



Applications of Structures for Science



This module allows the student to investigate applications of structures. Students investigate construction and find out from practical experiments how to build towers and bridges that can take specific loads. They will learn techniques on reinforcing and strengthening structures as well as building other typical constructions as part of group problem-solving activities.

The Applications of Science system is a group-based technology teaching resource, designed to give students hands-on experience of basic science and technology.

Using the resources provided, students become involved in a variety of group problem-solving activities. Working in teams, the student will build important cooperative skills for the future.

The module consists of a large-scale construction kit and all the equipment students will need to complete the module.

Using the construction kit to carry out a number of building, experimental and problem solving tasks, students will gain a valuable insight into real-world applications of structures.

Students are guided through each task by re-usable laminated assignment sheets containing pictorial instructions and high quality graphics

During the assignments students build models, perform experiments, record results on their worksheet and answer questions designed to track and assess their performance.

Topical reference sheets are provided to reinforce the theory of the assignment subjects.

Worksheets typically involve answering questions, completing tables of results, adding labels to diagrams and completing sentences.

Optionally, the module can be used in a ClassAct computer-managed learning system to track student, group and class performance.



Cart storage option shown

Forces in structures assignments:

- Measuring forces
- Forces in a suspension bridge
- Cables in stadium design
- Structural needs of a long bridge

Structure design assignments:

- The influence of climate on house design
- Suitable house design
- Regional house design

Bridges and bridge design assignments:

- Components of a simple beam bridge
- Types of energy
- Forces in a suspension bridge
- Simple forces in bridges

Framework and beam assignments:

- The properties of frameworks
- How beams bend
- Types of frameworks
- Strengthening methods

The items supplied with this module include:

- Construction kit (TacTic) to make models for practical experiments (available in storage boxes or a cart)
- 2 x Book: 'The Super Science Book of Forces'
- River mat
- Spring balance
- Scissors
- Consumable items (string, blank paper, tape)
- Assignment sheets
- Reference sheets
- Class set of worksheets
- Class set of question sheets
- Teacher's guide

Additional items required:

- Computer (optional)
- Access to the internet (optional)

Order as:

ST11 Applications of Structures for Science

	No.	Average time
Assignments	8	45 minutes
Extension Activities	1	45 minutes
Total		6¾ hours