

Teaching Notes: Mathtown

Components

- *Application Question: Fractional Addresses*
 - To develop Competency 2: Uses mathematical reasoning
 - To develop Competency 3: Communicates by using mathematical language
 - Can be used after completing *Nelson Mathematics Secondary Year Two, Cycle One* Chapter 9
- *Situational Problem: Triangle Park*
 - To develop Competency 1: Solves a situational problem
 - Can be used after completing *Nelson Mathematics Secondary Year Two, Cycle One* Chapter 10

Broad Area of Learning: Citizenship and Community Life; Personal and Career Planning

Educational Aim

- To enable students to discover the role of mathematics in society, by carrying out interdisciplinary projects involving related strategies and mathematical knowledge

Focus of Development

- To encourage students to take part in the life of their community
- To provide students with the ability to carry out plans when solving situational problems, making them aware of their potential

Cross-Curricular Competencies

- Uses information
- Solves problems
- Communicates appropriately

Concepts

Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense

- Reading, writing, various representations, patterns, properties
- Fractional, decimal and exponential (integral exponent) notation; percentage, square root

Geometry: Geometric Figures and Spatial Sense

- Plane figures
 - Measurement
 - Degree: angle and arc
- Angles
 - Complementary, supplementary
 - Formed by two intersecting lines: vertically opposite, adjacent
 - Formed by a transversal intersecting two other lines: alternate interior, alternate exterior, corresponding

Processes

Arithmetic: Different Ways of Writing and Representing Numbers

- Recognizing and using equivalent ways of writing numbers
 - Equivalent fractions
 - Simplification and reduction

- Locating numbers on a number line, abscissa (x -coordinate) of a point

Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation

- Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations

Geometry

- Finding unknown measurements
 - Angles
 - Unknown measurement in different situations

Application Question: Fractional Addresses

Preparation and Planning	
Pacing	5–20 min Introduction 30–40 min Individual work
Materials	
Masters	• Fractional Addresses
Can be done after completing	<i>Nelson Mathematics Secondary Year Two, Cycle One</i> Chapter 9

Introduction (Whole Class) 15–20 min

Review operations with fractions. Write several examples on the board involving addition, subtraction, multiplication, or division of fractions, mixed numbers, and fractions or mixed numbers with whole numbers. Ask for student volunteers to solve these examples.

Discuss the positioning of fractions and mixed numbers on a number line. Present a number line for students to view and list several fractions and mixed numbers, asking them to place these fractions and mixed numbers in the correct location on the number line.

Using the Application Question (Individual) 30–40 min

Read the introduction, central question, and criteria together. Ensure that students understand the question being asked and how to use the criteria to arrive at their answer. Remind students to use the Evaluation Checklist to complete the questions.

If students are having difficulty...	What you can do to help
Students may have difficulty determining the distance between each of the friend's houses.	<ul style="list-style-type: none"> • Remind students that they should use fraction operations to arrive at the answer. • Explain that the criteria are interwoven and must be considered in conjunction with other pieces of the criteria, not individually. • Encourage students to use a sketch to help them determine the placement of each friend's house.

Sample Solution (Thorough)

- A. For example, I will begin by sketching a street running east to west and placing Kevin's house at the western most end of that street. Next, I will use the distance criteria given and fraction operations to place the other five houses on the street.

Rowyn's house can be placed $\frac{1}{2}$ block from Kevin's house. Kito's house is $3\frac{1}{2}$ times as far from Kevin's house as Rowyn's house is from Kevin's house. Therefore, if I multiply the distance between Kevin's house and Rowyn's house ($\frac{1}{2}$ block) by $3\frac{1}{2}$, I will find the distance between Kevin's house and Kito's house. This distance is $1\frac{3}{4}$ blocks.

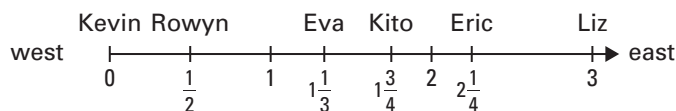
$$\frac{1}{2} \times 3\frac{1}{2} = \frac{1}{2} \times \frac{7}{2} = \frac{7}{4} = 1\frac{3}{4}$$

Then, since Kito's house is the same distance from Liz's house as it is from Rowyn's house, I can determine the location of Liz's house next. To find the distance between Kito's house and Rowyn's house, I will subtract their locations. $1\frac{3}{4} - \frac{1}{2} = 1\frac{3}{4} - \frac{2}{4} = 1\frac{1}{4}$. Therefore, Kito's house is $1\frac{1}{4}$ blocks from Rowyn's house. This means that Liz's house is also $1\frac{1}{4}$ blocks from Kito's house, but farther to the right. To find its location, I will add $1\frac{1}{4}$ to Kito's location, $1\frac{3}{4} + 1\frac{1}{4} = 2 + \frac{1}{4} + \frac{3}{4} = 2 + 1 = 3$. This places Liz's house at 3 blocks.

The next criteria requires me to find a sum before using it to determine the location of Eric's house. The distance from Eric's house to Kevin's house is the same as the sum of the distance from Rowyn's house to Kevin's house (which was given as $\frac{1}{2}$ block) and the distance from Kito's house to Kevin's house (which I have determined is $1\frac{3}{4}$ blocks). $\frac{1}{2} + 1\frac{3}{4} = \frac{2}{4} + 1\frac{3}{4} = 1 + \frac{2}{4} + \frac{3}{4} = 1 + \frac{5}{4} = 1 + 1\frac{1}{4}$ or $2\frac{1}{4}$ blocks. Therefore, the distance from Kevin's house to Eric's house is $2\frac{1}{4}$ blocks.

Finally, the distance from Kevin's house to Eva's house is the same as the distance from Kevin's house to Liz's house (which I have determined is 3 blocks) divided by the distance from Kevin's house to Eric's house (which is $2\frac{1}{4}$ blocks). $3 \div 2\frac{1}{4} = 3 \div \frac{9}{4} = \frac{3}{1} \times \frac{4}{9} = \frac{12}{9} = \frac{4}{3}$ or $1\frac{1}{3}$. This means that Eva's house is located $1\frac{1}{3}$ blocks from Kevin's house. I have now determined the location of all six houses.

B. For example,



Assessment of Learning: Fractional Addresses

Level	Competency	Overall judgment at end of cycle
5	Advanced	The student's competency exceeds the requirements.
4	Thorough	The student's competency clearly meets the requirements.
3	Acceptable	The student's competency barely meets the requirements.
2	Partial	The student's competency fails to meet the requirements.
1	Minimal	The student's competency clearly fails to meet the requirements.

Competency 2: Uses mathematical reasoning	
Evaluation criteria for the competency: Uses mathematical reasoning	Observable elements The student . . .
CR 3- Proper application of mathematical reasoning suited to the situation	<ul style="list-style-type: none"> • is able to identify which operation to use to determine each location • provides justification for their choice(s)/statement(s)
CR 2- Correct use of concepts and processes appropriate to the situation	<ul style="list-style-type: none"> • correctly performs operations on fractions to determine location of each house • draws correct number line with numerical labels and labels for each friend's name
CR 4- Proper organization of the steps in an appropriate procedure shows his/her work in a clear and organized manner	<ul style="list-style-type: none"> • follows correct steps in performing fraction operations, including multiplying by the reciprocal when doing division • shows his/her work in a clear and organized manner
CR 5- Correct justification of the steps in an appropriate procedure	<ul style="list-style-type: none"> • justifies each of the steps in performing the fraction operations
CR 1- Formulation of a conjecture	

Competency 2: Uses mathematical reasoning					
Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Formulation of a conjecture appropriate to the situation					
Correct use of the concepts and processes appropriate to the situation	<ul style="list-style-type: none"> applied the use of fraction operations appropriately and made no procedural errors when determining the distance between houses 	<ul style="list-style-type: none"> applied the use of fraction operations appropriately, but made minor procedural errors when determining the distance between houses 	<ul style="list-style-type: none"> applied the use of fraction operations but made some procedural errors when determining the distance between houses 	<ul style="list-style-type: none"> applied the use of some fraction operations but made several errors when determining the distance between houses 	<ul style="list-style-type: none"> made use of fraction operations inappropriately when determining the distance between houses
Proper application of mathematical reasoning suited to the situation	<ul style="list-style-type: none"> used mathematical concepts and processes that enabled him/her to meet the requirements of determining the distance between houses and constructing a number line efficiently 	<ul style="list-style-type: none"> used mathematical concepts and processes appropriate to determining the distance between houses and constructing a number line 	<ul style="list-style-type: none"> used some appropriate mathematical concepts and processes in determining the distance between houses and constructing a number line 	<ul style="list-style-type: none"> used very few mathematical concepts and processes in determining the distance between houses and constructing a number line 	<ul style="list-style-type: none"> used mathematical concepts and processes that were inappropriate for determining the distance between houses and constructing a number line
Proper organization of the steps in an appropriate procedure	<ul style="list-style-type: none"> presented a complete and organized procedure for determining the distance between houses that clearly outlined what was done or how it was done 	<ul style="list-style-type: none"> presented a complete and organized procedure for determining the distance between houses that clearly outlined what was done or how it was done, even though some of the steps were not explained 	<ul style="list-style-type: none"> presented a procedure for determining the distance between houses that was not very clear about what was done or how it was done, because the work was unclear or not well organized 	<ul style="list-style-type: none"> presented a procedure for determining the distance between houses that consisted of isolated elements of the given criteria, showing little or now work that clearly outlined what was done or how it was done 	<ul style="list-style-type: none"> presented a procedure for determining the distance between houses that was completely unrelated to the given criteria OR did not show any procedure

Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
<p>Correct justification of the steps in an appropriate procedure</p>	<ul style="list-style-type: none"> rigorously observed the rules and conventions of mathematical language in his/her explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> observed the rules and conventions of mathematical language in his/her explanation of how the given criteria were used to determine the distance between houses, despite some minor errors or omissions 	<ul style="list-style-type: none"> made some errors or was sometimes inaccurate in use of the rules and conventions of mathematical language in his/her explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> made several errors related to the rules and conventions of mathematical language in his/her explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> showed little or no concern for the rules and conventions of mathematical language in his/her explanation of how the given criteria were used to determine the distance between houses

Competency 3: Communicates by using mathematical language	
Evaluation criteria for the competency: Communicates by using mathematical language	Observable elements The student . . .
CR 1- Correct interpretation of a message involving at least one type of mathematical representation suited to the situation	<ul style="list-style-type: none"> • recognizes the purpose of the message • states the correct operations to use for determining the location of each friend's house
CR 2- Production of a message suited to the context, using appropriate mathematical terminology and following mathematical rules and conventions	<ul style="list-style-type: none"> • accurately determines the correct distance from Kevin's house to each of the other houses • accurately draws a number line showing the relative location of each of the houses

Competency 3: Communicates by using mathematical language					
Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Correct interpretation of a message involving at least one type of mathematical representation suited to the situation	<ul style="list-style-type: none"> • used elements of mathematical language and of everyday language efficiently in the explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> • used elements of mathematical language and of everyday language appropriately in the explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> • used some elements of mathematical language and of everyday language in the explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> • used a few appropriate elements of mathematical language and of everyday language in the explanation of how the given criteria were used to determine the distance between houses 	<ul style="list-style-type: none"> • used inappropriate elements of mathematical language and of everyday language in the explanation of how the given criteria were used to determine the distance between houses
Production of a message suited to the context, using appropriate mathematical terminology and following mathematical rules and conventions	<ul style="list-style-type: none"> • produced an articulate, coherent explanation of how the location of each house was determined that included all relevant information 	<ul style="list-style-type: none"> • produced a clear, well-organized explanation of how the location of each house was determined that included the relevant information 	<ul style="list-style-type: none"> • produced an explanation of how the location of each house was determined that included elementary, ambiguous, or repetitive information 	<ul style="list-style-type: none"> • produced an explanation of how the location of each house was determined that included confusing and unconnected information 	<ul style="list-style-type: none"> • produced an explanation of how the location of each house was determined that included erroneous or unrelated information

Situational Problem: Triangle Park

Preparation and Planning	
Pacing	10–15 min Introduction 30–45 min Individual work
Materials	<ul style="list-style-type: none">• a protractor• a ruler
Masters	<ul style="list-style-type: none">• Triangle Park
Can be done after completing	<i>Nelson Mathematics Secondary Year Two, Cycle One Chapter 10</i>

Introduction (Whole Class) 10–15 min

Review with students the definition of a quadrilateral. Ask for student volunteers to draw examples of quadrilaterals on the board.

Draw two parallel lines and a transversal passing through them on the board. Ask for student volunteers to label various angles or pairs of angles, including vertically opposite, adjacent, straight, supplementary, alternate interior, alternate exterior, and corresponding.

Using the Situational Problem (Individual) 30–45 min

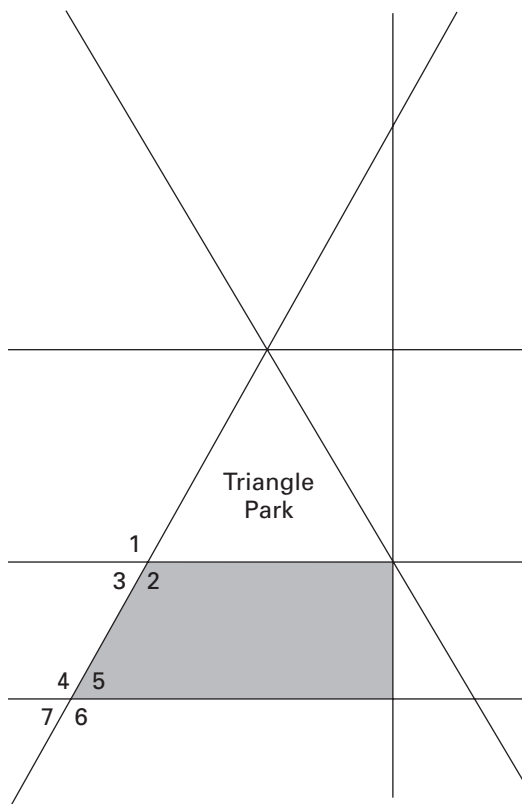
As a class, read *Triangle Park* and review the criteria given. Leave time for students to sketch a drawing of their neighbourhood streets. Remind students to use the Evaluation Checklist to help them complete the activity.

If students are having difficulty . . .	What you can do to help
Students may have difficulty including all types of angle pairs listed in their sketch.	<ul style="list-style-type: none">• Ask the student having difficulty to sketch for you the type of angle pair that is giving him/her trouble (separate from the drawing of the streets). Ensure students have a clear picture of what that type of angle pair should include, and then discuss ways they could incorporate that into their street drawing.

Sample Solution (Thorough)

- A. For example, I will start by drawing a triangle with all three angles equal. There are 180° in a triangle, so each angle will be 60° . I can use my protractor to draw the 60° angles. Then I will draw streets that go through each of the three sides of the triangle. Then I will draw some streets that are vertical and some streets that are horizontal. I will draw streets until I have formed at least one quadrilateral and until I think I have formed all of the angle pairs that are required, but I will make sure to draw at least six streets. I will check if I have formed all the angle pairs, and if I have not, I will add more streets to get the angle pairs I need.

B. For example,



Using the labels I added to the angles on my drawing, the following numbers represent the required pairs:

vertically opposite: 1 and 2, 4 and 6, 5 and 7

adjacent: 1 and 3, 2 and 3, 4 and 5, 5 and 6, 6 and 7, 4 and 7

straight: 1 and 3, 2 and 3, 4 and 5, 5 and 6, 6 and 7, 4 and 7

supplementary: 1 and 3, 2 and 3, 4 and 5, 5 and 6, 6 and 7, 4 and 7

alternate interior: 3 and 5, 2 and 4

alternate exterior: 1 and 6

corresponding: 1 and 4, 2 and 6, 3 and 7

The vertically opposite angles have the same measure; that is always true. The alternate interior angles in each pair have the same measure; the alternate exterior in each pair have the same measure; the corresponding angles in each pair have the same measure. I know this because the streets I drew to form these pairs are parallel. I also could have used my protractor to measure the angles and determine which ones had the same measure.

I used grey shading to show a quadrilateral formed by the streets.

- C. For example, I followed the plan that I had outlined in Step A. I did have to add the bottom horizontal street after my first attempt because not all of the angle pairs had been formed by my other streets.
- D. For example, My solution seems to be complete. I have drawn at least six lines to form all of the angle pairs that were required and at least one quadrilateral. It seems weird to have a triangle at the centre of the neighbourhood, but I could have made all of my streets parallel to two of the three sides of the triangle. This would have made the street layout more like a grid that I am used to for neighbourhood streets.

Assessment of Learning: Triangle Park

Competency 1: Solves a situational problem

Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Oral or written explanation showing that the student understands the situational problem	<ul style="list-style-type: none"> took all the given criteria (such as identifying a quadrilateral, labelling specified angles, placing a triangular park in the centre, or including at least six streets) into account in solving the situational problem 	<ul style="list-style-type: none"> took most of the given criteria (such as identifying a quadrilateral, labelling specified angles, placing a triangular park in the centre, or including at least six streets) into account in solving the situational problem 	<ul style="list-style-type: none"> took some of the given criteria (such as identifying a quadrilateral, labelling specified angles, placing a triangular park in the centre, or including at least six streets) into account in solving the situational problem 	<ul style="list-style-type: none"> took only a few of the given criteria (such as identifying a quadrilateral, labelling specified angles, placing a triangular park in the centre, or including at least six streets) into account in solving the situational problem 	<ul style="list-style-type: none"> took into account no more than one of the given criteria (such as identifying a quadrilateral, labelling specified angles, placing a triangular park in the centre, or including at least six streets) while solving the situational problem
Mobilization of mathematical knowledge appropriate to the situational problem	<ul style="list-style-type: none"> presented a correct solution or one with minor errors not related to the geometry of angles 	<ul style="list-style-type: none"> presented a solution with few errors related to the geometry of angles 	<ul style="list-style-type: none"> presented a solution with errors related to the geometry of angles 	<ul style="list-style-type: none"> presented a partial solution of only the easiest steps with several errors related to the geometry of angles 	<ul style="list-style-type: none"> presented a partial solution with several major errors related to the geometry of angles OR presented no solution
Development of a solution (i.e. a procedure and a final answer) appropriate to the situational problem	<ul style="list-style-type: none"> checked his/her final sketch of the streets and labelling of specific features and corrected it, if necessary 	<ul style="list-style-type: none"> checked the main steps in his/her final sketch of the streets and labelling of specific features, and corrected them, if necessary 	<ul style="list-style-type: none"> checked some of the steps in his/her final sketch of the streets and labelling of specific features 	<ul style="list-style-type: none"> made little attempt to question the accuracy of his/her final sketch of the streets and labelling of specific features 	<ul style="list-style-type: none"> did not question the accuracy of his/her final sketch of the streets and labelling of specific features

Cross-Curricular Competencies					
Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Cross-Curricular Competency 1: Uses information					
Critical analysis of information	<ul style="list-style-type: none"> a clear analysis was provided with regards to the practicality and completeness of the final sketch for the neighbourhood layout 	<ul style="list-style-type: none"> an analysis was provided with regards to the practicality and completeness of the final sketch for the neighbourhood layout 	<ul style="list-style-type: none"> some analysis was provided with regards to the practicality and completeness of the final sketch for the neighbourhood layout 	<ul style="list-style-type: none"> little analysis was provided with regards to the practicality and completeness of the final sketch for the neighbourhood layout 	<ul style="list-style-type: none"> no analysis was provided with regards to the practicality and completeness of the final sketch for the neighbourhood layout
Logical organization of information	<ul style="list-style-type: none"> steps for the creation of the neighbourhood layout were clearly structured and well organized 	<ul style="list-style-type: none"> steps for the creation of the neighbourhood layout were structured and organized 	<ul style="list-style-type: none"> steps for the creation of the neighbourhood layout were clear and organized but some errors were made 	<ul style="list-style-type: none"> steps for the creation of the neighbourhood layout were somewhat clear and organized 	<ul style="list-style-type: none"> steps for the creation of the neighbourhood layout were not clearly organized and were difficult to understand
Cross-Curricular Competency 2: Solves problems					
Accurate definition of the problem	<ul style="list-style-type: none"> student showed a clear understanding of the problem presented, with regards to creating a neighbourhood layout meeting certain specifications, and clearly demonstrated this in the explanation 	<ul style="list-style-type: none"> student showed a clear understanding of the problem presented, with regards to creating a neighbourhood layout meeting certain specifications 	<ul style="list-style-type: none"> student showed a somewhat clear understanding of the problem presented, with regards to creating a neighbourhood layout meeting certain specifications 	<ul style="list-style-type: none"> student showed a lack of complete understanding of the problem presented, with regards to creating a neighbourhood layout meeting certain specifications 	<ul style="list-style-type: none"> student did not show any understanding of the problem presented, with regards to creating a neighbourhood layout meeting certain specifications

Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Cross-Curricular Competency 2: Solves problems					
Variety and relevance of solutions proposed	<ul style="list-style-type: none"> an accurate solution was proposed for the design of a neighbourhood meeting certain criteria, with a clear explanation provided 	<ul style="list-style-type: none"> an accurate solution was proposed for the design of a neighbourhood meeting certain criteria 	<ul style="list-style-type: none"> a solution was proposed for the design of a neighbourhood meeting certain criteria but it contained some errors 	<ul style="list-style-type: none"> an inaccurate solution was proposed for the design of a neighbourhood meeting certain criteria 	<ul style="list-style-type: none"> no solution was proposed for the design of a neighbourhood meeting certain criteria
Evaluation of possible strategies	<ul style="list-style-type: none"> an accurate evaluation of the plan for designing this neighbourhood was provided and alternative strategies and steps were discussed 	<ul style="list-style-type: none"> an accurate evaluation of the plan for designing this neighbourhood was provided 	<ul style="list-style-type: none"> an evaluation of the plan for designing this neighbourhood was provided but it lacked several details 	<ul style="list-style-type: none"> an unclear evaluation of the plan for designing this neighbourhood was provided 	<ul style="list-style-type: none"> no evaluation of the plan for designing this neighbourhood was provided
Scope of the analysis	<ul style="list-style-type: none"> a detailed and accurate analysis of the completeness and practicality of the final design for this neighbourhood was performed 	<ul style="list-style-type: none"> an accurate analysis of the completeness and practicality of the final design for this neighbourhood was performed 	<ul style="list-style-type: none"> an analysis of the completeness and practicality of the final design for this neighbourhood was performed but contained some errors 	<ul style="list-style-type: none"> an inaccurate analysis of the completeness and practicality of the final design for this neighbourhood was performed 	<ul style="list-style-type: none"> no analysis of the completeness and practicality of the final design for this neighbourhood was performed
Application of strategies developed in other situations	<ul style="list-style-type: none"> there was clear evidence of the use of strategies developed previously in the plan for designing this neighbourhood, with a detailed explanation of their usefulness 	<ul style="list-style-type: none"> there was clear evidence of the use of strategies developed previously in the plan for designing this neighbourhood 	<ul style="list-style-type: none"> there was evidence of the use of strategies developed previously in the plan for designing this neighbourhood 	<ul style="list-style-type: none"> there was a small amount of evidence of the use of strategies developed previously in the plan for designing this neighbourhood, but they were not explained 	<ul style="list-style-type: none"> there was no evidence of the use of strategies developed previously in the plan for designing this neighbourhood

Evaluation Criteria	Advanced	Thorough	Acceptable	Partial	Minimal
Competency 9: Communicates appropriately					
Coherence of the message	<ul style="list-style-type: none"> wrote a clear and concise explanation as to how the neighbourhood was designed to include all necessary criteria 	<ul style="list-style-type: none"> wrote an explanation as to how the neighbourhood was designed to include all necessary criteria 	<ul style="list-style-type: none"> wrote an explanation as to how the neighbourhood was designed to include all necessary criteria that sometimes lacked clarity 	<ul style="list-style-type: none"> wrote an explanation as to how the neighbourhood was designed to include all necessary criteria that was difficult to understand 	<ul style="list-style-type: none"> did not provide an explanation as to how the neighbourhood was designed to include all necessary criteria
Use of appropriate vocabulary or symbols	<ul style="list-style-type: none"> used precise mathematical language in the explanation regarding the design of the neighbourhood 	<ul style="list-style-type: none"> adequately included mathematical language in the explanation regarding the design of the neighbourhood 	<ul style="list-style-type: none"> used mathematical language in the explanation regarding the design of the neighbourhood that sometimes lacked clarity 	<ul style="list-style-type: none"> did not adequately include mathematical language in the explanation regarding the design of the neighbourhood 	<ul style="list-style-type: none"> did not attempt to include mathematical language in the explanation regarding the design of the neighbourhood
Self-analysis and evaluation	<ul style="list-style-type: none"> student gave a precise analysis of the completeness and practicality of his/her neighbourhood design, with the inclusion of clear and accurate details 	<ul style="list-style-type: none"> student gave an accurate analysis of the completeness and practicality of his/her neighbourhood design 	<ul style="list-style-type: none"> student gave an analysis of the completeness and practicality of his/her neighbourhood design, but the analysis contained some inaccurate information 	<ul style="list-style-type: none"> student gave an unclear analysis of the completeness and practicality of his/her neighbourhood design 	<ul style="list-style-type: none"> student did not give an analysis of the completeness and practicality of his/her neighbourhood design