EF SERIES

DYNAMICS Friction – EF-2.1

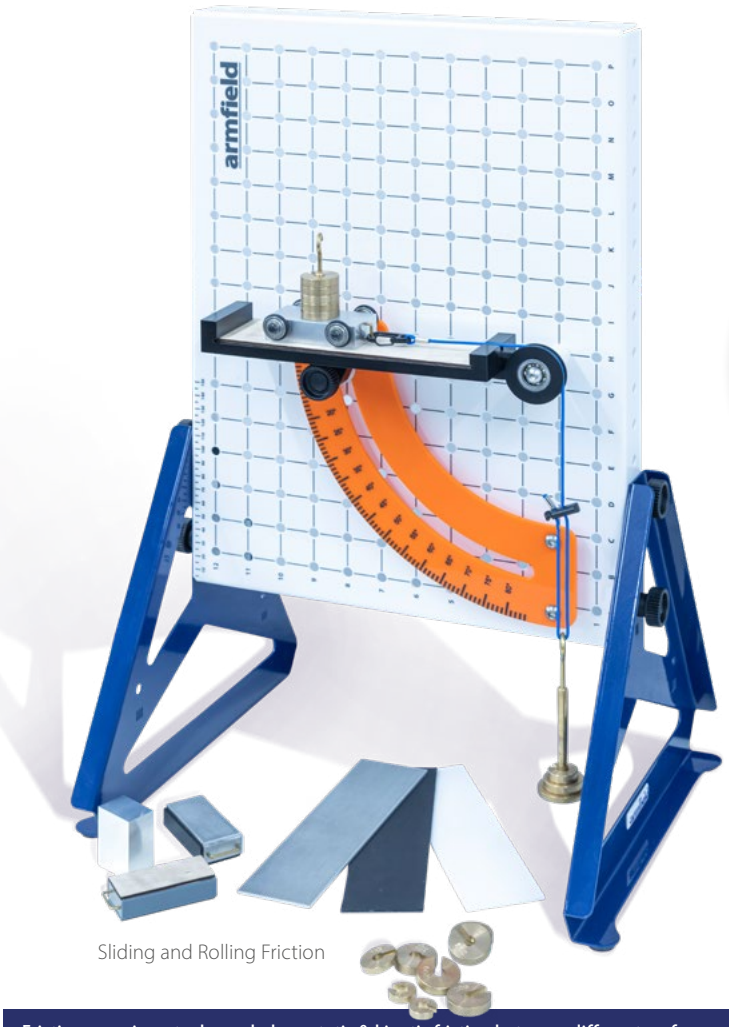
The Engineering Fundamentals range enables students to gain an understanding of the principles of engineering by the process of learning via experimentation.

The EF-2.1Friction experiments kit enables students to understand that friction can be affected by a number of variables including material surface, mass of the object trying to slide, angle of sliding and what effect external forces acting on the object will have.

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

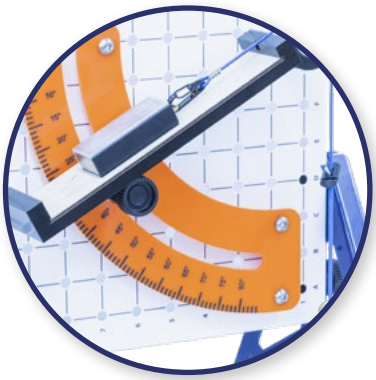
The kit is designed to help students understand that friction can be divided into two categories, static friction and kinetic (dynamic) friction.

The extent at which friction is reduced by using wheels and rollers, the angle at which the object slides and the angle of friction with the movement of an object along a plane is dependent on what external forces are applied and from which direction.

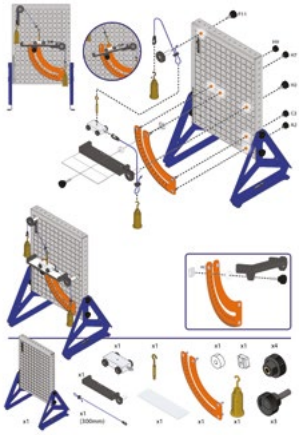


Sliding and Rolling Friction

Effect of angle on friction



Easy to follow instructions



1 tray supplied with **EF-2.1**

Friction experiments shown below, static & kinetic friction between different surfaces, surface angle & friction between different surfaces and surface angle & component forces (additional experiments available)

High quality materials: Introduction to Component Forces

UK office - email: sales@armfield.co.uk tel: +44 (0) 1425 478781 (for ROW)
USA office - email: info@armfield.inc tel: +1 (609) 208-2800 (USA only)

Issue: 1
URL: http://www.armfield.co.uk/ef
Applications
ME ChE CE IP

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

Requirements Scale

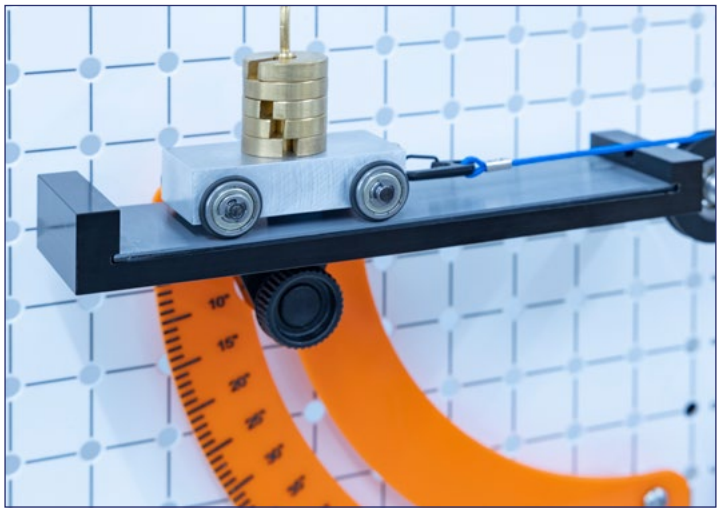
EF-BU

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.

Experimental content

- Static and kinetic friction
- Calculating the coefficient for both kinetic and static friction
- Sliding and rolling friction
- Effect of angle on friction
- Component forces



Overall dimensions

Tray	
Length	0.430m
Width	0.312m
Height	0.080m
Packed and crated shipping specifications	
Volume	0.02m^3
Gross weight	10Kg

Essential accessories / equipment

- EF-BU Base Unit

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

Bed Material

- Wood
- Rubber
- Aluminium
- Wood
- 3 x 50g weights
- 2 x 250g weights set on hanger
- Friction block material:
  - Metal large surface
  - Rubber large surface
  - Plastic large surface
  - Wood large surface
  - Wood small surface

Ordering codes

- **EF-2.1** - Friction
- **EF-BU** - Base Unit
- **EF-WS** - Workstation (optional)

Armfield standard warranty applies with this product