ROYAL CANADIAN ARMY CADETS

RED STAR

INSTRUCTIONAL GUIDE

SECTION 7

EO C222.01 – PRACTICE NAVIGATION USING A MAP AND COMPASS

Total Time: 90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-702/PG-001, Chapter 4. Specific uses for said resources are identified throughout the Instructional Guide within the TP for which they are required.

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

Review the activities in TP2 to confirm local resources required and prepare the route to be used to include GRs and bearings.

If assistant instructors are not available, determine a safety bearing to a known location.

Prepare brain teaser clues/puzzle navigation pieces (word, picture or phrase) for each checkpoint.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP1 to give direction on procedures and to illustrate the application of rules for the navigation exercise.

A practical activity was chosen for TP2 as it is an interactive way to allow cadets to experience navigation in a safe, controlled environment. This activity contributes to physical fitness and to the development of navigation skills and knowledge in a fun and challenging setting.

A group discussion was chosen for TP3 as it allows the cadets to interact with their peers and share their knowledge, experiences, opinions, and feelings about navigation training.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have practiced navigation using a map and compass.

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IMPORTANCE

It is important for cadets to practice navigation using a map and compass as it is a skill set that must be practiced in order to build confidence and accuracy. Participation in these activities contributes to the development of navigation skills and knowledge in a fun and challenging setting. Cadets will rely on this skill set throughout navigation and expedition training.

Teaching point 1 **Conduct a Safety Briefing**

Time: 10 min Method: Interactive Lecture



Arrange the cadets so they can see any demonstrations and hear the safety briefing prior to participating in the activity.



This briefing is being conducted to pass on vital information and to answer any questions regarding the safe conduct of a navigation activity, to include:

- actions that can be taken if they become lost, may include:
  - returning to the previous checkpoint;
  - using a radio if available; or
  - following a safety bearing to a known location;
- a time limit for the activity of 55 minutes;
- boundaries set for the conduct of the activity;
- rules and safety procedures for the activity; and
- a narrative of the specific activity being conducted.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What actions shall be taken if a group becomes lost?

Q2. What is the time limit for this activity?

Q3. What are the boundaries for this activity?

ANTICIPATED ANSWERS

A1. If a group becomes lost, they should return to the previous checkpoint or follow a safety bearing to a known location.

A2. This activity will last no more than 55 minutes.

A3. The answers to this question will vary based on the local area being used.

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Teaching point 2 **Participate in a Navigation Activity**

Time: 55 min Method: Practical Activity



Select one of the following activities to be conducted in the time allocated. If time permits, try more than one activity. Prepare for each activity in advance using resources available.

NAVIGATION BRAIN TEASER

Using a map and compass, cadets will navigate to a predetermined point on the map. The course will consist of a minimum of six legs, approximately 100 to 200 m in length. At each point the cadets will be given simple clues (magnetic bearing, GR, or distance) directing them to the next checkpoint. The team that locates the most checkpoints and has the fastest time is the winning team.

COMPASS WORK AND PACING

Using a map and compass, cadets will follow a predetermined bearing on the map. The course will consist of a minimum of six legs, approximately 100 to 200 m in length. Following the bearing provided, each team will determine the number of paces and distance between each checkpoint. The team with the most accurate measurements of distance between each checkpoint and the fastest time is the winning team.

PUZZLE NAVIGATION

Using a map and compass, cadets will navigate along a predetermined route. At each checkpoint on the route, cadets will collect a puzzle piece. The puzzle could be a picture, word or phrase. The first team to collect all puzzle pieces, cross the finish line and solve the puzzle is the winning team.



This sample word puzzle when unscrambled will spell “CADET”:

- at checkpoint 1 the group collects a “D”;
- at checkpoint 2 the group collects a “T”;
- at checkpoint 3 the group collects a “A”;
- at checkpoint 4 the group collects a “C”;
- at checkpoint 5 the group collects a “E”;



An example of a picture puzzle can be found at Annex A, to be completed as follows:

(1) photocopy one picture for each team;

(2) cut the picture into pieces equal to the number of checkpoints;

(3) label each piece of the puzzle with the same team number;

(4) at each checkpoint the group will collect the same numbered puzzle piece; and

(5) at the end of the navigation the group will assemble the puzzle.

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ACTIVITY 1

OBJECTIVE

The objective of the Navigation Brain Teaser activity is to have the cadets, as members of a team, participate in point to point navigation.

RESOURCES

- Topographical map (one per team);
- Compass (one per team); and
- A predetermined navigation route.

ACTIVITY LAYOUT

- Have defined start and finish lines clearly marked.
- Position a clue at each point directing groups to the next point.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of four to six.
2. Issue each group a map and compass.
3. Give the clue for the first checkpoint to the cadet leading the group.
4. Start groups at two-minute intervals and record start times.
5. On a sheet of paper, have cadets record each clue in the order they complete each checkpoint.
6. Collect sheets and record the finish time for each group.



If available, use an assistant instructor at each checkpoint to give cadets the next clue, answer questions and to prevent groups from following each other or sharing answers.

SAFETY

N/A.

ACTIVITY 2

OBJECTIVE

The objective of the Compass Work and Pacing activity is to have cadets, as members of a team, participate in pacing and determining distance during navigation.

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RESOURCES

- Topographical map (one per team);
- Compass (one per team); and
- A predetermined pacing/navigation route.

ACTIVITY LAYOUT

Have defined start and finish lines clearly marked.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of four to six.
2. Issue each group a map and compass.
3. Have cadets transfer the course to be followed onto the maps.
4. Start groups at two-minute intervals and record start times.
5. On a sheet of paper, have cadets record paces and distance for each leg they complete.
6. Collect sheets and record the finish time for each group.



If available, use an assistant instructor at each checkpoint to answer questions and to prevent groups from following each other or sharing answers.

SAFETY

N/A.

ACTIVITY 3

OBJECTIVE

The objective of the Puzzle Navigation activity is to have the cadets, as members of a team, participate in point to point navigation.

RESOURCES

- Topographical map (one per team);
- Compass (one per team);
- Puzzle pieces (one per team, per checkpoint); and
- A predetermined navigation route.

ACTIVITY LAYOUT

- Have defined start and finish lines clearly marked.
- Position identical puzzle pieces at each checkpoint.

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ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of four to six.
2. Issue each group a map and compass.
3. Start groups at two-minute intervals and record start times.
4. Have the cadets collect one piece of the puzzle from each checkpoint.
5. Once across the finish line, cadets will solve the puzzle and give the answer to the instructor.



If available, use an assistant instructor at each checkpoint to give cadets the puzzle piece, to answer questions and to prevent groups from following each other or sharing answers.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the navigation activities will serve as the confirmation of this TP.

Teaching point 3 **Conduct a Debriefing**

Time: 15 min Method: Group Discussion

GROUP DISCUSSION



TIPS FOR ANSWERING/FACILITATING DISCUSSION

- Establish ground rules for discussion, e.g. everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

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SUGGESTED QUESTIONS

Q1. What navigation skills were required to complete the activity?

Q2. What was the hardest part of the activity to complete?

Q3. What was the most exciting part of this activity?

Q4. How will the activity help you with navigation in the future?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the group discussion will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the navigation activities as well as the group discussion will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Navigation using a map and compass is a skill that can also be used in situations outside the Cadet Program. True proficiency in the skill used during these activities can only be achieved by practicing. These activities allow the cadets the opportunity to develop their navigation skills and knowledge in a fun and challenging setting.

INSTRUCTOR NOTES/REMARKS

The intent of this activity is to give the cadet experience navigating with a map and compass, determining distance and following a bearing from point to point.

This activity may be conducted using any available map (topographical, orienteering or locally produced).

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REFERENCES

A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

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PUZZLE NAVIGATION



D Cdts, 2007, Ottawa, ON: Department of National Defence

Figure A-1 Puzzle Navigation

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