

Unit outcomes

Science outcomes

Smooth moves is a Stage 2 unit. Unit outcomes have been identified for Level 2 and Level 3 of the *National Scientific Literacy Progress Map*, allowing teachers to cater for the range of abilities in the fourth and fifth year of schooling. Summative assessment will need to take account of the levels of achievement expected for a cohort of students. Summative assessment of conceptual learning outcomes (c) occurs in the *Evaluate* phase and summative assessment of the investigating outcomes (i) occurs in the *Elaborate* phase.

Level 2

- c Use force-arrows to show the direction in which forces are acting on an object.
- c Explain that forces can make things start moving.
- c Identify examples of forces that act in direct contact and at a distance.
- c Explain the effect of forces on the movement of an object.
- i Identify some variables that can be investigated.
- i Make and record observations and measurements.

Level 3

- c Use different-sized arrows to represent and compare different-sized forces acting on the direction of movement of an object.
- c Explain that forces can make things stop moving.
- c Explain that a larger force has a greater effect on an object and a smaller force has less effect on the same object.
- i Show awareness of the need for fair testing.
- i Make and record observations and measurements using tables and column graphs.
- i Describe the relationship between two variables plotted as a column graph.

Literacy focuses

Smooth moves engages students in activities that reflect the mutually supportive relationship between science and literacy. Learning activities have been designed to introduce explicitly the literacy focuses and to provide students with the opportunity to use them as they think about and represent their understanding of science.

The interdependence of science and literacy is demonstrated throughout the unit when students participate in discussions and use talk to: inquire, report on observations, clarify understanding and reflect on experience. The use of gestures and oral, written and visual language to relate science to students' personal worlds is another important aspect.

The literacy focuses identified for *Smooth moves* are:

- annotated drawings
- science journals
- word walls
- storyboards
- role-plays
- narratives
- force-arrow diagrams
- tables
- graphs
- drawings.