



Name: \_\_\_\_\_

Class: \_\_\_\_\_

## Newton's Laws of Motion Worksheet

Isaac Newton (1642-1727) was a scientist who discovered three laws of motion.

The first law, known as the Law of Inertia, states that an object at rest stays at rest and an object in uniform motion stays in uniform motion unless acted upon by an external force.

The second law, in simple terms, states that Force is equal to Mass x Acceleration, ie  $F = ma$ .

The third law states for every action there is an equal and opposite reaction.

Find examples for each of these laws in sport.

First law:

Second law:

Third law:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Demonstrate the third law.

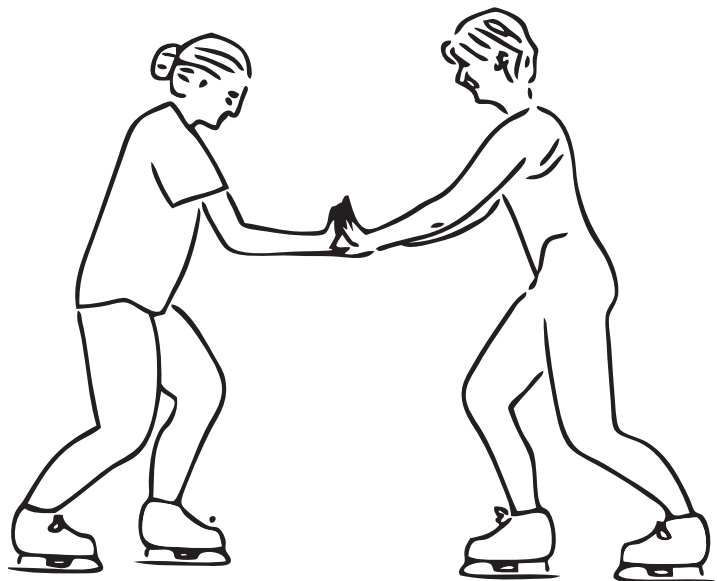
What you need

- Two rulers
- Six 20-cent coins
- Masking tape

What to do

1. Lay the rulers parallel on a flat surface with four coins in a line and touching each other in between each ruler.
2. Tape the rulers to the surface.
3. Using your finger, push one 20-cent coin on to the edge of the first of the four coins. What happens?
4. Push two 20-cent coins on to the line of four coins. What happens?
5. Explain the results below:

Another example of the third law:



Two skaters push against each other. The skater on the left exerts a force  $F$  on the skater on the right, and the skater on the right exerts a force  $-F$  on the skater on the left.

[http://en.wikipedia.org/wiki/Newton's\\_laws\\_of\\_motion](http://en.wikipedia.org/wiki/Newton's_laws_of_motion)

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