

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

- 1. We have noticed that the Alberta curriculum differs from the WNCP curriculum at several grades, for example, at grade 5 an outcome has been added to Shape and Space relating to 90 degree angles. My question is, are publishers expected to address these Alberta outcomes? And if one did, would it be considered extraneous by WNCP?**

WNCP Response: The WNCP Call for Resources was developed to identify resources that align with the WNCP CCF for K–9 Mathematics 2006. The expectation is that the publishers will address only those outcomes that are in the WNCP CCF. It is not an expectation that they will address any additional outcomes found in the Alberta Program of Studies, nor are they expected to address changes to the CCF that are reflected in other jurisdictional programs of study.

- 2. I would like to query the inclusion of a feature in grades 7, 8 and 9 that we had understood to fall into the category of extraneous content. That is, a review placed at the beginning of a chapter and divorced from the content of that chapter yet reviewing skills and knowledge that is foundational for success with the new content of the chapter.**

Would you please confirm whether a review of this sort is permitted in submissions for 7, 8 and 9 and the criteria that would be used to judge its permissibility?

WNCP Response: Extraneous content is defined as:

- mathematics outcomes contained in a resource that are different from those included in the CCF for K–9 Mathematics, WNCP, 2006, at the grade for which the resource is developed
- reteaching outcomes from an earlier grade
- material that goes beyond the breadth and depth of the outcomes as defined by the achievement indicators in the CCF
- “extension-type” questions that lead into outcomes in a following grade.

These are the guidelines that were used during the January 2007 resource review and will be adhered to during subsequent WNCP mathematics resource reviews. This request supports the answer provided to publisher questions posted on the WNCP Web site on November 9, 2005 where the WNCP stated that “the teacher’s resource can include strategies for addressing and assessing prior knowledge. Specifically: reteaching and assessing outcomes from the previous grades is considered extraneous and should not appear in a student resource.”

3. What is the process for re-evaluating resources that were not approved in the initial resource review by WNCP?

WNCP Response: Those resources that were not approved during the initial review by the WNCP may be resubmitted for a second evaluation within one year of the initial review. The WNCP mathematics consultants will re-evaluate the resources at a time that is convenient for the team and that minimizes the need for extra travel. For example, those resources that were not approved in the January 2007 WNCP resource review could be resubmitted to Alberta Education any time before January 2008. The WNCP mathematics consultants were meeting in April, June and August 2007. Any resources that were submitted prior to these meetings would be reviewed during these established meeting dates. Resources that are submitted for re-evaluation after August 2007 will be reviewed during the January 2008 resource review. Resources may be submitted for re-evaluation only once.

If during the second evaluation resources are found to meet the review criteria as outlined in the 2007 WNCP Call for Resources, they will be recommended for authorization by the WNCP Assistant Deputy Ministers. Resources approved by the Assistant Deputy Ministers will be added to the list of authorized resources and posted on the WNCP Web site.

Grade 9

1. For an equation of the type $ax + b = c$, when the solution is a (positive) fraction or decimal, to verify the solutions by substitution requires operations with fractions or decimals, both of which are included in the grade 8 curriculum, so why is this not expected?

WNCP Response: This is an expectation. Please refer to the revised WNCP response to question 4 that was posted:

The students should be able to get a positive decimal or fraction answer in the final step. Students may be expected to work with operations on decimals or fractions to verify their solutions.

2. Grade 9 Number SO 1 and related AI 1 refers to the exponent laws of powers

with integral bases. However, the rule $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$, with b non-zero, uses a

$\frac{a}{b}$ rational number base, namely $\frac{a}{b}$. Since both SO 1 and SO2 specifically restrict consideration to only integral bases, how should this be covered?

WNCP Response: The intent is when working with the exponent laws the powers are

restricted to those having integral bases – however in the case of $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ the base will have to include simple fractions.

3. **Grade 9 Number SO 4 requires the order of operations with exponents. Is this required with rational numbers, or is it limited to integers?**

WNCP Response: From outcome N-2, students should be able to work with rational numbers with whole number exponents. They, therefore, should be able to do all the order of operations with rational numbers.

4. **In Grade 9, PR-4, an AI requires graphing the solution of a linear inequality on a number line. Since students have not met the concept of real numbers at this point, any graph on a number line should have an infinite number of holes, corresponding to irrational numbers. How are all rational number solutions to be graphed?**

WNCP Response: Though students are not formally introduced to irrational numbers in grade nine they do work with approximations of square roots and therefore know of the existence of irrational numbers. Also, they have been graphing linear relations with a solid line to represent all numbers in the solution therefore it is appropriate for them to use a solid line when graphing the solution of a linear inequality and not have an infinite number of holes for the irrational numbers.

Grade 2

1. **Please clarify Grade 2 Shape and Space (3-D Objects and 2-D Shapes). Sort 2-D shapes and 3-D objects using two attributes, and explain the sorting rule.**

One interpretation we have is to sort 3-D objects into a set that has two common attributes. For example, sort objects into a set with circles and with flat faces.

Another interpretation we have is to sort 3-D objects in two sets each with a different attributes. For example, sort objects into a set with flat faces and a set with circles. If this is the interpretation, how do we deal with objects that belong in both groups without going beyond grade 2?

WNCP Response: Your first interpretation is correct. Students in Grade 2 should be expected to sort 3-D objects into a set that has two common attributes.