



## Achievements and Competencies

### Learning Outcomes

|                    |
|--------------------|
| <b>Grade 10</b>    |
| Chemical reactions |

Achievements and Competencies are based on the Common Framework of Science Learning Outcomes (K-12) set by the Canadian Council of Ministers of Education (1997).

### Specific Expectations

#### **Grade 10**

#### PHYSICAL SCIENCE

##### Chemical reactions

117-7 Identify and describe science- and technology-based careers related to the science they are studying (e.g., identify careers in areas such as biochemistry, medicine, pharmacology, and environmental science).

Many careers use DNA analysis. In this activity, students explore the various careers which use gel electrophoresis as a technique of DNA analysis including the pharmaceutical industry, evolutionary biology, zoology, medicine, forensics and screening for diseases.

214-5 Interpret patterns and trends in data, and infer or calculate linear and nonlinear relationships among variables (e.g., determine the effect of increasing the concentration of a reactant on the rate of reaction).

In this activity, the students will use various amounts of different colours of food colouring to run the gel electrophoresis. The students analyse the gel after it has been run to try and determine which colours of food colouring were used in each sample and estimate the quantities used. They then need to determine which suspect is guilty.