Science behind Taekwondo

Theory of Power – the 6 Components:

1. Mass,
2. Acceleration,
3. Concentration of Force,
4. Reaction Force,
5. Breath Control,
6. Equilibrium (Balance)

<u>Different Motions used in Taekwondo</u>

Normal Motion: requires a breath in, followed by a breath out when executing the technique, then a slight pause before executing the next technique.

Continuous Motion: is used when combining several hand techniques without pausing (still with one breath in and out with each technique performed).

Fast Motion: can also be used when combining several techniques but in this case, one breath is exhaled proportionally between techniques.

Slow Motion: is used solely in patterns to demonstrate the theory of power, speed being the only element that is omitted.

Connecting Motion: is used when a no-tension-on-impact technique is connected to a tension on impact technique. Hooking blocks are no tension on impact techniques and executed by inhaling through the whole block and then exhaling before moving on. In pattern Yul-Gok, a hooking block is connected to an obverse punch which is executed by inhaling on the block and exhaling on the punch.

Stamping Motion: sometimes used when attacking and also when blocking against a powerful attack, this increases the power and effectiveness of either the block or attack. An example of this is when it is used in pattern Toi-Gye when performing the W-shape blocks in sitting stance. The stamping motion is used on the feet as you create the sitting stance.

<u>Differences between punches, strikes and thrusts</u>

Punches and strikes can be used against hard or soft targets, the aim being to break, pierce or penetrate the body part being targeted. This is achieved by focusing the breathing and other elements of power to the end of the technique. Both techniques accelerate in a relaxed manner throughout the execution resulting in a dynamic twisting motion, normally between 90 and 180 degrees depending on the technique being used and its starting position.

Thrusts are only used against soft targets. This technique reaches the target under tension and at a constant after its initial acceleration, exhaling throughout. This means they effective anywhere on the line of attack.