

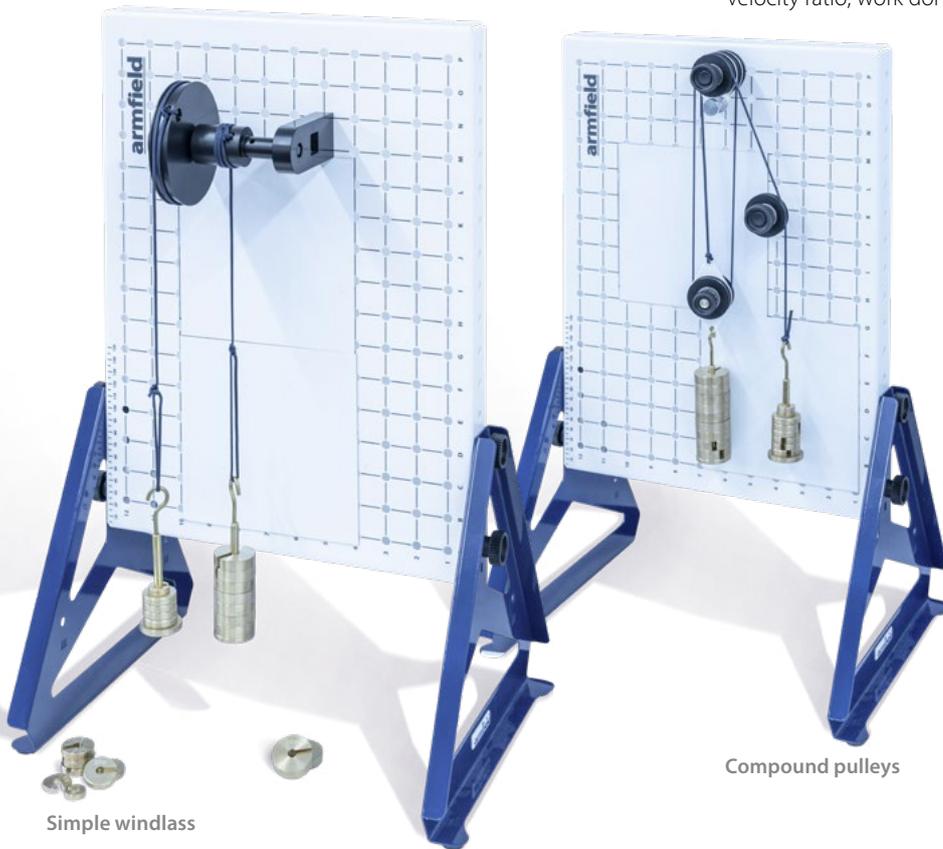
The Engineering Fundamentals range enables students to gain an understanding of the principles of engineering by the process of learning via experimentation.

The EF-4.1 Pulleys experiments kit introduces students to various types of pulleys including fixed, movable and compound pulleys. These experiments show the advantages of using different types of pulley arrangements as a way of lifting weights.

**AN INNOVATIVE HANDS ON MODULAR SYSTEM DESIGNED TO ENABLE INVESTIGATION AND THE UNDERSTANDING OF ENGINEERING PRINCIPLES**

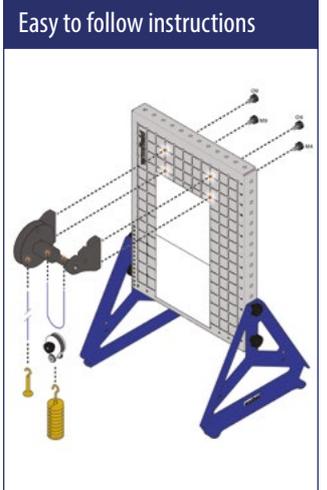
The kit also allows students to familiarise themselves with a simple windlass or wheel and axle, and how this can allow a large load to be lifted whilst still maintaining a mechanical advantage, a differential windlass, how a capstan device allows high loads to be controlled by a relatively low restraining force and a Weston differential or chain hoist.

The kit introduces students to terms such as mechanical advantage, velocity ratio, work done, efficiency and the laws of a machine.



Simple windlass

Compound pulleys



Easy to follow instructions



1 tray supplied with EF-4.1



Experiments shown below; moveable pulley, capstan & Weston differential



High quality materials

## Engineering fundamentals system

The modular tray-based system is supplied in conjunction with a multifunctional base unit enabling the student to conduct their own experiments in subjects such as statics, dynamics, mechanisms and kinematics.

Each kit is supplied with a highly visual user-friendly operational guide, allowing the student to understand the theory of the subject by the application of practical experimentation.

### Requirements

### Scale

EF-BU

Experiment tray scale



EF-BU scale



EF-WS scale



- ▶ EF-BU on which to build the experiment from the tray components
- ▶ Level and stable work surface to mount the EF-BU upon. The optional EF-WS is ideal for this if no suitable desk or bench is available.

### Essential accessories / equipment

- ▶ EF-BU Base Unit

### Experimental content

- ▶ Fixed Pulleys
- ▶ Moveable Pulleys
- ▶ Compound Pulleys
- ▶ Windlass / Wheel and Axle
- ▶ Capstan
- ▶ Weston Differential



### Overall dimensions

Tray	
Length	0.430m
Width	0.312m
Height	0.160m
Packed and crated shipping specifications	
Volume	0.02m <sup>3</sup>
Gross weight	5.0Kg

## Features / benefits

### Features

- ▶ Neatly presented in an easily identifiable and durable storage tray
- ▶ Trays have clear lids making it easy to see their contents
- ▶ Pictorial tray contents list to identify missing components easily
- ▶ Accompanied by a detailed manual with various practical exercises
- ▶ Clear and concise assembly instructions for each experiment
- ▶ Multiple experiments per kit
- ▶ Toolless assembly

### Benefits

- ▶ Hands-on understanding from lessons
- ▶ Improve the student's dexterity by self-assembly with the instructions provided

### Related products

- ▶ EF-BU Base Unit

### Statics Experiments

- ▶ EF-1.1 Forces
- ▶ EF-1.2 Moments
- ▶ EF-1.3a Beams
- ▶ EF-1.3b Trusses
- ▶ EF-1.4 Springs
- ▶ EF-1.5 Torsion

### Dynamics Experiments

- ▶ EF-2.1 Friction
- ▶ EF-2.2 Simple Harmonic Motion
- ▶ EF-2.3 Rotational Friction
- ▶ EF-2.4 Potential and Kinetic Energy
- ▶ EF-2.5 Centrifugal and Centripetal Force

### Mechanisms Experiments

- ▶ EF-3.1 Cam, Crank and Toggle
- ▶ EF-3.2 Simple Mechanisms
- ▶ EF-3.3 Additional Mechanisms
- ▶ EF-3.4 Bar Linkages

### Kinematics

- ▶ EF-4.1 Pulleys
- ▶ EF-4.2 Gears
- ▶ EF-4.3 Drive Systems

### Strength of Materials

- ▶ EF-5.1 Tensile Tester

### Options

- ▶ EF-WS Workstation

### Ordering specification

- ▶ Chain block assembly
- ▶ Moving sprocket assembly
- ▶ Axle and pulley assembly
- ▶ Pulley box assembly
- ▶ Wheel and axle assembly
- ▶ Fixed spring boss
- ▶ 1 x 250g weight hanger
- ▶ 1 x 500g weight hanger
- ▶ 1 x 10g weight hanger

### Ordering codes

- ▶ EF-4.1 - Pulleys
- ▶ EF-BU - Base Unit
- ▶ EF-WS - Workstation (optional)

Armfield standard warranty applies with this product

## Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



armfield.co.uk

## Aftercare

Installation  
Commissioning  
Training  
Service and maintenance  
Support: [armfieldassist.com](http://armfieldassist.com)