

# Space Technology (10-assignment)



This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology program. The module includes a 10-assignment exploratory curriculum that is split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks form the core of the student work. Where appropriate, these are accompanied by research tasks based upon software applications. Assessment questions are incorporated into each task.

#### Typical 10-assignment topic areas include:

- Function of the component parts of a model rocket
- Flight stages
- Mass, force and distance relationships
- Height and average speed calculation
- Forces and stability
- Rocket propulsion techniques
- Mission planning
- Safety and performance
- Model rocket assembly for flight
- Pre-flight checks and launch of a model rocket
- Flight and recovery

#### Typical 10-assignment activities include:

- Watch a video introducing the basics of space technology.
- Find out how computer programs can be used to simulate the flight of model rockets.
- Launch a model rocket.
- Calculate the heights that model rockets reach.
- Calculate the average speeds of model rockets as they fly through the air.
- Use a computer program to apply what you have previously learned to a simulated mission.
- Launch a water-filled rocket.
- Calculate the height and average speed of the water-filled rocket.
- Explore the forces acting on rockets.
- Discover why launch pads may be used.
- Examine the benefits of adding fins to stabilize rockets.
- Perform an experiment to investigate the relationship between mass and the distance traveled by a rocket.
- Use a computer program to explore the relationship between force and the distance traveled by a rocket.
- Construct a simple toy to see how it acts on Earth.
- Discover how space suits can allow astronauts to work and live in space.

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

#### The items supplied with this instructional module include:

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Assignment Guide
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- Computer Aided Instruction software
- Video: 'Liftoff to Learning'
- Rocket launch instruction sheets
- Model rocket kits
- Model rocket launch control unit
- Model rocket launch pad
- Spring-loaded dowel launcher
- Safety glasses
- Altitude finder (clinometer)
- Water powered rocket kit
- Bicycle pump
- Accessory kit

#### Additional items required:

- Computer
- Access to DVD player

### Module Facts

For Technology Program, order as:  
ST190/10 Space Technology

	No.	Average time
Assignments	10	45 minutes
Extension Activities	2	45 minutes
<b>Total</b>		<b>9 hours</b>



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