB.2.02.b	Investigate, measure and analyze Newton's laws of motion: Dynamics of a single particle (second law).
Session-2 (1-10)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
Session-3 (1-6)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-3 (1-6)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
Session-3 (1-6)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
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Session-3 (1-6)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
Session-5 (1-6)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-5 (1-6)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.

Session-5 (1-6)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
Session-5 (1-6)	NC	SCI.9-12.PB.2.02.b	Investigate, measure and analyze Newton's laws of motion: Dynamics of a single particle (second law).
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Session-6 (1-8)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-6 (1-8)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
Session-6 (1-8)	NC	SCI.9-12.PB.2.02.a	Investigate, measure and analyze Newton's laws of motion: Static equilibrium (first law).
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Session-6 (1-8)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
Session-7 (1-5)	NC	SCI.9-12.PB.2.01.b	Relate position, velocity, and acceleration of a particle for motion.
Session-7 (1-5)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
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Session-8 (1-9)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
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Session-9 (1-7)	NC	SCI.9-12.PB.2.01.f	Relate a particle's radius, speed, velocity, and acceleration in uniform circular motion.
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Session-9 (1-7)	NC	SCI.9-12.PB.2.02.e	Investigate, measure and analyze Newton's laws of motion: Action and reaction forces on two or more bodies (third law).
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