


Lesson 3

Lesson	Resources	Context
3		Resultant forces

Starter Title: Resultant force

	Activity
	What will happen to the skateboarder as his forces are not balanced?
+	Calculate the resultant forces.




20N to the right



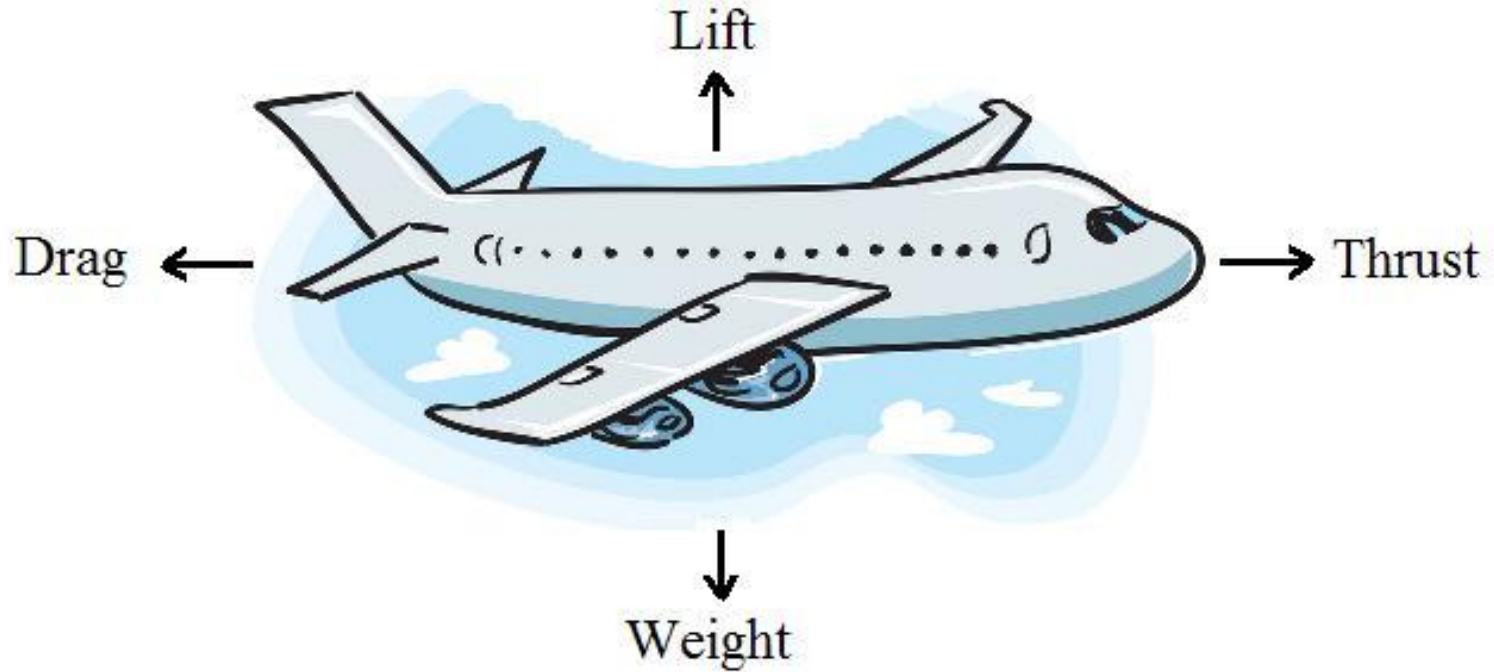


Title: Resultant forces

Homework: Revise spellings for test

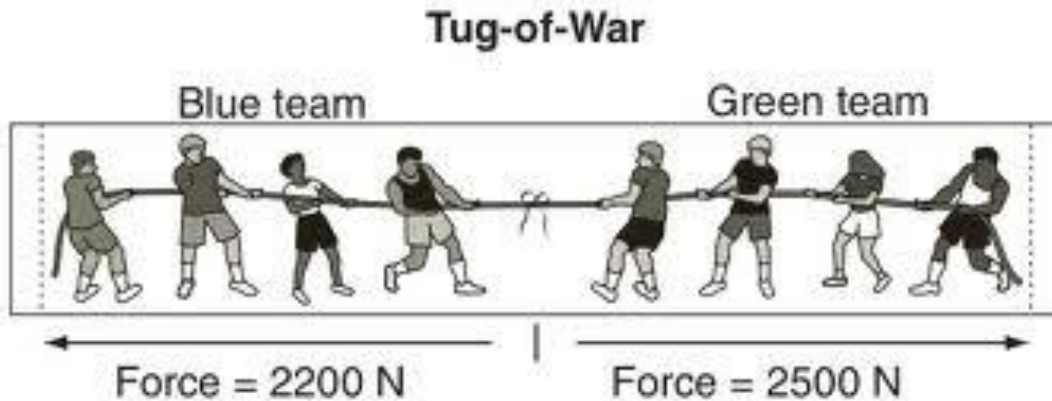
Aim	Learning Objectives	Key Words	SPAG
	Identify the resultant force on an object and the direction in which it is acting.	Arrow, balanced, unbalanced, forces, newtons, resultant	<ul style="list-style-type: none">To be able to spell all keywords
	Describe situations in which forces are unbalanced and show these with labelled diagrams.		
	Explain situations in which forces are unbalanced and show these with labelled diagrams.		

Main Activity – Modelling



A number of forces can be acting on something at the same time, as shown with this aeroplane. When all of these forces are balanced the plane will remain moving at a constant speed.

Main Activity – Modelling

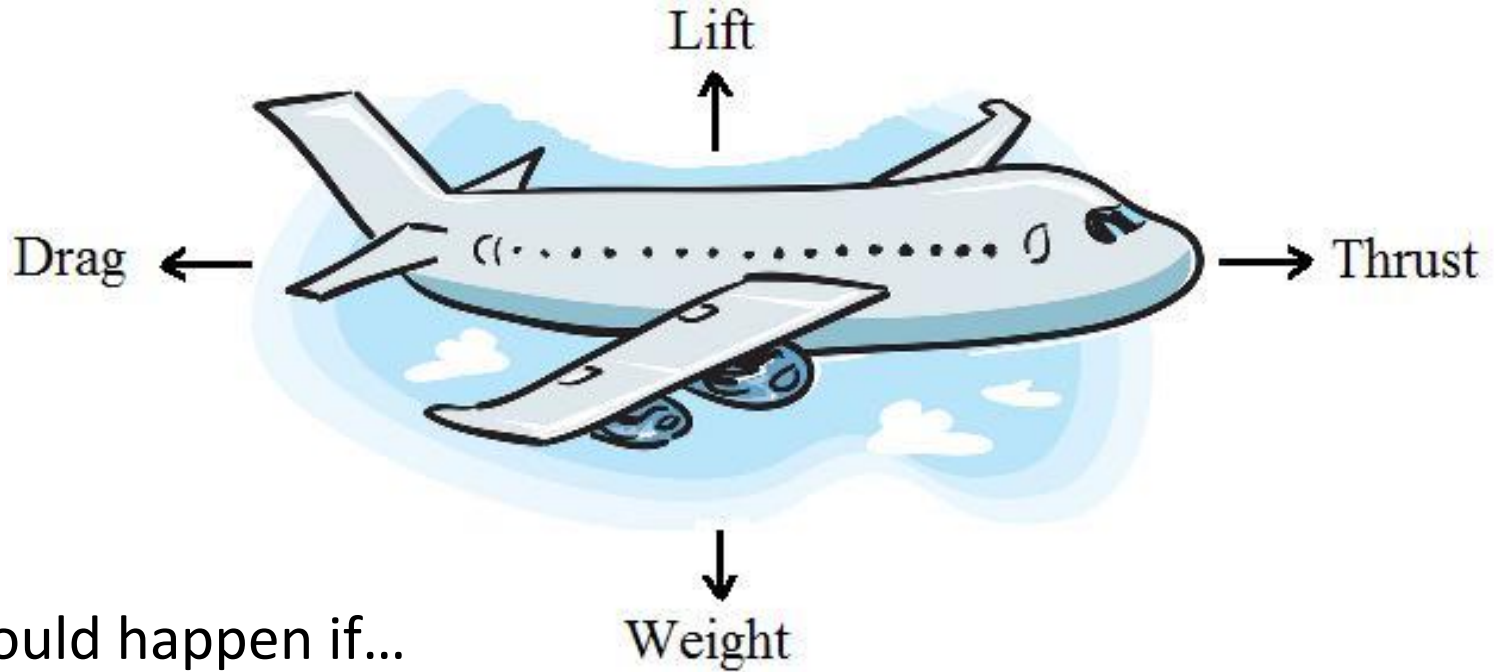


When all the forces are not balanced, it causes a **resultant force**.

In this case, an object results in moving in the direction of the resultant force. This means that:

- **A stationary object begins to move in the direction of the resultant force**
- **A moving object speeds up, slows down or changes direction.**

Main Activity – AfL



What would happen if...

The engine thrust increased?

There was a tail wind?

The wing flaps opened increasing drag?

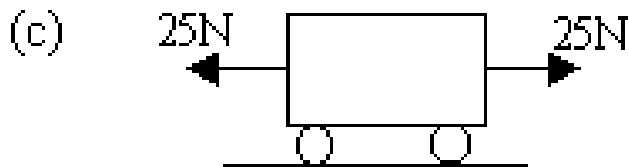
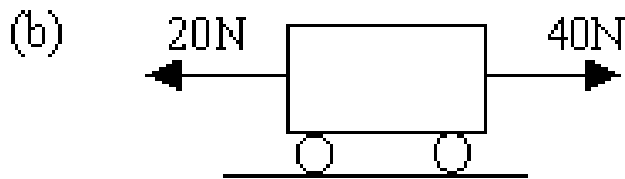
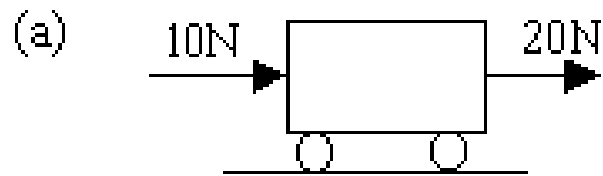
An engine cut out?

Challenge: there was heavy cargo and people?

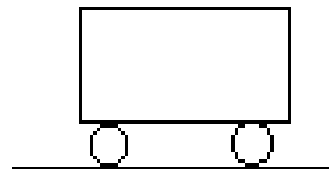
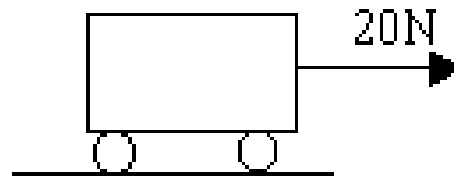
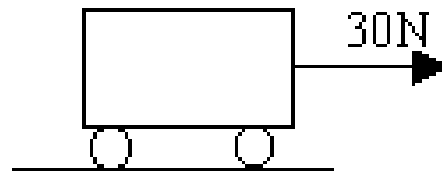
Main Activity – AfL

Calculate the resultant force:

Applied forces



Resultant force

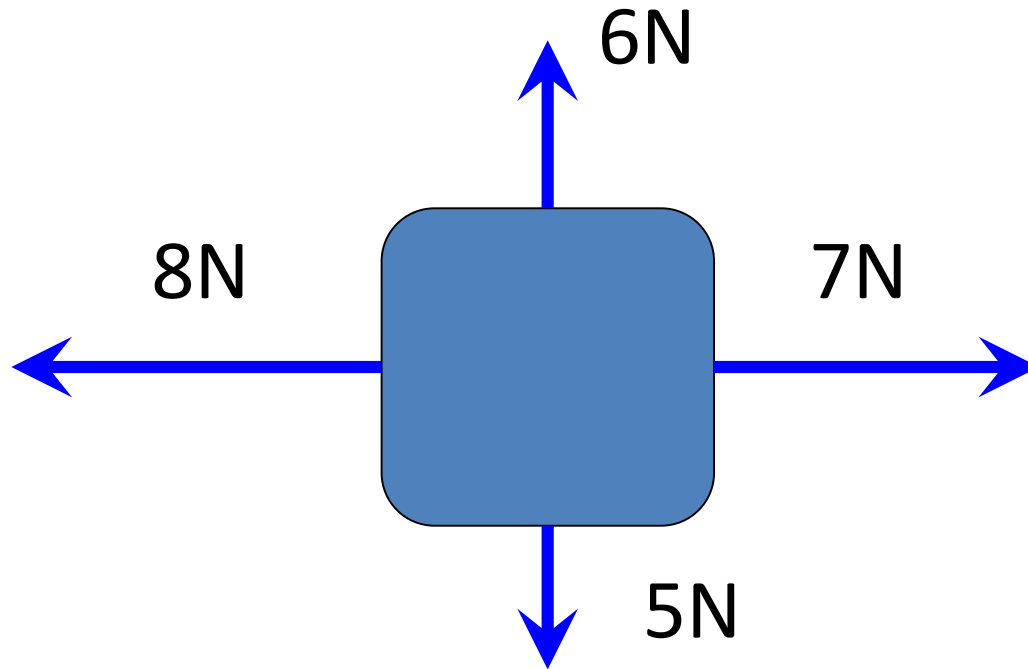


zero resultant

Extension: Make some problems for your partner to solve.

Main Activity – AfL

Calculate the resultant force:



The resultant force is 1N to the left and 1N up.

Main Activity – AfL

In your books represent each of the objects below.

200N



Astronaut would speed up with a force of 300N to the right, with no vertical movement.

300N

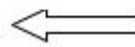


The ball will accelerate with a force of 50N to the left.

75N

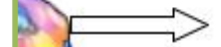


1000N



Car would speed up in the forward direction with a force of 700N.

1700N



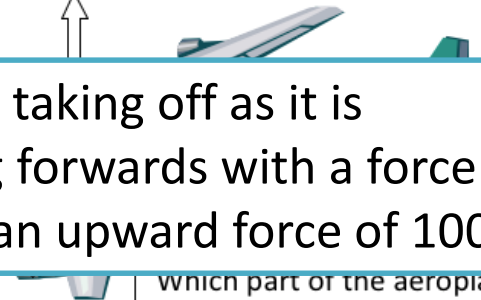
3000N



The plane is taking off as it is accelerating forwards with a force of 2500N and an upward force of 1000N.

10000N

2000N



Which part of the aeroplane's journey do you think this is?



Identify forces on an object and directions in which they are acting.






Describe situations in which forces are unbalanced and show these with labelled diagrams.

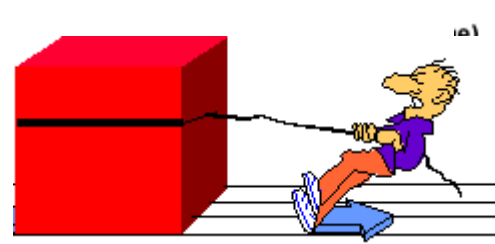


Explain situations in which forces are unbalanced and show these with labelled diagrams.

Assessment Phase

Aim	Assessment Task
	Identify the resultant force on an object and the direction in which it is acting.
	Describe a situation in which forces are unbalanced and show these with labelled diagrams.
	Explain a situation in which forces are unbalanced and show these with labelled diagrams.

Choose one situation:



Keywords:

Arrow, balanced, unbalanced, forces, newtons, resultant

Anagrams:

Can you unscramble these letters to create a relevant word?

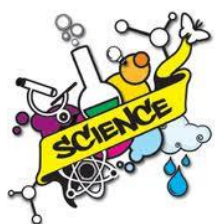
fresco

latestrun

wetnon




uncleandab

orwar



Title: Resultant forces

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