Publisher Questions to the Western and Northern Canadian Protocol (WNCP) Mathematics Team

Publishers' Meeting
Friday, April 25, 2008

1. The CCF for grades K–9 and 10–12 states that technology can be used effectively to contribute to and support the learning of a wide range of mathematical outcomes. Technology enables students to explore and create patterns, examine relationships, test conjectures and solve problems … technology should be used as one of a variety of approaches and tools for creating mathematical understanding.

   In order to include technology as one of a variety of approaches, it becomes useful to include screen captures in the student resource to support such an approach. These screen captures are created using technologies such as graphing calculators, spreadsheets, dynamic geometry software, etc. At an earlier publisher's meeting, it was recommended that publishers avoid references to specific software within their resources. However, by nature, screen captures and any associated commentary would be reflective of the specific software used to create them and as such impossible to make generic.

   Is it acceptable to include screen captures and associated wording that is reflective of specific software in the student resource?
   WNCP Response: Screen captures that support the pedagogy of using technology to develop understanding instead of focusing on how to use the technology are acceptable. As the WNCP does not advocate the use of any one type or brand of technology, publishers are encouraged to use a variety of technologies within the resource.

2. **Foundations of Mathematics Grade 10, Algebra and Number**
   SO 5: Demonstrate an understanding of common factors and trinomial factoring, concretely, pictorially and symbolically. [C, CN, R, V]
   AI 5.2 Model the factoring of a trinomial, concretely or pictorially, and record the process symbolically.
   AI 5.7 Generalize and explain strategies used to factor a trinomial.

   For trinomials of the form $ax^2 + bx + c = 0$, are there any restrictions on the value of a?
   WNCP Response: The value of a is restricted to an element of the integers. This topic will be further developed in Foundations of Mathematics 11 and Pre-calculus 11.

3. **Apprenticeship and Workplace Mathematics Grades 10–12**

a. What is meant by "project-based" when describing what is needed for the Apprenticeship and Workplace resources? I.e., does "project-based" differ from "chapter project" or "chapter theme"? If so, how?
WNCP Response: Projects are an application-based inquiry to engage students in their learning of mathematics and thus are integral to the resource. The scope of the projects may vary.

b. Are students to develop their understanding through the project or demonstrate their understanding by doing a project?
WNCP Response: Both.

c. Is the project to be dictated by the resource or the student? Is the resource design to be open so that students are able to select projects that they would then work on? If so, how can this be done?
WNCP Response: Projects may be determined both by the resource and by the student. The use of projects is part of instructional design and therefore the design of the projects is at the discretion of the developer.

d. Are students expected (in Apprenticeship and Workplace 12) to conduct probability experiments?
WNCP Response: Probability experiments could be used to address some of the achievement indicators in Probability SO1.