Force Pairs

Balanced and Unbalanced Forces

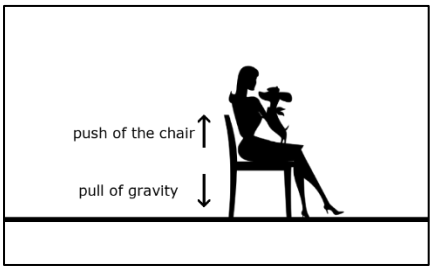
Use the words below to complete the passage about balanced and unbalanced forces.

reaction	ground	objects	resistance	gravity	unbalanced
pushing	pairs	opposite	falls	balanced	stronger

Forces always act in pairs. In every interaction between two _____, one or more force pairs are at work. What are force pairs? To help answer this, let's refer to Newton's third law of motion:

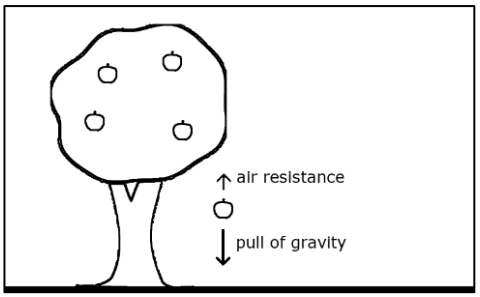
'Every action has an equal and opposite _____.'

This means that when an object applies force to another object, it receives the same amount of force, but in the _____ direction.



As an example, imagine you are sitting in a chair. What force is pulling you down on to your chair? _____. The chair is also providing a force, keeping you from crashing to the ground. These two forces are opposite in direction: gravity pulling down and the chair _____ you up. They are an example of a force pair. Because the forces are equal in size, this force pair is _____.

Force _____ aren't always balanced. Imagine an apple has just fallen off a tree. Gravity is pulling it towards the _____. Air _____ is pushing against the apple as it falls through the air, however the force of gravity is much _____ than the air resistance. This force pair is _____. Gravity overpowers the air resistance and the result is that the apple _____ to the ground.



D	G	Z	B	R	Y	P	J	N	E	W
I	S	F	W	P	H	I	B	U	D	P
R	T	L	B	A	L	A	N	C	E	D
E	R	U	W	F	B	L	E	P	C	Q
C	E	Y	F	G	E	V	T	A	N	U
T	N	T	O	J	G	F	I	I	A	E
I	G	I	R	S	R	R	S	R	L	F
O	T	V	C	H	L	O	O	S	A	Z
N	H	A	E	S	L	N	P	T	B	H
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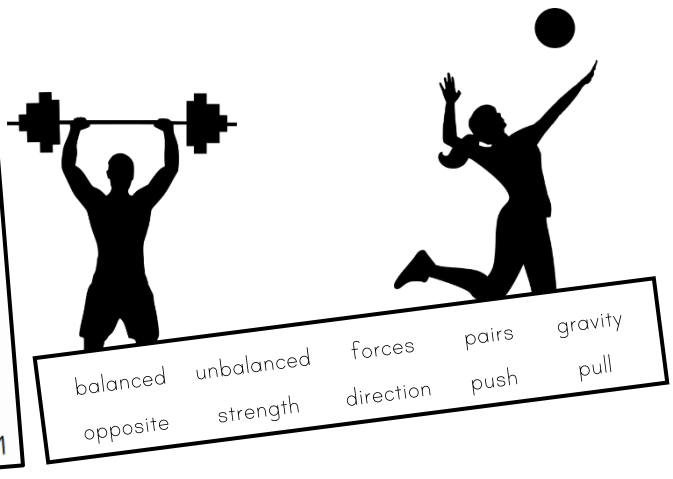

balanced unbalanced forces pairs gravity
opposite strength direction push pull

Force Pairs Answers

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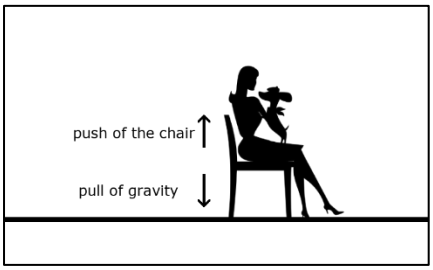
'Every action has an equal and opposite reaction.'

This means that when an object applies force to another object, it receives the same amount of force, but in the opposite direction.



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Force pairs aren't always balanced. Imagine an apple has just fallen off a tree. Gravity is pulling it towards the ground. Air resistance is pushing against the apple as it falls through the air, however the force of gravity is much stronger than the air resistance. This force pair is unbalanced. Gravity overpowers the air resistance and the result is that the apple falls to the ground.