MODIFIED LESSON SPECIFICATIONS AND INSTRUCTIONAL GUIDES – TP 1 OF EO M122.05

A-CR-CCP-701/PG-001

EO M122.05 – DETERMINE A GRID REFERENCE

1. **Performance.** Determine a Grid Reference.

2. **Conditions**

   a. Given:

      (1) topographical/military maps;

      (2) material to construct a romer;

      (3) supervision; and

      (4) assistance as required.

   b. Denied: N/A.

   c. Environmental: Suitable classroom facilities or training area large enough to accommodate entire group during map work.

3. **Standard.** In accordance with specified references, the cadet shall determine four- and six-figure Grid References (GR) (within the correct grid, and to 100 metres accuracy, respectively), for a series of features on a topographical map.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain, demonstrate, and have the cadets practice determining a four-figure GR, in that: a. four-figure GRs will have four numerical digits derived from the numbers assigned to the eastings (X axis) and northings (Y axis) on the map sheet; b. the numbers are listed by recording the two-digit easting followed by the two-digit northing; and c. the grid lines that intersect in the bottom left corner of the grid square in question identify the grid square. **Note:** Instructors will provide three-points for cadets to use to identify the four-figure GR, and three points for cadets to locate using a four-figure GR.	Demonstration and Performance	10 min	A2-004 (Chapter 6, art 602)

5. **Time**

   a. Introduction/Conclusion: 5 min

   b. Demonstration and Performance: 10 min

   c. Total: 15 min

6. **Substantiation.** The demonstration-performance method was chosen to allow cadets to participate in supervised exploration of practical instructional material. This method provides the instructor the

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opportunity to introduce the subject matter, demonstrate and explain procedures, and supervise the cadets while they imitate the skill. This method appeals to all learning styles.

7. **References.** A2-004 B-GL-382-005-FP-001 Canadian Forces. (1976). *Maps, Fields, Sketching, and Compasses* (Vol. 8). Ottawa, ON: The Department of National Defence.

8. **Training Aids**

   a. Presentation aids (i.e. whiteboard/flipchart/OHP) appropriate for classroom/training area;

   b. Topographical/military maps;

   c. Compass with romer; and

   d. Example of constructed romer.

9. **Learning Aids**

   a. Topographical/military maps (one per two cadets); and

   b. Materials for the construction of a romer.

10. **Test Details.** There is no formal assessment of this EO. Instructors will confirm the cadets' knowledge of determining four- and six-figure GRs during the end of lesson check.

11. **Remarks.** Cadets are to be provided with adequate time during FTXs to practice this skill.

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ROYAL CANADIAN ARMY CADETS

GREEN STAR

INSTRUCTIONAL GUIDE

SECTION 5

EO M122.05 – DEMONSTRATE A GRID REFERENCE

Total Time:	15 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located at Chapter 4 of the QSP. Specific uses for said resources are identified throughout the Instructional Guide, within the teaching point for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prior to instructing this lesson the instructor shall pre-select grid references to be used in the practical components of this lesson.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

The demonstration and performance method was chosen to allow cadets to participate in supervised exploration of practical instructional material. This method provides the instructor the opportunity to introduce the subject matter, demonstrate and explain procedures, and supervise the cadets while they imitate the skill. This method appeals to all learning styles.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall be expected to determine four-figure Grid Reference (GR) (within +/- 1000 and 100 metres accuracy, respectively), for a series of features on a topographical map.

IMPORTANCE

As an army cadet it is important to know how to use the grid system. Since the grid system is the basis of map reading, the concept of a four-figure GR will be a stepping stone to becoming a strong map-reader. A GR details the location of a grid square on a map, and prevents confusion about location. Communication about exact locations over the radio is made possible with an understanding of a GR.

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Teaching Point 1 **Explain and Demonstrate a Four-Figure GR**

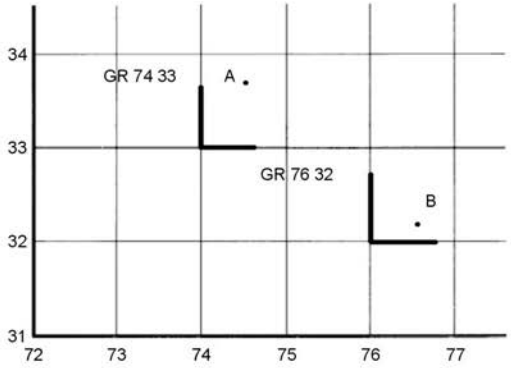
Time: 10 min Method: Interactive Lecture

GRID REFERENCE

The military traditionally identify grid lines by stating the two-digit number of each grid line. When a location is identified using the grid system it is call a "Grid Reference" (GR). When giving a GR to a square, the reference is always to the southwest (bottom left) corner of the square. GRs are always given with the easting value first, followed by the northing value.

FOUR-FIGURE GR

A four-figure GR is used to identify a specific 1000 metre by 1000 metres grid square. It will have four numerical digits derived from the numbers assigned to the eastings on the X-axis, and the northings on the Y-axis, where the grid lines intersect at the bottom left corner of the grid square.



B-GL-382-005/PF-001, Military Training, Volume 8, Maps, Field Sketching and Compasses

Figure 11-5-1 Four-Figure GR



The instructor will provide a minimum of three practice points for the cadets to use in determining a four-figure GR. It is important for the cadet to be equally able to identify a location on a map when given the GR and to determine the GR for a location indicated on a map.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. When giving a GR, the reference is always to which corner of the square?

Q2. When giving a four-figure GR, in what order are the numbers given?

Q3. A four-figure GR identifies a grid square of what size?

ANTICIPATED ANSWERS

A1. Southwest or bottom left corner.

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A2. Eastings then northings, or X-axis then Y-axis.

A3. 1000 metres by 1000 metres.

END OF LESSON CONFIRMATION

The instructor shall provide two points for the cadets to use in determining four-figure GRs.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Knowing how to determine a four-figure GR is essential for functioning safely in the field, for determining the accurate location of an object or oneself, and for communicating that position to others.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

A2-004 B-GL-382-005-FP-001 Canadian Forces. (1976). *Maps, Fields, Sketching, and Compasses* (Vol. 8). Ottawa, ON: National Defence.

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