**The Laws of Sport**

**Name:** Click or tap here to enter text.

**Introduction**

Collisions occur around us all the time. Some of them are big and dangerous. Others are small and insignificant. A collision is when two or more things interact and cause a change in direction of motion.
In sports, we see collisions everywhere. Whether it is a footy bump from player to player, a boxing glove to an opponent’s body or a driver striking a stationary golf ball. To understand why objects behave in certain ways, we need to know about some important principles of physics.

**Instructions**These tasks are designed to increase and apply your knowledge of forces and Newton’s laws, and their effects on sports and its participants.

1. Complete the Newton’s laws table.
2. Identify Newton’s Laws in multiple sporting examples.
3. Learn about Sir Isaac Newton.
4. Complete the experiment activity.
5. Save and submit completed document to teacher.

**Task 1**
Complete the table below using your knowledge of Newton’s laws.

|  |  |  |
| --- | --- | --- |
| **Newton’s Law** | **Definition** | **Sporting Example** |
| 1st- Law of Choose an item. | Choose an item. | Enter text. |
| 2nd- Law of Choose an item. | Choose an item. | Enter text. |
| 3rd- Law of Choose an item. | Choose an item. | Enter text. |

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**Task 2**
Let’s take a look at some sporting examples and what types of forces are in action! Your task is to identify at least one of Newton’s laws displayed and relate it to the sporting example.
To get started, read the soccer example below:



**Newton’s Laws in action:**
Click or tap here to enter text.

**Newton’s Laws in action:**
**Law of inertia-** The soccer ball would have remained at rest until it was acted upon by an external force (foot). Also, the ball would continue to travel at a constant speed and direction unless acted on by external forces (air resistance, gravity or rotation)
**Law of acceleration-** The force of the players foot hitting the soccer ball will determine how fast the ball accelerates off the players boot. If the ball is wet and heavy, more force would be required to accelerate the ball more.



**Newton’s Laws in action:**
Click or tap here to enter text.

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**Task 3**

Let’s learn some more about the mathematician behind the laws of motion, Sir Isaac Newton.

**What year was Newton born and where? Insert a photo of Newton**



Click or tap here to enter text.

**How old would Newton be today?**

Click or tap here to enter text.

**Fill in the missing sections in these Newton quotes.**

* “No great discovery was ever made without a boldEnter text.”
* “If I have seen further it is by Enter text. on the shoulders of Giants.”
* “What we know is a Enter text., what we don't know is an Enter text..”

**True or False?**

Sir Isaac Newton invented the reflective telescope. Choose an item.

Sir Isaac Newton invented gravity. Choose an item.

Newton’s four laws are considered one of the greatest achievements in physics. Choose an item.

Newton discovered that white light is a composite of all colours of the spectrum.Choose an item.

**Experiment activity - Coin on a Card Experiment**



**Method:**
1. Put a playing card on top of the plastic cup
2. Put a coin on top of the card
3. With a sharp flick, hit the card out from under the coin! Or pull it really
 quickly toward you.
4. The coin will (if you are quick enough) drop into the cup.

**Explanation:**
The coin has inertia, meaning it really wants to stay in one place. If you move the card slowly, it isn’t fast enough to overcome that force. If you flick it quickly, the coin stays in one place and then drops into the cup. **An object at rest will remain at rest.**