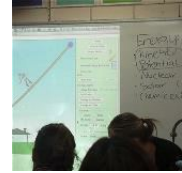


Energy transfers and transformations

About this Illustration of Practice

At Greenwood Senior High School, Hannah, a graduate teacher, sets her students the task of measuring the dependent variable in a science experiment. The experiment measures the motion and energy of an object in a virtual environment, where the user modifies the independent variable (ie the nature of the object, or the environment). The teacher instructs students to work in pairs on the task and to record their findings. She then discusses the variables identified by pairs with the class as a whole.



Standards

Standard 3

Plan for and implement effective teaching and learning

Focus area 3.1

Establish challenging learning goals

Graduate

Descriptor: Set learning goals that provide achievable challenges for students of varying abilities and characteristics.

Other descriptors

Standard 2

Know the content and how to teach it

Focus area 2.6

Information and Communication Technology (ICT)

Graduate

Descriptor: Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.

Discussion questions

1. Why is it important to set challenging, but achievable learning goals for students?
2. How do you balance 'challenge' with 'achievable' learning outcomes?

Learning context

The class taught by the graduate teacher is an extension group of science students at the year 10 level. At the beginning of the lesson, the teacher locates the activity within the students' broader study of kinetic and potential energy. She reinforces Science Inquiry Skills by allowing students to use simulations to identify the dependent and independent variables, and formulate hypotheses to explain these. When drawing together the findings made by pairs, the teacher exhibits the required knowledge of content, and the ability to link this knowledge to what is special in the variables that students have identified.

School context

Greenwood Senior High School

Western Australia

Year level: Year 10

Related subject: Science

Stage of schooling: Secondary

School type: Government

School location: Metropolitan

[View school location in Google Maps](#)

Australian Curriculum

Learning area: Science

Year level: Year 10

Content descriptions: [ACSSU190](#)