

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

- 1. The answers to some of the publishers questions (October 18, November 2) refer to revisions to the Publishers Draft of the WNCP CCF for K–7 mathematics by stating “See the revised outcome” or “The indicator has been changed” (see examples below). Where can these revisions be seen so that we can develop appropriate breadth-and-depth resources?**

Examples:

Question 19 from Nov. 2 (re. Gr. 1): What is meant by the outcome “Investigate and predict the results of constructing and deconstructing 2-D shapes and 3-D objects, and verify predictions,” especially as it applies to *predict* and the use of names of shapes?

WNCP Response: See the revised outcome, “Replicate composite 2-D shapes and 3-D objects.” The new indicators are:

- Select appropriate 2-D shapes from a given set of 2-D shapes to construct a given composite 2-D shape.
- Select appropriate 3-D objects from a given set of 3-D objects to construct a given composite 3-D object.
- Predict and select the 3-D objects used to produce a composite 3-D object and verify by deconstructing the composite object.

Question 38 from Nov.2 (re. Gr.7): What does the indicator “Describe and explain examples of geometric constructions in the environment” actually mean?

WNCP Response: The indicator has been changed to “describe and explain examples of parallel line segments, perpendicular line segments, perpendicular bisectors and angle bisectors in the environment.” As well, “to solve problems” has been removed from the outcome.

Question 39 from Nov.2 (re. Gr.7): How does the indicator “Solve problems that require the use of geometric constructions” help interpret “Perform geometric constructions to solve problems?”

- **toward what content is this outcome leading students in Grade 8?**

WNCP Response: “To solve problems” has been removed from the outcome as well as the achievement indicator.

Question 32 from Oct.18: In Grade 7, how can probabilities be calculated without multiplying fractions? Is it assumed that students will only determine the probability of independent events by counting outcomes? In Grade 7, how large of a sample space is reasonable for finding probabilities without using fraction operations?

WNCP Response: Since students will be using such graphic organizers as tree diagrams to determine the probability, the sample space should be limited to 36 or fewer elements. Grade 7, Statistics and Probability, Outcomes 5 and 6, have been revised to make this explicit.

Question 34 from Oct.18: Grade 7 S&S (3-D/2-D)

Outcome 3—Perform geometric constructions including ...

AIs include references to both “draw” and “construct”

- d) Does construct refer to traditional geometric construction including straight edge and compass?**
- e) Should “draw” be changed to “construct” in the Achievement Indicators?**
- f) Construct multiply ways—please clarify.**

WNCP Response: This has been clarified in the wording of the outcome and the achievement indicators. The changes to the Publishers Draft are reflected in the November 2005 version posted on the WNCP Web site at www.WNCP.ca. An errata sheet will also be posted to reflect any outcome or achievement indicator changes made after November 2005. This will be posted under Publishers Draft, November 2005.

- 2. Please clarify the answer to Question 22 from Nov. 2, regarding the use of the term “variable” in Gr. 4 PR outcomes 5 and 6.**

In Grade 4, it is expected students will use a symbol for the unknown. In Grade 5, letter variables will be introduced. We noticed the use of a letter variable for an achievement indicator for outcome PR 1. As well, the Grade 4 outcomes use the term “variable” and the Grade 3 outcomes use the term “symbol.” Has this been revised?

WNCP Response: Yes, it has been revised. Please see the Publishers Draft, November 2005.

- 3. We would like clarification of the answer to Question 30 from Nov. 2, regarding Gr.4 SS outcome #4 (pasted below). The outcome says “including rectangular prisms and triangular prisms,” and the indicators mention these prisms only. Should the lessons avoid including any other 3-D objects?**

30. What is meant by “Describe, name, and construct 3-D objects, including rectangular prisms, triangular prisms”? Does including mean exclusively prisms? The question is posed because all outcomes focus on prisms; except that there is one indicator related to nets of all types of 3-D objects, including cones, cylinders and pyramids.

WNCP Response: Please see the Publishers Draft, November 2005. The outcome uses the term including. This would mean that these have to be addressed. There are no indicators that refer to cones, cylinders and pyramids.

4. **The answer to Question 31 from Nov. 2 indicates that Gr. 4 SS outcome 5 will be moved out. Where will it be moved to? Will it be replaced?**

31. Students need to focus on some of the attributes of cones, cylinders and pyramids before they explore nets, but there is no mention of exploring their attributes. Is this just assumed?

WNCP Response: This was an anomaly and will be changed for the final document. Outcome 5 in Shape and Space (3-D objects and 2-D shapes) will be moved out of Grade 4. It does not occur in grades K–7.

5. **The answer to Question 26 from Oct. 18 clarifies the distinction between “construct” and “draw” with respect to Gr. 6 SS outcome #5:**

WNCP Response: Construct refers to a physical model; draw refers to paper and pencil representations.

We understand this to mean that students will construct physical models of triangles, and shouldn’t be asked to represent triangles with paper and pencil. Is this correct?

WNCP Response: Our intention is that students construct using physical models and draw using paper and pencil.

Does this definition of construct also apply to Gr.7 SS outcome #3 “Perform geometric constructions including perpendicular line segments, parallel line segments, perpendicular bisectors, angle bisectors”?

WNCP Response: Geometric construction refers to creating drawings using a straight-edge and compass.

6. **Re. Gr. 4 N outcome #1,**

- **AI second bullet: “Write a given numeral using proper spacing without commas, e.g., 4 567.” Is the space between thousands and hundreds required even when four-digit numbers are presented in isolation, or just when they appear with numbers with five or more digits?**

WNCP Response: Please see the Publishers Draft, November 2005. There should be no space when writing 4 digit numerals and the most recent Publishers Draft reflects this. It was also addressed in an earlier publishers question that is posted on the WNCP Web stie.

- **AI eighth bullet: “Explain and show, with counters, the meaning of each digit in a given 4-digit numeral ...” Does “counters” include base ten blocks?**

WNCP Response: Please see the Publishers Draft, November 2005. This indicator now states... “Explain and show the meaning of each digit in a given 4-digit numeral

with all digits the same, e.g., for the numeral 2222...” This could include the use of concrete representations using counters or base ten blocks.

- 7. Re. Gr.4 N outcome #5 AI third bullet: “doubling and adding two more groups, e.g., for 7×6 think $5 \times 6 = 30$, and $30 + 6 + 6 = 42$ ” How does this example relate to doubling?**

WNCP Response: Please see the Publishers Draft, November 2005. This has been changed.

- 8. Re. Gr.4 N outcome #6, AI third bullet: “Create and solve a multi-word problem” Is “multi-word” problem the wording that is intended here or should it be “multi-step” problem or simply “word” problem?**

WNCP Response: Please see the Publishers Draft, November 2005. This has been changed to the following wording, “Create and solve a multiplication problem, e.g., 2- or 3-digit by 1-digit.” This question was addressed in an earlier publishers question that is posted on the WNCP Web site.

- 9. Re. Gr.4 PR outcome #5, AI first bullet: “Translate a visual representation of a given equation with one unknown into its symbolic form using a variable for the unknown.” What does visual representation mean in this context, and does it include both pictures of algebra tiles and other sorts of drawings?**

WNCP Response: The visual representation could be done in a variety of ways using pictures of manipulatives. Algebra tiles are not used in Grade 4.

- 10. The July 6 letter including “Criteria for Selection” specifies that “The units of measure used in the resource must conform to the units identified in the CCF.” Would Imperial units used in the context of teaching fractions be considered extraneous content or inappropriate?**

WNCP Response: We would consider the use of Imperial units extraneous as only SI is referenced in K–9.

- 11. The following Q refers to the Kindergarten Measurement outcome: 1. Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight) and volume (capacity).**

Is the use of the word “volume” intentional? Children can guess whether an object is tiny or big just by looking but how can they check their prediction whether one object occupies more space or less space than another object? Should the focus be on capacity instead, and leave the concept of volume until later? It’s not mentioned in Gr. 1, but filling is (thus capacity). Volume doesn’t appear until Gr. 5, so do we need to address it in Kindergarten?

WNCP Response: Kindergarten students should not be asked to distinguish between volume and capacity. Students may be asked to compare the capacity of two containers by filling them with water. They may also compare the volume of two boxes by filling them with cubes. The question at this age is, “Which container holds more?”

- 12. The following Q refers to one of the indicators for the Grade 1 Patterning outcome: 1. Demonstrate an understanding of repeating patterns ... The last indicator says “Identify the missing element(s) in a given increasing pattern. Is the reference to increasing patterns an error? Increasing patterns are not introduced until Grade 2.**

WNCP Response: Please see the Publishers Draft, November 2005. This has been changed.

- 13. Q37 from Nov. 9 response to publisher’s questions: According to the consultation draft for the K-9 curriculum (Jan 2005), tessellations using transformations and using transformations to describe tessellations is covered at grade 8. Is this where the use of positional change is leading?**

WNCP Response: This will be answered when the K–9 draft is distributed. We have provided all the detail we can for now.

- 14. Q41 from Nov. 9 response to publisher’s questions: There are 3 forms of linear equations that are solved at grade 7. At grade 8 (consultation draft), there are 7 forms. This seems high. Will some be moved down to grade 7?**

WNCP Response: Please see the Publishers Draft, November 2005. We are consulting on Grades 8 and 9 but there are no plans to move them at this time.

- 15. Q43 from Nov. 9 response to publisher’s questions: Could we get a list of software programs that most schools may have? For example, Excel is a useful tool to calculate mean, median, and mode. Can we assume that students will have access to spreadsheet programs?**

WNCP Response: This question has been addressed in an earlier publishers question. The WNCP ministries do not keep a list of software that schools use. The decision to purchase software is a school jurisdiction decision and is not mandated by provincial ministries of education.