

FORCES & MOTION INCURSION

NSW Science & Technology (2024)
Syllabus Alignment Guide (Overview)

Students explore how forces affect movement through interactive demonstrations, prediction, and discussion — building both conceptual understanding and scientific thinking.
Rather than simply watching, students actively engage in explaining, questioning, and making sense of what they observe.

Key Learning Focus

- Forces are pushes and pulls
- Forces can change speed, direction and shape
- Friction affects how objects move
- Objects move differently depending on forces acting on them
- Simple cause-and-effect relationships

How Students Learn

Students actively:

- Make predictions
- Observe changes in motion
- Discuss cause and effect
- Explain what is happening
- Connect ideas to real-world examples

Syllabus Alignment Overview (NSW Science & Technology 2024)

Early Stage 1

STE-SCI-01: Identifies and describes movement

Students:

- Observe how objects move
- Describe pushes and pulls
- Explore how movement can change

Stage 1

ST1-SCI-01: Measures and describes changes in movement

ST1-PQU-01: Poses questions to investigate cause and effect

Students:

- Identify forces as pushes and pulls
- Observe how forces change movement
- Explore friction through simple demonstrations
- Pose questions to explore cause-and-effect relationships

Stage 2

ST2-SCI-01: Investigates the effects of energy on physical systems

ST2-PQU-01: Poses questions to create fair tests to investigate physical systems

Students:

- Investigate how force strength affects motion
- Explore energy in moving systems
- Predict and test outcomes
- Identify patterns in results

Stage 3

ST3-SCI-01: Uses evidence to explain scientific knowledge

ST3-PQU-01: Poses questions to identify variables and conduct fair tests

Students:

- Analyse how multiple forces interact
- Identify variables affecting motion
- Predict outcomes using scientific reasoning
- Explain results using evidence

A detailed teacher pack is provided upon booking, including explicit syllabus outcome mapping, content point links and demonstration-to-learning connections.

How Students Experience the Learning

Students take part in engaging demonstrations that show how forces act on objects — including changes in motion, friction effects, and force interactions

Each session follows **The Crazy Scientist Lab System™**, a structured approach designed to build scientific thinking through demonstration and discussion.

Students move through a learning sequence of: **Predict** → **Observe** → **Explain** → **Apply**

Working Scientifically

Working scientifically is embedded throughout the session.

Students:

- Pose questions based on observations
- Make predictions
- Observe and describe changes in motion
- Identify patterns in results
- Explain their thinking using evidence

Key Scientific Terminology

Students will hear and use key terms, including:

Force (push and pull)	Motion	Friction
Gravity	Speed	Direction
Surface	Magnetism	Field
Electrical	Energy	Accelerate
Heat and more		

Vocabulary is reinforced through discussion and explanation during the session.

Supports Classroom Learning

This incursion can be used to:

- Introduce a unit on forces and motion
- Reinforce key concepts during a unit
- Extend student understanding through real-world examples

Teacher Support

A detailed teacher pack is provided upon booking, including:

- Explicit syllabus outcome mapping
- Content point links
- Demonstration-to-learning connections
- Pre- and post-learning activities to support vocabulary and concept development

Flexible for Your Class

As a practising classroom teacher, I understand that every class and program is different.

Sessions can be adjusted to:

- Support your current unit of work
- Target specific syllabus outcomes
- Cater for different stage levels and abilities

Let's Plan Your Session

If you'd like to discuss how this incursion can best support your class, feel free to get in touch.

Enquire or book via the website, or reach out directly to discuss your needs.