Physics > Big idea PFN: Forces and motion > Topic PFM3: More about force

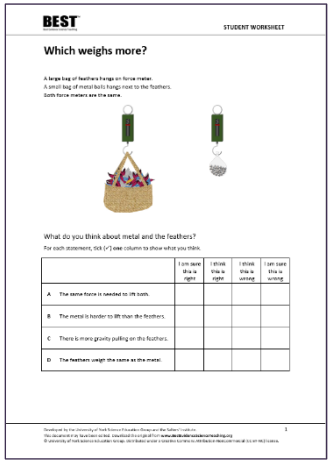
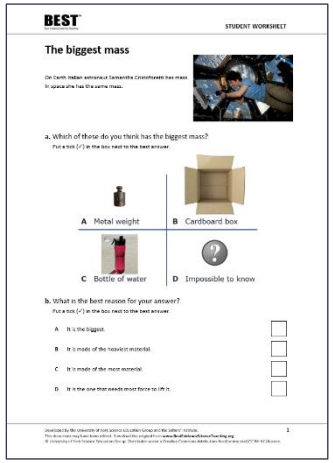
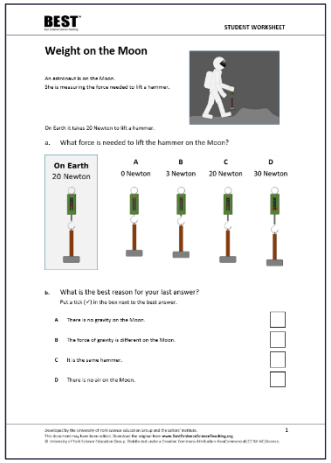
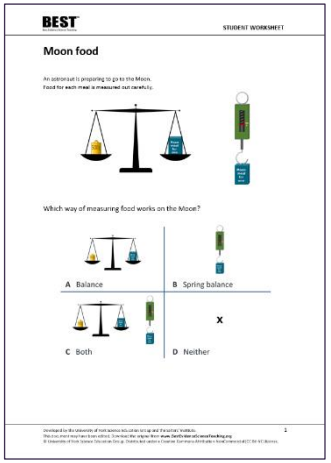
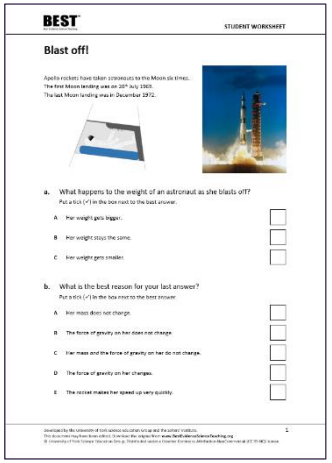
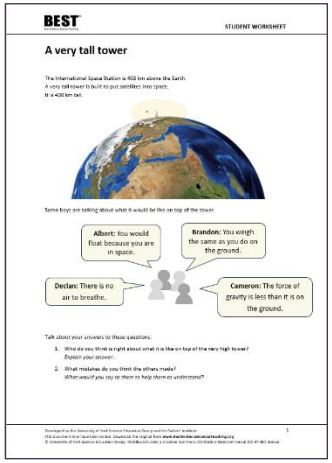
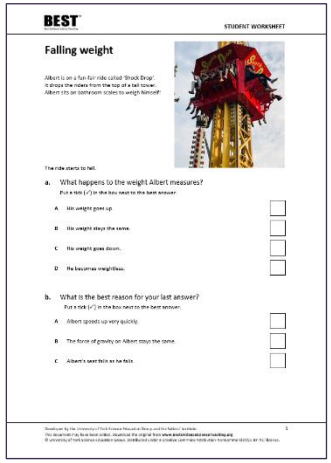
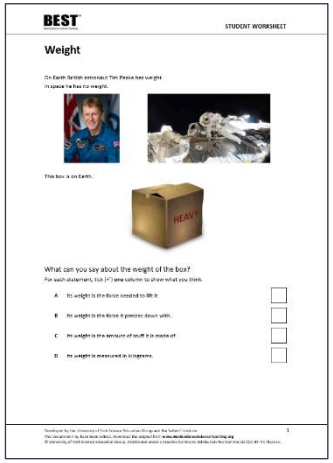
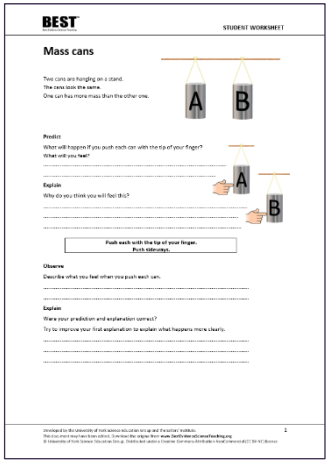
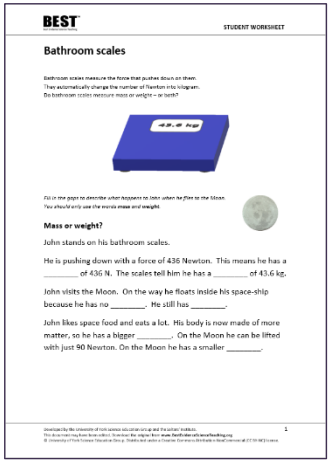
Key concept (age 11-14)
PFM3.1: Mass and weight

Progression toolkit: Mass and weight

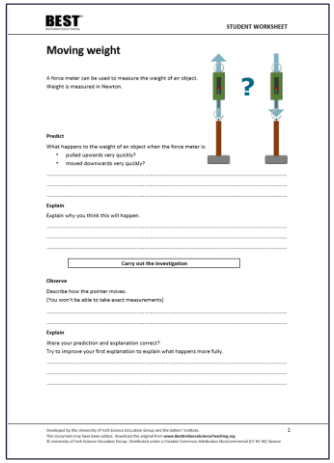
Learning focus	Mass is a measure of the amount of matter an object or substance is comprised of and weight is the force needed to support the object or substance.				
As students' conceptual understanding progresses they can:	CONCEPTUAL PROGRESSION				
	Describe weight as the force needed to support an object or substance.	Describe mass as a measure of the amount of matter in an object or substance.	Explain the relationship between the weight and mass of an object that is caused by a gravitational force.	Explain why the measured weight of an astronaut changes as they take off in a rocket. **B**	Explain why an astronaut orbiting the Earth is weightless. **B**
Diagnostic questions	Which weighs more?	The biggest mass	Weight on the Moon	Blast off!	A very tall tower
			Moon food		Falling weight
Response activities	Weight	Mass cans	Bathroom scales	Moving weight	

Key:

B Bridge to later stages of learning

Which weighs more?	The biggest mass	Weight on the Moon	Moon food	Blast off!
				
Confidence grid	Two-tier multiple choice	Two-tier multiple choice	Simple multiple choice	Two-tier multiple choice
A very tall tower	**Falling weight**	**Weight**	**Mass cans**	**Bathroom scales**
				
Talking heads	Two-tier multiple choice	Simple multiple choice	Predict, explain; observe, explain	Focused cloze

Moving weight


BEST
STUDENT WORKSHEET

Moving weight

A force meter can be used to measure the weight of an object.
Weight is measured in Newton.

?

Predict
What happens to the weight of an object when the force meter is:
- pulled upwards very quickly?
- moved downwards very quickly?

Explain
Explain why you think this will happen.

Carry out the investigation

Observe
Describe how the pointer moves.
(You won't be able to take exact measurements)

Explain
Were your prediction and explanation correct?
Try to improve your first explanation to explain what happens more fully.

Predict, explain; observe, explain