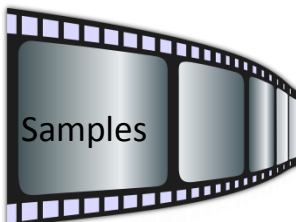## Open-ended Questions

An open-ended question is a question designed to encourage multiple correct answers using many words. It differs from a closed question which has one correct answer. For example, a closed question might ask: what number has 4 hundreds, 1 ten and 3 ones? An open-ended question with the same outcome in mind could be: You can model a number with 8 base ten blocks. What might that number be?

Open-ended questions offer many benefits. One advantage is that this type of question leads to reflection. Students can use a variety of strategies to solve the question, selecting the one most appropriate for their current skill level. Another benefit is increased engagement and participation.

Open-ended questions focus on developing the following Mathematical Processes:
- Connections
- Reasoning
- Communication

In this PowerPoint, Marian Small walks through examples of open-ended questions and a simple "how to" guide.
http://www.onetwoinfinity.ca/presentations/AMElemNov.pdf

This video is about working through an open ended math problem (3:32 min)
https://www.youtube.com/watch?v=PbvILkshoqo

Video: Students and teacher in action

This video features Marian Small talking about Open-ended Questions:
https://www.youtube.com/watch?v=5kZH13eTQl8
This website provides a weekly example of open-ended questions at:
http://www.onetwoinfinity.ca/good-question/
This article is about Turning word problems into Open-ended Problem Solving: http://nrich.maths.org/2471
This Canadian book is solely on open-ended questions:
Small, M. (2009). *Good questions: Great ways to differentiate mathematics instruction*. New York: Teachers College Press.