Unit -D 2 Overview - Forces

|  |  |
| --- | --- |
| **Main Ideas** | **Essential Questions** |
| 1. A force is a push or pull. 2. Unbalanced forces change motion. 3. Newton’s laws of motion link the change in an object’s motion with the forces acting on it. 4. Newton’s laws can be used to explain everyday events, such as falling and collisions. | 1. How are force and motion related? 2. How is the net force on an object determined? 3. Why is there friction between objects? 4. What is the difference between mass and weight? 5. What is inertia and how does it relate to Newton’s first law of motion? 6. How can an object’s acceleration be calculated using Newton’s second law of motion? 7. How does Newton’s third law explain how the forces between interacting objects are related? 8. How does Newton’s first law explain what happens in a car crash? 9. How does Newton’s second law explain air resistance? |
| **Skills** | |
| 1. **Explain** how force and motion are related. 2. **Describe** the effect of friction on the motion of objects. 3. **Describe** gravitational force. 4. **Distinguish** between mass and weight. 5. **Describe** what inertia is and how it is related to Newton’s first law of motion. 6. **Define** Newton’s second law of motion. 7. **State** Newton’s third law of motion. 8. **Identify** action and reaction forces. 9. **Describe** the forces and motion that are present in a car crash. | |

**STANDARDS**

**PSc.1.2 Understand the relationship between forces and motion.**

PSc.1.2.1 Explain how gravitational force affects the weight of an object and the velocity of an object in freefall.

PSc.1.2.2 Classify frictional forces into one of four types: static, sliding, rolling, and fluid.

PSc.1.2.3 Explain forces using Newton’s three laws of motion.

|  |  |
| --- | --- |
| **KEY VOCABULARY** | **Review Resources** |
| 1. friction, air resistance, gravity, mass, weight, centripetal force 2. force, net force, balanced forces, unbalanced forces 3. Newton’s first law of motion, inertia, Newton’s second law of motion, Newton’s third law of motion | 1. Key Words - Forces  2. 2. Unit Review - Forces  3. 3. Ppoint - Forces  4. 4. Class Worksheets + Lab Documents |