EO C490.05 – NAVIGATE A ROUTE USING A MAP AND COMPASS

1. **Performance**: Navigate a Route Using a Map and Compass

2. **Conditions**:

   a. Given:

      (1) Calculator,

      (2) Compass,

      (3) Paper,

      (4) Pen / pencil,

      (5) Predetermined declination,

      (6) Topographical maps (including one of the training area),

      (7) Supervision, and

      (8) Assistance as required.

   b. Denied: Nil.

   c. Environmental: Field setting or training area large enough to accommodate the entire group.

3. **Standard**: The cadet shall navigate a six-leg predetermined route no longer than two kilometres, using a map and compass.

4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Review the compass, to include: a. the principles behind the workings of a compass, b. the parts of the compass, c. magnetic declination, and d. how to set a predetermined declination.	Practical Activity	10 min	A2-036 (pp. 5-29 to 5-31) A2-041 (pp. 66–68)
TP2	Review topographical maps, to include: a. marginal information, and b. conventional signs.	Practical Activity	10 min	A2-041 (pp. 7–13, pp. 19–26)
TP3	Conduct an activity to have the cadets review grid references (GRs), to include: a. four-figure GRs, b. constructing a romer, and c. six-figure GRs.	Practical Activity	20 min	A2-041 (pp. 37–41)

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TP	Description	Method	Time	Refs
TP4	Conduct an activity to have the cadets review: a. determining distance on a map, to include: 1. measuring point-to-point; and 2. measuring along a route between two points; and b. determining bearings on a map, to include: 1. the 16 points of a compass, 2. the degree system, 3. the three norths, and 4. types of bearings.	Practical Activity	20 min	A2-041 (pp. 16–18, pp. 47–51, pp. 68–70) C2-041 (p. 50)
TP5	Conduct an activity to have the cadets review: a. determining distance on the ground, to include: 1. determining personal pace; and 2. identifying factors that affect pace; and b. determining bearings on the ground.	Practical Activity	20 min	A2-041 (pp. 68–70) C0-111 (p. 530, p. 531) C2-041 (p. 106)
TP6	Have the cadets navigate a route using a map and compass.	Practical Activity	30 min	

5. **Time**:

a.	Introduction / Conclusion:	10 min
b.	Practical Activity:	110 min
c.	Total:	120 min

6. **Substantiation**: A practical activity was chosen for this lesson as it is an interactive way for the cadets to review the compass, topographical maps, GRs, distance on the map and on the ground, bearings on the map and on the ground, and to navigate a route using a map and compass in a safe and controlled environment. This activity contributes to the development of navigation skills and knowledge in a fun and challenging setting.

7. **References**:

a. A2-036 A-CR-CCP-121/PT-001 Director Cadets 3. (2003). *Royal Canadian army cadet reference book*. Ottawa, ON: Department of National Defence.

b. A2-041 B-GL-382-005/PT-001 Directorate of Army Doctrine 8. (2006). *Maps, field sketching, compasses and the global positioning system*. Ottawa, ON: Department of National Defence.

c. C0-111 ISBN 978-0-9740820-2-8 Tawrell, P. (2006). *Camping and wilderness survival: The ultimate outdoors book* (2nd ed.). Lebanon, NH: Author.

d. C2-041 ISBN 978-0-07-136110-3 Seidman, D., & Cleveland, P. (1995). *The essential wilderness navigator*. Camden, ME: Ragged Mountain Press.

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8. **Training Aids**:

   a. Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for the classroom / training area,

   b. Calculator,

   c. Compass,

   d. Constructed romer,

   e. Paper,

   f. Pen / pencil,

   g. Protractor, and

   h. Topographical maps (including one of the training area).

9. **Learning Aids**:

   a. Calculator,

   b. Compass,

   c. Paper,

   d. Pen / pencil,

   e. Predetermined declination, and

   f. Topographical maps (including one of the training area).

10. **Test Details**: Nil.

11. **Remarks**:

   a. TPs 1–5 are taught by learning stations. Divide the cadets into four groups and have the groups rotate between four learning stations: one station for TPs 1 and 2 and one station each for TPs 3–5.

   b. To preserve and reuse the maps, they should be covered or coated with mac tac to allow the use of dry-erase markers instead of pencils or pens.

   c. Assistant instructors and cadets who are qualified Survival Instructor may assist with this instruction.

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