

# INTRODUCTION

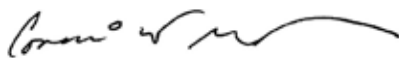
## Drawn to Victory

When the First World War began in 1914, Canada was barely 47 years old. It was a nation of eight million people mostly living in rural areas, and the idea of a distinct Canadian nationality was intangible. After all, Canada had no permanent standing army or navy and, as a dominion within the British Empire, its government was unable to pass legislation on foreign affairs. Yet, the First World War was a defining event in Canadian identity and by its end, Canada stood victorious and proud on the world stage.

The Drawn to Victory giant floor map and its 10 accompanying learning activities allow classes to explore Canada's role on the Western Front and discover how the war helped shape Canadian identity, with a special focus on cartography. Students will learn how Canadian pilots and surveyors helped to forever change the face of cartography and that one of the greatest weapons used during the conflict was not made of metal or steel, but paper.

The giant floor map shows Canada's major engagements, as well other major international conflicts, on the Western Front. While these battles are denoted by a single symbol, bear in mind that many were fought over large swaths of land. Each activity is designed to fill approximately one period, during which students will examine real trench maps, survey historical aerial photos from the war and piece together Europe using wartime mosaic-mapping techniques. I hope you enjoy your time with the map.

Lest we forget,



Connie Wyatt Anderson  
Chair, Canadian Geographic Education



## More About the Drawn to Victory Project

The Drawn to Victory giant floor map is part of a First World War commemoration project called A Nation Soars, aimed at educating Canadians on the evolution of aviation, aerial photography and cartography. Other components of the Drawn to Victory project include:

- One-hour documentary, Drawn to Victory
- Educator resources available at [anationsoars.ca](http://anationsoars.ca)
- Bilingual poster map with an overview and timeline of the evolution of cartography before, during and after the First World War
- Article in the October 2015 issue of *Canadian Geographic*



# ABOUT THIS RESOURCE

## The Activities

In this guide, you will find 10 curriculum-linked activities designed for all Canadian students at the elementary and secondary levels. For more information about the First World War or the Drawn to Victory project, visit [anationsoars.ca](http://anationsoars.ca).

### 1. The First World War

Students will explore the location, agents and importance of the First World War and develop their map reading skills by using cardinal directions and scale.

### 2. War Cartography

Students will investigate the evolution of cartography during the war, learning how maps were created and their value to combatants.

### 3. Reading a War Map

Students will explore the value of maps to infantry soldiers during the war by studying trench line maps.

### 4. Mosaic Mapping

Students will investigate the significance of mosaic maps during the war. They will study a series of historical photos and consider the integral role of photo interpreters.

### 5. Canadians in Battle

Students will explore how the use of maps during the war standardized mapping conventions, focusing on latitude and longitude.

### 6. Battle of Neuve Chapelle

Students will explore the Battle of Neuve Chapelle using a map artifact and determine if the battle was a success in the eyes of its British planners.

### 7. Canadian Air Aces

Students will be introduced to First World War air aces with a focus on Canada's Billy Barker and the airplanes that were used during the war.

### 8. Europe Then and Now

Students will examine the past landscape of Europe using historic aerial photos and compare it to the present.

### 9. Impact on Population

Students will explore the consequences of the war with a focus on the total (civilian and military) losses in France, Belgium, Germany and Great Britain.

### 10. Aftermath: The Geography of the War

Students will explore how the human and physical geography of Europe was changed because of the First World War.

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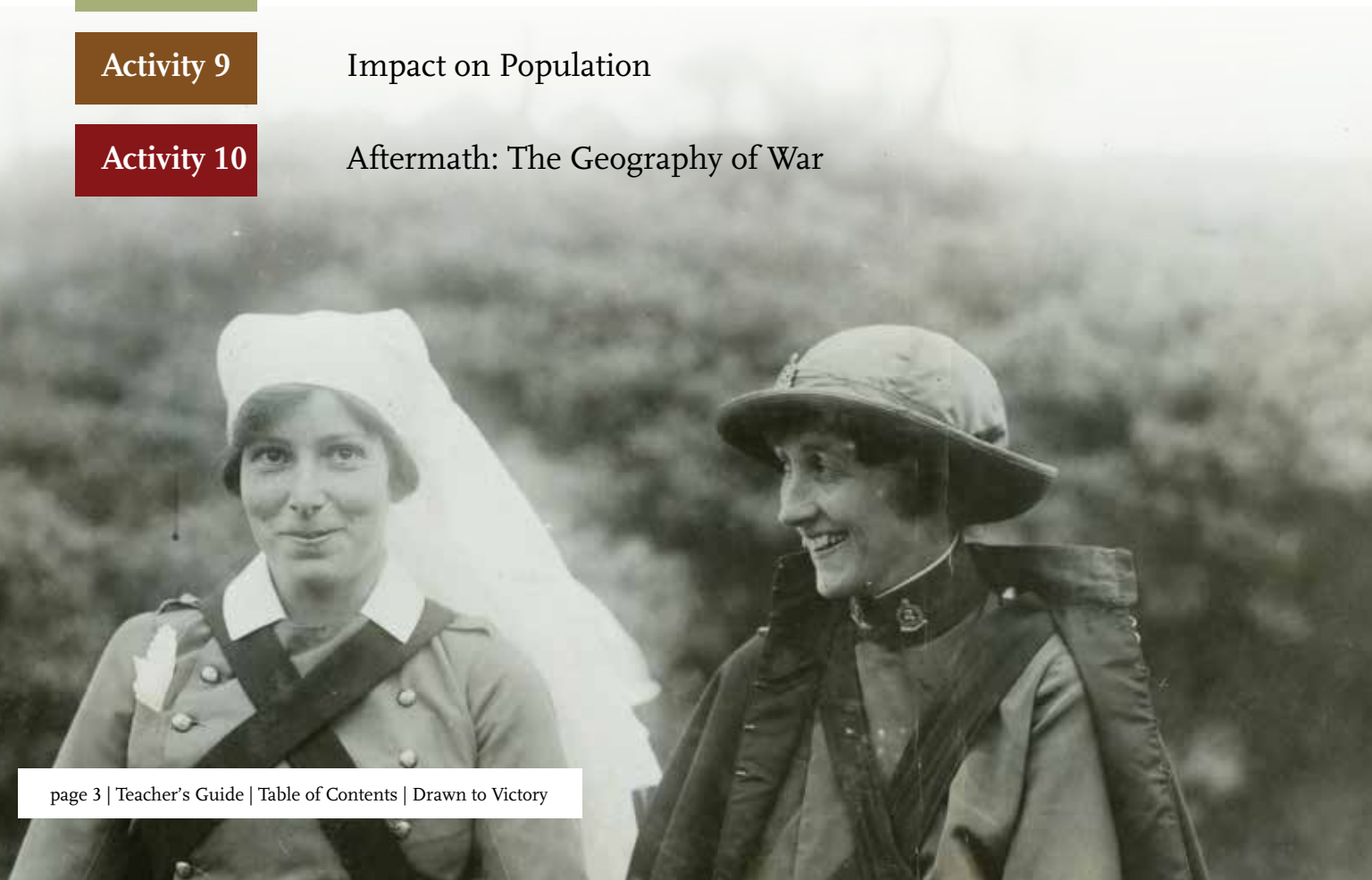
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## Activity 9

Impact on Population

## Activity 10

Aftermath: The Geography of War



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# 1

# THE FIRST WORLD WAR

## Learning objectives

- Students will explore the location, agents and importance of the First World War.
- Students will develop their map-reading skills by using cardinal directions and a scale to locate, describe and measure the setting of the Western Front.

## Grades

6-12

## Materials

- Pylons (16)
- Chains (12)
- War journal cards (5)
- Whiteboard markers (5)
- First World War photo cards (20) (optional)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)
- July/August 2014 issue of *Canadian Geographic* (1)

## Set-up

Review background information, gather all required materials and organize pylons by colour.

.../continued

## Background

The First World War (FWW) was a major conflict fought from 1914 to 1918. Also known as World War I and the Great War, its primary combatants were the Allies, or Allied Powers, and the Central Powers. The main members of the Allied Powers were France, Russia and Britain, while the key members of the Central Powers were Germany, Austria-Hungary and the Ottoman Empire (Turkey). Canada entered the war at the onset in 1914 as a dominion within the British Empire.

Most of the fighting took place in Europe along two fronts: western and eastern. The Western Front, a long line of trenches that ran from the coast of Belgium to Switzerland, is highlighted in light yellow on the giant floor map. The war had lasting effects; while it ended in total defeat for the Central Powers, it destroyed much of Europe, resulted in millions of deaths and sowed seeds of future strife. Canada emerged from the FWW proud and victorious, with an increased sense of nationhood. It also emerged grieving and divided, forever changed by the war's unparalleled military effort and its horrific costs.

## Introduction

Invite students to explore the giant floor map independently. Have them point out some of the key features they see on the map. Ask a series of guiding questions to assist in their exploration. (e.g., What countries are on the map? What physical features are depicted? What major cities do you see?)

Give an overview of the FWW, using the background information provided. Refer to the July/August 2014 issue of *Canadian Geographic* included in the trunk for additional information.

Using the red, blue and yellow pylons, locate the Central Powers, Allies and neutral countries shown on this map as a class. Place a red pylon on the Allies on this map (England, France, Belgium, Luxembourg) and a blue pylon on the Central Power on this map (Germany). Place a yellow pylon on countries that remained neutral on this map (Netherlands).

## Development

Have your students think about the FWW geographically, and have them show their answers to the following questions using the giant floor map:

### What is where?

Where did the war take place? What patterns do you see with the location of the Allies and Central Powers? Which side did Canada fight for?

### Why there?

Where were the western and eastern fronts of the war?

### Why care?

What effects did the war have on the physical and human geography of Europe? What lasting effects did the war have on Canada?



Draw students' attention to the light-yellow swath of colour on the map. Explain that this is the Western Front. The Western Front was the name given to a series of trenches that ran 700 kilometres from the Belgian coast to the Swiss border.

Ask a student to point to the compass rose on the map. Explain to or remind students that a compass rose is a symbol that shows directions on a map. Remind students that N shows North and discuss the other three cardinal directions.

Invite students to place one of the green pylons on the northern extent of the Western Front. Have the students explain its position based on using cardinal directions relative to the features shown on the map (e.g., the northern extent of the Western Front is on the coast of Belgium).

Continue by inviting students to place the other colours of pylons on the eastern, southern and western extents of the Western Front and ask students to highlight key map features located near these areas using the legend. Use a coloured chain to outline the entire Western Front area, and ask students to use the map's scale to calculate the length of the trenches.

Using students' hands, feet or the chains provided in the trunk, calculate the longest portion of the Western Front in kilometres using the map's scale.

## Conclusion

Show students pictures of soldiers in the trenches and discuss what they see, including their living conditions and what it would be like to be in war. Explain that from a geographical perspective, the range of landscapes on which the Western Front battlefields were established include sand, clay, chalk and rock, rivers, canals, valleys and cliffs, ridges and mountains, plains, forests and swamps. Using the map, have students explore the physical geography of the Western Front, taking into consideration how it played a major part in influencing the strategy, tactics and development of new weaponry and fighting techniques in the battles on the Western Front.

Divide students into six groups and give each a war journal card and whiteboard marker. Instruct students to pretend they are Canadian soldiers intelligence, who have to report back to headquarters about the current location of the front. Have students describe their location on the Western Front using cardinal directions and nearby towns as describers. Encourage each group to encode their letter and present it to the rest of the class and see if they can guess their location. At the end of the exercise, explain that these letters would have been censored or destroyed altogether for fear of the letter falling into the wrong hands and helping the enemy.

## Extend your geographic thinking

Encourage students to continue their education on the trenches with the game "Over the Top" ([warmuseum.ca/overthetop/game](http://warmuseum.ca/overthetop/game)). This interactive game, created by the Canadian War Museum, helps students personalize their experience of what it would be like to live in the trenches and learn about the daily struggles of FWW soldiers.

### Links to the Canadian National Standards for Geography

#### ESSENTIAL ELEMENT 1: THE WORLD IN SPATIAL TERMS

- Map, globe and atlas use

#### ESSENTIAL ELEMENT 2: PLACES AND REGIONS

- Political and historical characteristics of regions

#### ESSENTIAL ELEMENT 4: HUMAN SYSTEMS

- Territorial dispute and conflict

#### ESSENTIAL ELEMENT 6: THE USES OF GEOGRAPHY

- Effects of physical and human geographic factors on major historic events

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC INFORMATION

- Make generalizations and assess their validity
- Develop and present combinations of geographic information to answer geographic questions





# 2

# WAR CARTOGRAPHY

## Learning objectives

- Students will investigate the evolution of cartography during the First World War, learning how maps were created and their value to combatants.
- Students will create a hand-drawn map based on an aerial photograph from the era.

## Grades

6-12

## Materials

- Historical map cards (15)
- Aerial photos (16)
- Blank map cards (5)
- Whiteboard markers (5)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

## Set-up

Review background information, and separate the historical maps and aerial photos into two different piles.

.../continued

## Background

Before the First World War (FWW), the benefits of cartography were not fully realized. The European powers entered the war with inadequate topographic knowledge and no established procedures to create maps needed to conduct operations on the Western Front. In response to this glaring shortfall, mapping techniques and technologies developed with extreme urgency.

Topographic surveys remained an ongoing and crucial activity throughout the war, but it was the unexpected union of topographic surveys with cameras in airplanes that ultimately provided the timely and accurate view of the battlespace required both by commanders and by soldiers on the ground. Maps were used for many purposes, including making defensive preparations, planning offensives and training.

Maps of the era depicted details ranging from trench lines and battle plans to troop dispositions and fortification plans. Highly detailed maps were created that showed trenches, barbed-wire entanglements, machine gun placements, artillery batteries, airfields, barracks and other positions.

These maps were produced by specialized cartographic military units based on direct observation, aerial reconnaissance, sound ranging and other methods.

## Introduction

Invite students to explore the giant floor map. Spend several minutes studying the features and information on the map. Ask students to identify different symbols on the map such as battles, Canadian battles, capital cities and major transportation routes. Check for understanding by playing a game of Simon Says.

Have a discussion about the types of symbols used on the map, focusing on why they may have been selected. Would your students change any of them? Why or why not?

## Development

Read aloud the following quote:

“A map is a weapon.”

— Lt. Col. E.M. Jack, *Royal Engineers, Maps GHQ, British Expeditionary Forces*

As a class, discuss the quote and have students brainstorm how a map could have been seen as a weapon in the First World War.

Divide the class into small groups and hand out a historical map card to each. Ask groups to study their maps, locate the areas their map depicts on the giant floor map and report to the class using both their map and the giant floor map:

- the type of map they have
- a description of the main features depicted on the map
- where their map is located
- first impressions of their map
- features similar to or different from the giant floor map

Revisit the list of uses that maps have during wartime, and ask about the usefulness of their map to a FWW soldier and/or commander. Provide an overview of the evolution of cartography during the FWW using the information provided in the background section. Be sure to make note of how maps were created, emphasizing the role of the camera and the airplane. Explain that the First World War saw the dawn of aerial warfare. Aviation ceased to be about breaking flight records and became a new way of seeing. In 1915, the British unveiled the first camera designed specifically for air photo reconnaissance. Before long, the Allies realized the mapping potential of aerial photography. Their first effort to revise maps from imagery was a manual process to transfer photo details onto a map framework using mechanical dividers; as the war progressed, so did the technology associated with the process.

## Conclusion

Reassemble the class into their groups and distribute FWW aerial photos to each. Ask each group to study their photos, locate their aerial photos on the floor map and report the following to the class:

- a description of the aerial photo
- approximate area of the photograph
- the usefulness of their photo to a cartographer

Divide students into small groups and distribute a blank map card to each. Instruct students to use their group's aerial photo to draw a FWW map, keeping in mind the usefulness of it to a soldier and/or commander and incorporating the following map conventions:

- legend or key
- compass rose or north arrow
- neatline (map border)
- title

Have each group share their maps with the class, highlighting their map's area on the giant floor map.

## Extend your geographic thinking

More than a century ago, one of the ways photographs were taken was with a stereoscopic camera. This camera captures two slightly different images of the same subject at one time through the use of two lenses. The resulting two images are then put in a stereoscopic viewer, and when a person looks through the viewer, the photographs appear as one 3-D image. Have students research stereoscopy and how it relates to human vision, and then build their own stereoscopic camera. Once complete, give students the stereoscopic images from the First World War and have them describe what they see.

### Links to the Canadian National Standards for Geography

#### ESSENTIAL ELEMENT 1: THE WORLD IN SPATIAL TERMS

- Map, globe and atlas use

#### ESSENTIAL ELEMENT 2: PLACES AND REGIONS

- Political and historical characteristics of regions

#### ESSENTIAL ELEMENT 4: HUMAN SYSTEMS

- Territorial dispute and conflict

#### ESSENTIAL ELEMENT 6: THE USES OF GEOGRAPHY

- Effects of physical and human geographic factors on major historic events

#### GEOGRAPHIC SKILL 3: ORGANIZING GEOGRAPHIC INFORMATION

- Prepare various forms of maps as a means of organizing geographic information

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC INFORMATION

- Develop and present combinations of geographic information to answer geographic questions



**Learning objective**

- Students will explore the value of maps to infantry soldiers during the First World War by studying trench-line maps.

**Grades**

6-12

**Materials**

- First World War photo cards (20)
- Reading a trench map card (5)
- Colour cards (30)
- Pylons (16)
- Chains (12)
- Trench symbol cards (9)
- Blank map card (5)
- Whiteboard markers (5)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Review background information, and set out and divide all required cards into piles to easily access throughout the lesson.

.../continued

**Background**

The First World War (FWW) was fought mostly by soldiers on foot, called infantry, in trenches. The era saw rapid advances in metallurgy, chemistry and high-precision mass production. Seemingly overnight, weapons technology became immeasurably more advanced than it was just a few decades before. These new technologies, including artillery, mine warfare, airplanes, flamethrowers, poison gas, tanks and maps, forever altered the nature of trench warfare.

Maps and their ability to familiarize a soldier with enemy-held terrain, weapon positions, obstacles and trench networks were an integral part of the planning for any successful offensive in the FWW. Before long, commanders realized that even the lowest-ranking soldier could use a map. By the end of the conflict, there were almost 5,000 people working on map-making in the British and Commonwealth service, and over 32 million maps had been printed.

Today trench maps are an invaluable resource for researchers studying FWW battlefields, detailing the locations of front lines, communication trenches, enemy positions, strong points and defences. They also show the names of farms, woods and villages that are featured in FWW histories, personal stories and war diaries.

**Introduction**

Encourage students to explore the giant floor map. Ask: What do you see? What does the map tell you?

Provide a brief overview of the First World War using the background information provided above, as well as in Activity 1: The First World War and the July/August issue of *Canadian Geographic* in the trunk. Reinforce that trenches and infantry were a major component of the war.

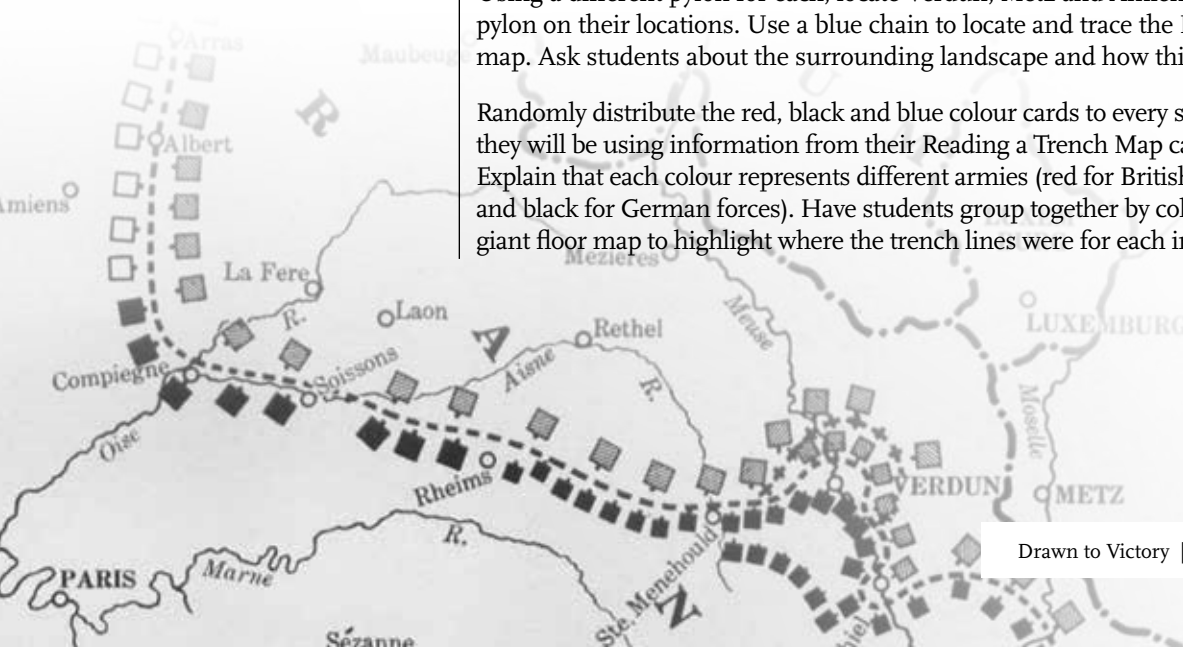
Using the First World War photo cards, show students photos of trench warfare and discuss what they think working in it would have been like. Have students outline the Western Front on the giant floor map using the coloured chains.

**Development**

Line up students along the perimeter of the giant floor map. Hand out copies of the Reading a Trench Map card to pairs of students.

Using a different pylon for each, locate Verdun, Metz and Amiens on the giant map, and place a pylon on their locations. Use a blue chain to locate and trace the Meuse River on the giant floor map. Ask students about the surrounding landscape and how this area was used during the war.

Randomly distribute the red, black and blue colour cards to every student. Inform students that they will be using information from their Reading a Trench Map card to add to the giant floor map. Explain that each colour represents different armies (red for British forces, blue for French forces and black for German forces). Have students group together by colour and place their cards on the giant floor map to highlight where the trench lines were for each in the spring of 1916.



## Conclusion

Ask your students: How were maps valuable to soldiers in the trenches of the First World War? What features were important to include on a map for soldiers? Have a class discussion on how students think soldiers used maps in trenches and what it may have been like to live there.

Divide students into small groups or pairs and distribute a different trench map symbols card to each. Have groups examine their symbols. Ask: What do your symbols tell you about how the war was fought? Have each group share their symbols and thoughts with the class.

Inform students that they are going to use their trench map symbols cards to turn the giant floor map into a trench map. Have students select a spot on the giant floor map within the light yellow area (representing the British and Canadian trenches) where they feel their symbols best fit and place their card on the map. Have students stand around the map and examine the geography of their new trench map discussing any patterns or trends they observe.

## Extend your geographic thinking

Have students research a different type of technology used throughout the First World War. It can be related to medical technology, communications, transportation or weaponry. Once students have conducted some research, have them determine where this item or technology was used and design their own map symbol. Using the giant floor map or a blank map of Europe, have students plot their new symbol on the map. Place these symbols around the room and have a gallery walk on FWW technological developments and where they were used.

### Links to the Canadian National Standards for Geography

#### ESSENTIAL ELEMENT 1: THE WORLD IN SPATIAL TERMS

- Map, globe and atlas use

#### ESSENTIAL ELEMENT 2: PLACES AND REGIONS

- Political and historical characteristics of regions

#### ESSENTIAL ELEMENT 4: HUMAN SYSTEMS

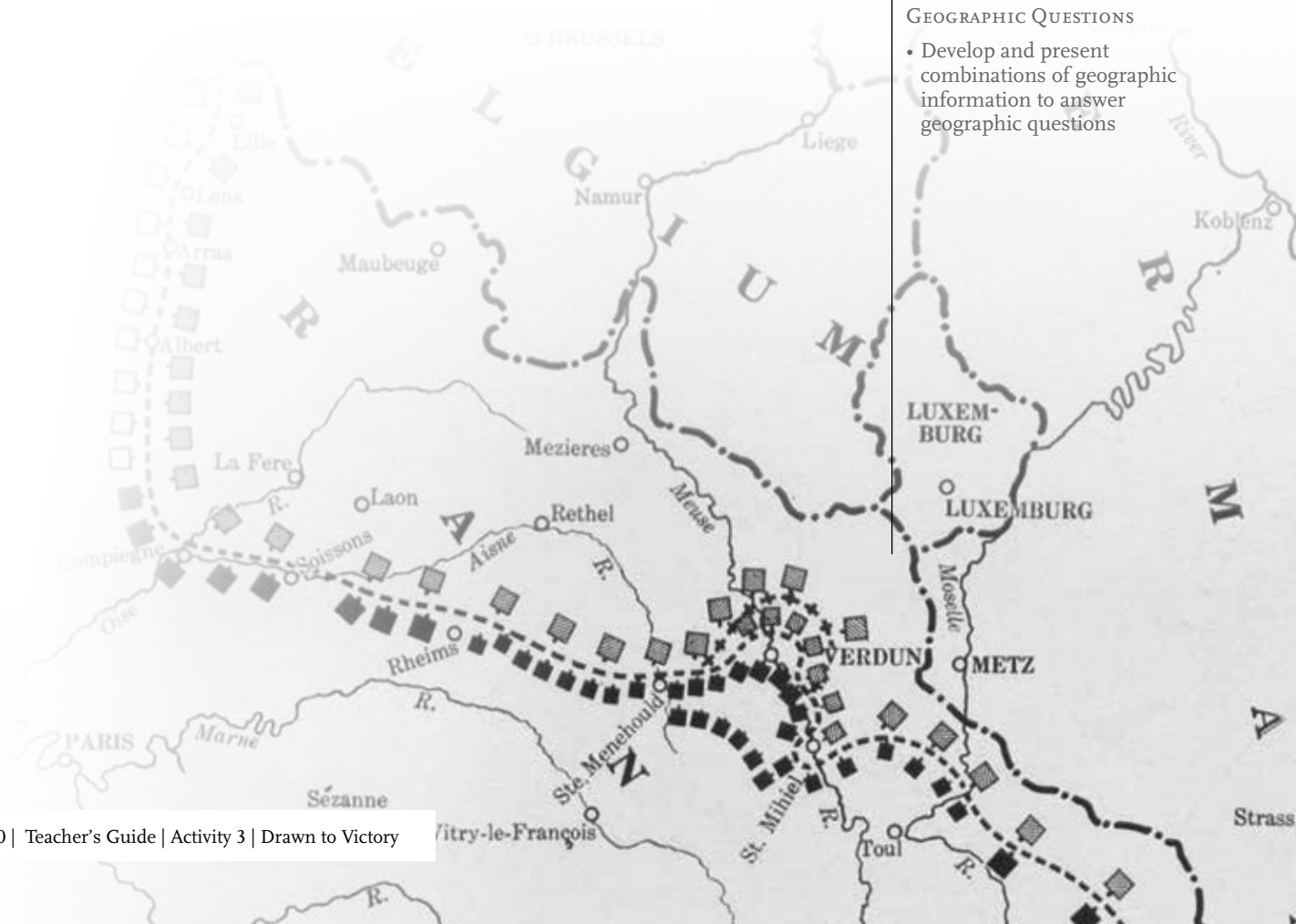
- Territorial dispute and conflict

#### GEOGRAPHIC SKILL 4: ANALYZING GEOGRAPHIC INFORMATION

- Make inferences and draw conclusions from maps and other geographic representations

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC QUESTIONS

- Develop and present combinations of geographic information to answer geographic questions



# 4

# MOSAIC MAPS

## Learning objectives

- Students will investigate the significance of mosaic maps during the First World War.
- Students will study a series of historical photos and consider the integral role of photo interpreters.

## Grades

6 -12

## Materials

- Historical map cards (15)
- Mosaic mapping image cards (5)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

## Set-up

Review background information, and shuffle the historical map cards.

.../continued

## Background

Alongside the large number of technological advances, the First World War saw substantial innovations in the areas of cameras and film, which in turn affected war cartography. An example of this is the mosaic map.

Mosaic maps were created by taking a series of overlapping photos and aligning them together to create a comprehensive view of the enemy's trench network. Photo interpreters were integral to this process.

While studying the photos, interpreters looked for visual clues that might denote changes in the enemy's position. For example, soil displacement or shadows could help identify trenches, embankments, artillery batteries and troop movements. Newly felled trees and tracks at the edge of a wood likely indicated the placement of a hidden artillery piece. Although weapons might be hidden even from aerial view, the size of tracks or a shadow could show the presence of a gun and even reveal the type. The length of shadows could also be used to estimate the size of objects by calculating the angle of the sun based on the date and time of day the photo was taken. Interpreters also looked for patterns created by the location of certain human-made objects near each other. For instance, several buildings next to a road or rail network with large, stacked objects evenly spaced surrounded by a fence would probably indicate a supply depot. If the stacks were spaced farther apart, it was probably an ammunition depot.

## Introduction

Encourage students to explore the giant floor map. Help them determine what type of map it is by asking guiding questions about what they recognize (e.g., What countries do you see? What continent is this? What do you recognize on the map? What type of map is it?). Locate the five main components of all maps (border, north point, title, scale and legend) and discuss how they are depicted on this map.

Ask students about the type of transportation used throughout the war: How did soldiers get to and from the Western Front? What about in battle? Ask students to brainstorm all the different kinds of transportation they think were used during the war. Encourage them to use the giant floor map to back up their hypotheses.

Next, ask what they thought airplanes were used for in the First World War. What can the airplane see as it is flying across the surface? How can an airplane be used other than for fighting?





## Development

Circulate the mosaic mapping image cards among students. As the photographs are circulating, ask students:

- What do you see?
- What do you notice first?
- What people and objects are shown?
- What, if any, words do you see?
- What's happening in the image?
- When do you think this image was made?
- What can you learn from examining this image?
- What questions arise when you examine the image?

Provide an overview of the creation and use of mosaic mapping using the background information provided in this activity. Check for understanding by asking: What were mosaic maps? What could be learned from them? What was the role of the photo interpreter?

## Conclusion

Randomly distribute the historical map cards to the class. Ask students to examine the map and locate the area on the giant floor map. Next, instruct students to work together as a class and create a mosaic map by piecing their historical maps together. Ask students what was challenging about this task and what could be some additional challenges for the pilots and cartographers at the time.

## Extend your geographic thinking

Have students work together to create their own mosaic map of their school or classroom. Using cameras on their mobile devices, encourage students to go out and take photos. Have students share their images with the rest of the class, print out the photos and create a large mosaic map. When finished, discuss comparisons between using mosaic maps today versus satellite maps. In what ways are they alike? In what ways are they different?

### Links to the Canadian National Standards for Geography

#### ESSENTIAL ELEMENT 1: THE WORLD IN SPATIAL TERMS

- Map, globe and atlas use

#### ESSENTIAL ELEMENT 2: PLACES AND REGIONS

- Political and historical characteristics of regions

#### ESSENTIAL ELEMENT 4: HUMAN SYSTEMS

- Territorial dispute and conflict

#### ESSENTIAL ELEMENT 6: THE USES OF GEOGRAPHY

- Effects of physical and human geographic factors on major historic events

#### GEOGRAPHIC SKILL 4: ANALYZING GEOGRAPHIC INFORMATION

- Make inferences and draw conclusions from maps and other geographic representations

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC QUESTIONS

- Develop and present combinations of geographic information to answer geographic questions

**Learning objective**

- Students will explore how the use of maps during the First World War standardized mapping conventions, focusing on latitude and longitude.

**Grades**

6 -12

**Materials**

- Coordinate cards (11)
- Canadian battle cards (11)
- Teacher's answer card (1)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Shuffle the Canadian battle cards and the coordinate cards together. Review the background information provided.

.../continued

**Background**

The usual image of the Western Front during the First World War (FWW) is of immobile warfare: soldiers waiting in trenches for the whistle to be called signalling their move over the top towards the enemy. But there was much more to the war, which was instead a dynamic cycle that relied heavily on aerial reconnaissance and maps that provided each side detailed and up-to-date knowledge of the enemy and its position.

British mapmakers soon found that French maps (produced in the 1880s) were too small to be useful in the trenches, and the scale of Belgian topographic maps (1:10,000) used a different projection than British and French maps of the area. Latitude and longitude coordinates were also inconsistent. As a result, many of the maps available at the beginning of the war lacked a universal standard. Soon, new maps with standardized grids, symbols, colours, coordinates and contour intervals were produced. The First World War thus helped standardize many of the map conventions we see today.

**Introduction**

Once students have had an opportunity to explore the map, discuss and locate the five main components of all maps (border, north point, title, scale and legend) and how they are depicted on this map. Explain that these are map conventions that help us read many different types of maps.

Explain that during the FWW, many of these mapping conventions were not standardized. The extensive (and valued) use of maps during the conflict led to many of the map standards we have today.

Inform students that most maps also include some kind of coordinate system to help people find specific locations. For example:

- On a street map of a city, this might be a simple grid marked with letters and numbers.
- Larger maps usually use imaginary lines known as longitude and latitude. On a globe, these lines are orderly and evenly spaced.
- All lines of longitude, or meridians, run in a north-south direction and are the same length. The lines of latitude, or parallels, all run east and west and are shorter the farther they are from the equator.

Ask students to point out the lines of longitude and latitude on the giant map. Select two volunteers to walk along two different lines of latitude and two volunteers to walk along two different lines of longitude. Have students stand anywhere on the floor map and determine its exact location using latitude and longitude coordinates.





## Development

Inform students that they will be locating the site of several Canadian battles on the giant floor map using latitude and longitude. Draw their attention to the red maple leaf symbols on major battles that were significant for Canadian troops and Canada.

Randomly distribute the coordinate cards and Canadian battle cards at the same time. Ask students holding the coordinate cards to place them on the correct Canadian battles on the map. After each coordinate has been located, have students holding the Canadian battle cards read aloud information about these battles and show the photos on the front of their cards.

## Conclusion

Once all battles have been located and their information shared with the rest of the class, ask students to gather into small groups and select two significant battles in which Canadians fought. Have groups consider what may have been similar between these battles and what may have been different, paying attention to not only who fought and how but also where each battle happened. Have groups share their thoughts with the class. Conclude by asking how the advancement of cartography may have influenced the development of military strategies during the war.

## Extend your geographic thinking

Have students research key battles that Canada participated in from the beginning to the end of the FWW. Create a class timeline highlighting key dates and locations. Once completed, have students use the giant floor map to plot the events in their timeline. Discuss any patterns or trends they see.

### Links to the Canadian National Standards for Geography

#### ESSENTIAL ELEMENT 1: THE WORLD IN SPATIAL TERMS

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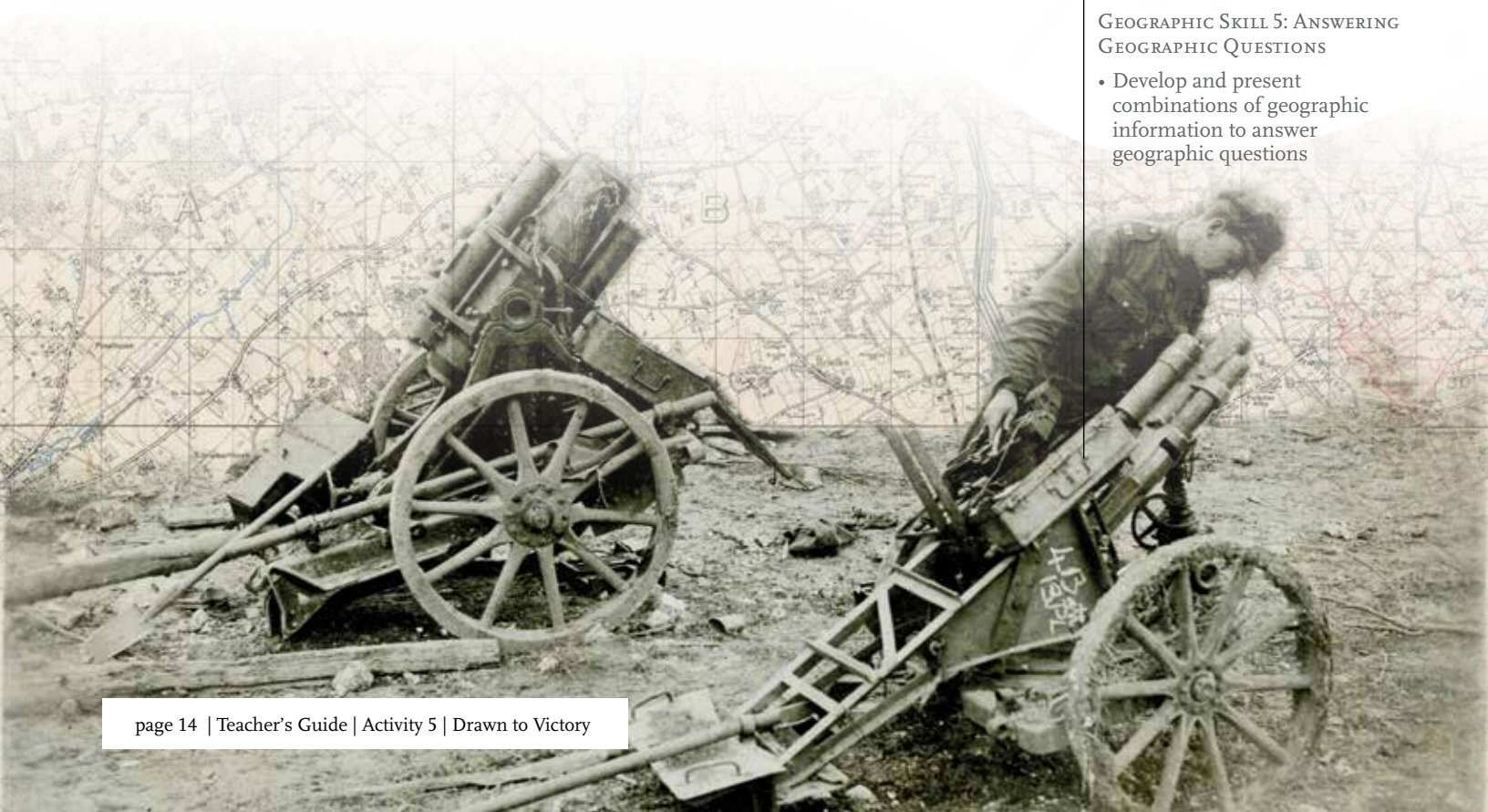
- Effects of physical and human geographic factors on major historic events

#### GEOGRAPHIC SKILL 3: ORGANIZING GEOGRAPHIC INFORMATION

- Integrate various types of materials to organize geographic information

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC QUESTIONS

- Develop and present combinations of geographic information to answer geographic questions





**Learning objectives**

- Students will explore the Battle of Neuve Chapelle using a map artifact.
- Students will investigate trench lines before and after the battle and determine if the battle was a success in the eyes of its British planners.

**Grades**

6-12

**Materials**

- Chains (12)
- Pylons (16)
- Battle of Neuve Chapelle map (5)
- Colour cards (black cards only) (10)
- Canadian battle cards (11) (optional)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Review background information provided. Set out red and blue chains, and separate the black cards from the colour cards.

.../continued

**Background**

The Canadian Expeditionary Force, the field force created by Canada for service overseas in the First World War (FWW), saw their first battle in March 1915 in the French town of Neuve Chapelle. After arriving from Salisbury Plain in England, the Canadian forces were instructed to prevent the Germans from reinforcing the sector of Neuve Chapelle. This allowed the British 1st Army, under General Douglas Haig, to successfully push through German lines and establish a new Allied front line on conquered territory.

The British used several new tactics at the battle. The intention was to use, for the first time, a barrage that lifted according to a set timetable, meaning that the guns would concentrate on one target then lift at a pre-determined time to the next one, while the infantry simultaneously moved forward to take the objective that had just been crushed. Plans were also put in place for concurrent bombing by airplanes.

A detailed timetable and target list was issued to the artillery batteries (that is, artillery units) involved. Other innovations included issuing maps to infantry showing the objectives of the battle. As well, this was the first time the British intensively used aerial photographs in planning the battle.

The Battle of Neuve Chapelle also marked the first time that the Canadian Expeditionary Force had been fully involved in action with the enemy.

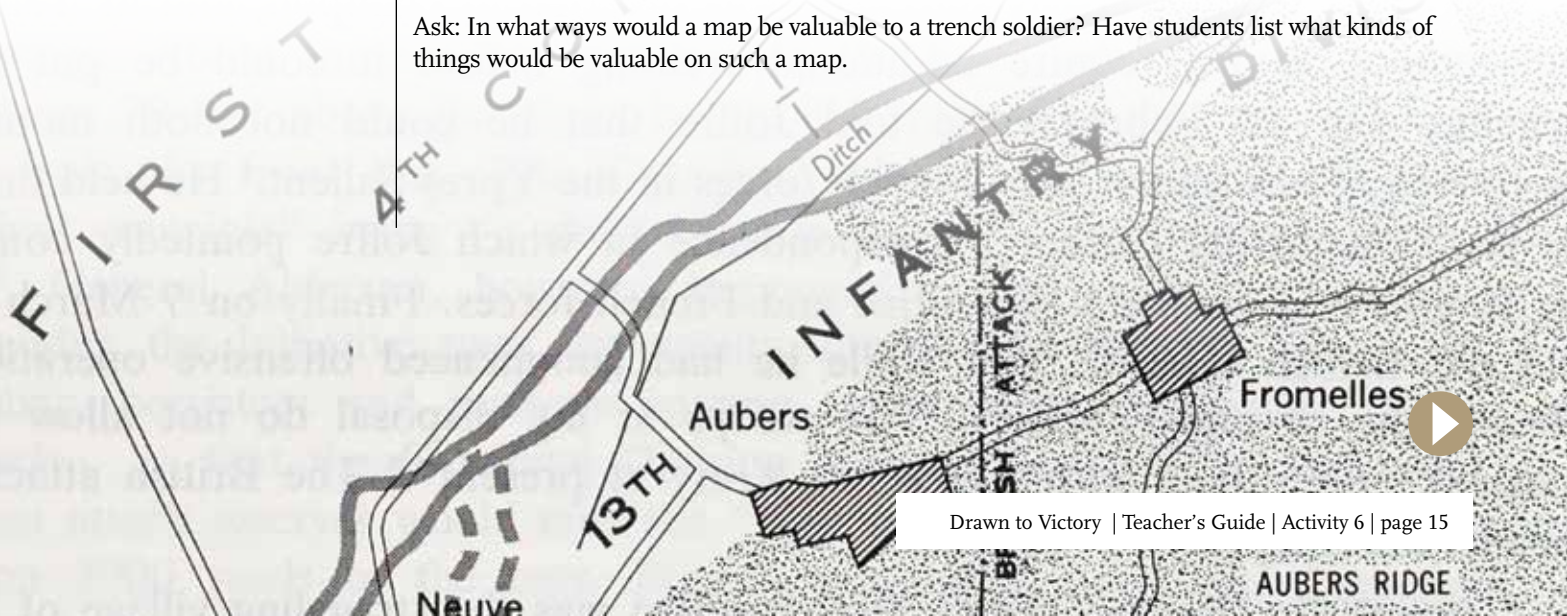
Although the artillery caught the Germans by surprise and the Allies were able to breach a 1,600-metre stretch of the German line, they were unable to communicate with and tell supporting troops to advance and reinforce the attack. This gave the Germans time to mount a counterattack, preventing the Allies from advancing farther. In the end, the Allies recaptured about one kilometre of ground at the cost of 11,200 casualties.

**Introduction**

Once students have had an opportunity to explore the map independently, have students locate the Battle of Neuve Chapelle on the map and mark it with a pylon. Ask students to survey the area around the battle. Ask: What other battle sites are nearby? Rivers? Cities? What is the topography?

Provide a brief overview of the Battle of Neuve Chapelle from the background information, emphasizing the new techniques used by the British (new barrage tactics that coordinated large artillery guns with infantry advances, use of airplanes for bombing and aerial photography, and the issuing of maps to infantry soldiers).

Ask: In what ways would a map be valuable to a trench soldier? Have students list what kinds of things would be valuable on such a map.



# BATTLE OF NEUVE CHAPELLE

6

## Development

Divide students into small groups and distribute the Battle of Neuve Chapelle maps to each group. Instruct the students to study them and compare similarities and differences with the giant floor map. Check for comprehension by asking students:

- What is the map title? The date? What does the map scale tell us? What type of symbols are used on the map?
- Describe the topography around the town of Neuve Chapelle: How is the higher ground noted on the map? Can you find Aubers Ridge?
- Whose troops are noted on the map? Locate trench lines before the battle, trench lines after the battle and objectives of the British attack.
- Where do you think the Germans are located?

Using the Battle of Neuve Chapelle map for reference, have students mark the trench lines before the battle with a red chain and the trench lines after the battle with a blue chain. Next, have students lay several black cards on the giant floor map to indicate the battle objective for the British attack.

## Conclusion

Ask students who had the better geographical position during the battle, the British/Canadian/Indian forces or the Germans? Encourage students to find the answer by examining the topography of the region (hint: higher ground has a better geographical position). Ask students whether the Battle of Neuve Chapelle would have been considered a success for the British and Canadians? [Yes. It was considered a British tactical success, even though the strategic intentions had not been met.] How can the physical landscape assist or challenge a battle?

Encourage students to locate a different battle on the giant floor map and examine the surrounding area. Other than topography, what other landform features can assist in battle (e.g., near water, on a ridge, forest, farmland, marsh, etc.)? Have students discuss which battle they feel had a similar landscape to Neuve Chapelle and which battles were different.

## Extend your geographic thinking

Have students research the Battle of Neuve Chapelle further and make notes on the battle's successes, setbacks, communications and lessons learned. Divide your classroom into two groups, and have students form a debate speaking for or against the success of this battle for the British and Canadian forces.

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- Develop and present combinations of geographic information to answer geographic questions





### Learning objectives

- Students will explore First World War air aces, with a focus on Canada's Billy Barker and the airplanes used during the war.
- Students will develop their mapping skills by determining the distance travelled in these planes using the map scale.

### Grades

6-12

### Materials

- How far? How fast? cards (10)
- Chains (12)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)
- First World War photo cards (optional)

### Set-up

Review the background information and set out coloured chains and How Far? How Fast? cards.

.../continued

## Background

During the First World War (FWW), great leaps were made in aircraft technology and the use of aircraft for military purposes. Canadians served at home and overseas as fighter and reconnaissance pilots, aerial observers, mechanics and flight instructors in the British air services. On the home front, more than 3,000 British and Canadian pilots trained in Canada, 2,500 of whom served overseas. Many of these pilots were among the Allies' best. Of the nearly 23,000 Canadians who served in the air services during the war, 1,563 died.

The best pilots became famous and were nicknamed "air aces." Canadian fighters emerged as some of the most accomplished and effective air warriors of the conflict. Of the top 12 fighter aces of the FWW, four were Canadian: William "Billy" Bishop, Raymond Collishaw, Donald MacLaren and William "Billy" Barker. Born in Dauphin, Manitoba, Billy Barker joined the First Canadian Mounted Rifles as a private, later becoming a machine-gunner. Barker went to France with his unit in September 1915, and after weeks of trench warfare, he transferred to the Flying Corps as an observer with the rank of corporal. In April 1916, he was promoted to lieutenant and soon after awarded the Military Cross for his deeds as an observer-gunner. He then trained in England as a pilot, returning to action in January 1917. During his career, flying a plane known as a Sopwith Camel, Barker destroyed 52 enemy planes and won a number of medals, including the Victoria Cross, the Distinguished Flying Cross and the French Croix de Guerre. Barker returned to Canada in May 1919 as one of the most decorated Canadians from the war and remains the most highly decorated Canadian soldier of all time.

## Introduction

Encourage students to explore the transportation routes on the giant floor map. Ask students which modes are not labelled on the map (airplane, horses, tanks, ship routes) and which modes of transportation were used more than others in the war. Have a class discussion on how various modes of transportation were used, and highlight key areas on the map. Have students consider how Canadians travelled to Europe (ship). [Option to use FWW photo cards to highlight key modes of transportation if helpful.]

Ask students to compare how people travel long distances today versus 100 years ago. Explain that at the time of the FWW, airplane technology was not capable of carrying hundreds of passengers. Provide a short overview of Canadian air aces using the background information, and highlight the life of Billy Barker and his role as a FWW air ace.

## Development

Draw students' attention to the scale on the giant floor map. Ask:

- Why are scales important on maps? (they show us distance)
- What do map scales help us measure? (distance)
- Why is it important to have maps? (they help us become more spatially aware)







# CANADIAN AIR ACES

7

Have each group practise calculating scale by selecting two towns on the floor map and calculating the distance between them in kilometres.

Next, divide students into 10 groups and hand out the How Far? How Fast? cards. Have students study their card. Ask:

- What information is on these cards?
- Which country used each plane? (examine the flag in the top corner of the card)
- How fast does each plane go?

Ask each group to place their plane on a different Canadian battle site on the giant floor map. Based on the airplane's speed labelled on the card, ask students to determine how far they could travel in any direction in three hours. Be sure to direct the students' attention to the map scale. Ask students to use a coloured chain to determine and highlight the distance.

## Conclusion

Ask: Which plane travelled the fastest? The slowest? Who used these planes (Allies or enemies)?

Using the map's border, ask students to place all planes in order of speed (from slowest to fastest). Ask a volunteer to identify the Sopwith Camel plane. Using the background information provided with this activity, explain more about Billy Barker and that he mostly flew a Sopwith Camel. Ask students if they can identify other FWW air aces (Billy Bishop, Raymond Collishaw, Donald MacLaren).

## Extend your geographic thinking

Show students the video clip, "Footage from the 1919 film of the Western Front" by Jacques Trolley de Prévaux (<https://vimeo.com/25154065>). Discuss what students saw and anything that surprised them.

To learn more about what it was like to fly in the dangerous skies of the FWW, download the free app "Ace Academy" on your mobile device or tablet.

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- Interpret and synthesize information obtained from a variety of sources

#### GEOGRAPHIC SKILL 5: ANSWERING GEOGRAPHIC QUESTIONS

- Develop and present combinations of geographic information to answer geographic questions

**Learning objective**

- Students will examine the past landscape of Europe and compare it with the present.

**Grades**

6-12

**Materials**

- Google image cards (10)
- Aerial photo cards (16)
- First World War photo cards (20)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Place Google image cards, aerial photo cards and First World War photo cards in separate piles. Review background information.

.../continued

**Background**

By end of the First World War (FWW), Europe was a very different place. The Allies may have been victorious, but the cost was great. The destruction from the war was immeasurable. Millions of lives were lost, entire towns were destroyed, farmers' fields became muddy battlegrounds or graveyards, and many of Europe's roads and railroads had to be rebuilt.

The end of the war saw entire empires crumbling, and many countries were financially exhausted. There was a need to redraw political boundaries and rebuild Europe.

One hundred years later, it's important to remember the war and its impact on Europe's landscape. Although roads have been rebuilt and farmers' fields have grown back, there remains a story of loss, camaraderie, heroism and patriotism.

**Introduction**

Once students have had time to explore the map independently, ask them to locate and stand on major cities and towns. Have students consider where their city or town is in relation to the Western Front (the trench area highlighted in light yellow on the map), and ask students what their city or town may have looked like during the war.

Randomly distribute the aerial photos cards. Explain that these images were taken around the time of the FWW (1914-18). Have students examine the image and locate on the giant floor map where it was taken, based on the photo's title. Ask students what stands out in their photo, what surprises them and how they feel when they look at it.

Next, have students walk around the map examining other students' historical images and observe patterns or trends.

## Development

Gather students around the border and randomly distribute the Google image cards. Have students examine the image on their card and locate it on the giant floor map.

By now, students should have made the connection that the locations of the current images match the same places as the historical ones. Place students into pairs or small groups and have each compare and contrast the two images. Have groups discuss how their place has changed over time and consider what caused this change to occur. Have groups share their observations with the rest of the class.

## Conclusion

Gather and put away the aerial photo cards and Google image cards and have students line up on the map's border. Next, distribute the FWW photo cards to pairs of students. Have them examine what they see and consider where their photo may have been taken. Have students place their image on the giant floor map in the area they think it may have been taken. Finally, have students brainstorm how the landscape in the image would have changed after the war. As an added task, have students examine items in the photos (soldiers' uniforms, tanks, buildings, etc.) and comment on how these items have progressed or changed. Allow time for each group to share their ideas with the class.

## Extend your geographic thinking

Encourage students to go to the Canadian War Museum's website to explore items, pictures and objects from the First World War: [www.warmuseum.ca/firstworldwar/objects-and-photos](http://www.warmuseum.ca/firstworldwar/objects-and-photos). Have students select one item to research and describe how it has progressed and how and where it's used today.

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- Develop and present combinations of geographic information to answer geographic questions



**Learning objective**

- Students will explore the consequences of the First World War with a focus on the total (civilian and military) losses in France, Belgium, Germany and Great Britain.

**Grades**

6-12

**Materials**

- Chains (12)
- Population cards (4)
- Counter blocks (165)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Divide counter blocks by colour.

.../continued

**Background**

The First World War (FWW) ravaged Europe in a number of ways, including a staggering loss of population. More than 10 million military personnel and seven million civilians died as a result of the war, making it one of the deadliest conflicts in history. The Allies, which included Canada, lost about six million military personnel, while the Central Powers lost about four million. At least two million people died from diseases, and six million went missing or were presumed dead. The war also left at least seven million men permanently disabled. The FWW was the first conflict to use airplanes, tanks, long-range artillery, submarines and poison gas. An estimated 100,000-260,000 civilians were either killed or wounded by chemical weapons during the war. The daily figure for lives lost during the war was over 5,500, and civilians made up five per cent of the total loss.

The region of the Western Front, including Belgium, northeastern France and Alsace-Lorraine (part of France today but controlled by Germany during the FWW), lost between four and five per cent of its total civilian population as a result of the war. Although the British fought on the continent, they lost about one million people, or two per cent of their total population. The losses incurred by Britain's dominions, such as Canada, Australia and New Zealand, were smaller in total, but still overwhelming given their small populations. The demographic consequences of war were broad and sweeping. Formerly able-bodied men were removed from the labour force. The losses among particular groups, especially young, educated middle-class males, were often severe. Children were left orphans, and thousands became refugees as they fled their war-torn homes. To make matters worse, an influenza epidemic in 1918-19 wiped out millions more from an already debilitated population.

**Introduction**

Once students have had an opportunity to individually explore the map, gather them around the map's border to discuss and define the terms: casualty, civilian and Western Front. Provide a brief recap of the FWW population losses using the background information.

Ask students to define demography. Ask: Is it a subset of geography? What does it study? Explain that demography is the statistical study of population. Demographers seek to understand population dynamics by investigating four main demographic processes: births, deaths, migration and aging. Ask: In what ways do you think the First World War affected Europe's demography? Canada's? The countries on the Western Front?

Divide the class into four groups and, using four coloured chains, ask students to outline France, Belgium, Germany and Great Britain. Ask each group if they think the war affected the civilian population of this area. Encourage students to consider and discuss where battles were fought and how the First World War affected the population in these smaller areas.

**Development**

Inform students that they will use the giant floor map to indicate the total loss (civilian and military) of population in France, Belgium, Germany and Great Britain. Give each group a population card. Ask each group to examine and review the information related to their country on the card. Remind students that the activity is a simulation and estimation is assumed.

Check for understanding:

- What demographic data are presented?
- What were the total deaths in France? (1.7 million) What per cent of the population does this constitute? (4.1%)
- What were the civilian deaths in Belgium? (62,000)
- What per cent of the total population died in Germany as a result of the war? (3.7%)
- What were the total deaths in Great Britain? (one million) Were there more civilian or military deaths? (We conclude military based on the stats provided.)
- Which two countries had the greatest number of civilian deaths? (Germany and France) Why? (The war was fought on their territory.)

Explain that the students will be transferring the demographic information onto the giant floor map. Distribute counter blocks to each group. Inform your class that each cube represents one million people. Ask students to review their card and calculate the approximate total number of people living in their country in 1914.

France	Great Britain	Germany	Belgium
41 blocks	46 blocks	67 blocks	8 blocks

Next, instruct each group to refer again to their population cards and remove the corresponding number of blocks based on the total number of deaths during the First World War.

France	Great Britain	Germany	Belgium
2 blocks removed	1 block removed	3 blocks removed	1 block removed

## Conclusion

Conclude with a class discussion on the demographic consequences of the FWW. Discuss how the loss of so many people in one country can affect its political, economic and social structure. Ask: How would the loss of millions of people affect their country's rural and urban landscapes? Recalculate the loss of life focusing only on civilian deaths. Tell students that one block now represents 50,000 casualties. Have students determine which country lost the greatest number of civilians and discuss why using the giant floor map.

France	Great Britain	Germany	Belgium
6 blocks	2 blocks	8 blocks	1 block

## Extend your geographic thinking

Have students research Canada's total population in 1914 and the number of people it lost in the First World War. Next, have students research the origin of the term the "Lost Generation." Pose a series of geographic questions (e.g., How did the term differ among countries?).

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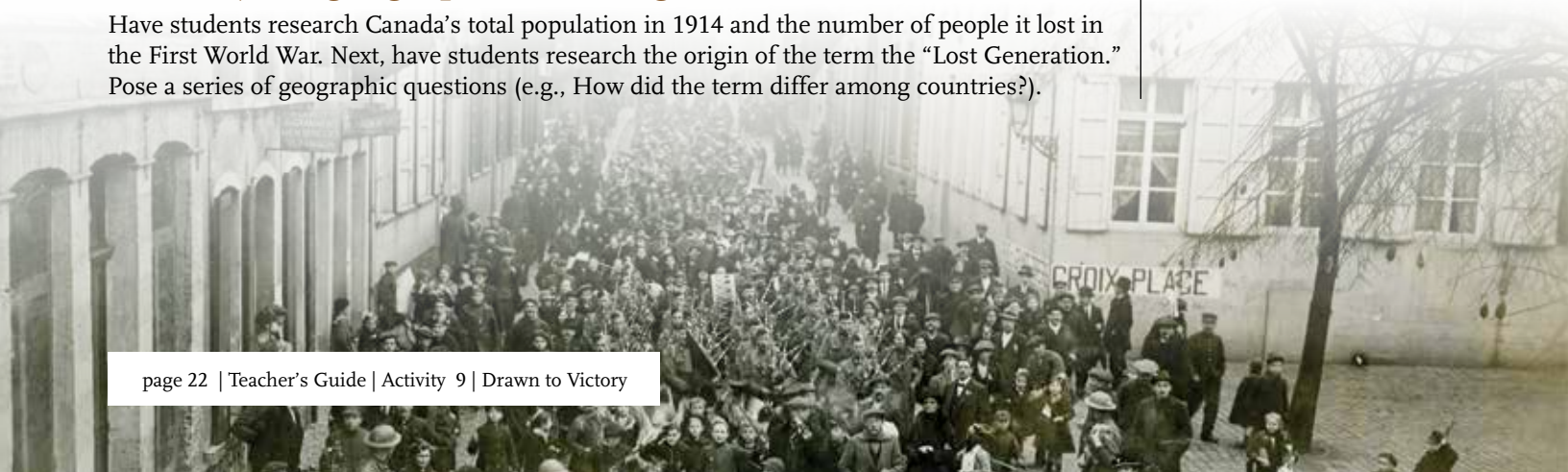
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**Learning objectives**

- Students will explore how the human and physical geography of Europe was changed because of the First World War.
- Students will discuss the impacts of the war through various geographical lenses.
- Students will learn how the First World War is remembered geographically and symbolically.

**Grades**

6-12

**Materials**

- Memorial cards (5)
- First World War photo cards (optional)
- Canadian battle cards (optional)
- Access to Drawn to Victory website, [anationsoars.ca](http://anationsoars.ca) (for background information)

**Set-up**

Review the background information and set out all required materials.

.../continued

**Background**

The aftermath of the First World War (FWW) saw drastic changes to Europe's geography in all areas: physical, political, cultural and social. Change reverberated throughout Asia, Africa and elsewhere. Empires, such as the Ottoman and Austro-Hungarian, collapsed as a result of the war, countries were abolished and new ones were formed, boundaries were redrawn, international organizations were established, and many ideologies, both new and old, took a firm hold in people's minds.

The human cost of the First World War was great. More than 16 million people, both military and civilian, died in the war. An entire generation of young men was nearly wiped out. In 1919, the year after the war was over in France, there were 15 women for every man between the ages of 18 and 30.

The landscape along the various fronts was smashed to pieces. Roads, woods, farms and villages were often decimated. People who had been forced to abandon their homes and livelihoods were faced with the huge task of starting over and rebuilding their homes, businesses, farms, churches, public buildings, roads, bridges, railways and canals. Abandoned weapons, battlefield debris and ammunition had to be cleared, and craters and tunnels had to be filled in. This type of work continued for years. As recently as 2007, a mass grave of British and Australian soldiers was discovered in France, and the bodies were exhumed and reburied in a military cemetery.

All forces used chemical warfare against each other. By the time the war ended, these weapons claimed an estimated 1.3 million casualties, including 100,000-260,000 civilians, and caused environmental damage such as soil erosion, deforestation and water contamination.

Many countries began to adopt more liberal forms of government, and a hostile Germany was forced to pay for a large portion of war reparations, ultimately leading to the Second World War. As Europe fell into debt from the monetary costs of war, inflation plagued the continent. Additionally, the optimism of previous decades was abandoned and replaced with a bleak, pessimistic outlook after people had witnessed the brutality of war.

**Introduction**

Remind students that the discipline of geography is split broadly into two main fields: human geography and physical geography.

Explain that physical geography looks at the natural processes of the Earth, such as climate and plate tectonics. Examples include geomorphology (the study of the shape of the Earth's surface and how it came about), hydrology (the study of water), climatology (the study of the climate); pedology (the study of soil), oceanography (the study of the oceans and seas) and geomatics (gathering, storing and processing geographic information, including map-making).

Human geography looks at the impact and behaviour of people and how they relate to the physical world. Examples include cultural geography (the study of how things like religion, language and government vary across the world), historical geography (the study of how people thought about geography in the past) and population geography or demography (the study of populations).

Ask students to form pairs and stand anywhere on the map. Ask each pair to determine one physical geography issue and one human geography issue that occurred in that area. Have pairs share their ideas with the class.

## Development

Gather students around the giant floor map and give a recap of the FWW by asking students to place a red pylon on the countries that were part of the Allies (Great Britain, France and Belgium) and a blue pylon on the Central Powers (only Germany is shown on the map). Remind students that the First World War was a global war and that although they may not be shown on this map, many other countries participated in this war. This map depicts where a large portion of the fighting occurred, but not all of it.

Allow students time to explore the giant floor map, paying attention to the location of the Western Front and where various battles took place. Ask students which country they feel suffered the greatest loss. Discuss the different ways loss can be measured and explain that loss can mean the loss of human life (casualties) as well as the loss of land, the destruction of infrastructure and economic decline. Remind students that every country suffered significant loss. Have them stand anywhere on the giant floor map and consider the kind of loss suffered in their particular area. Ask students to think about how loss could be measured in their area through a human geography lens and a physical geography lens. Have students share their thoughts with the class.

## Conclusion

Ask students why they think it is important to remember the First World War. Explain that Europe has multiple memorials dedicated to the FWW. Divide students into small groups and give each one a different FWW memorial card. Ask students to examine the image on the card and determine the location of the monument on the giant floor map. Ask students to comment on how the war is remembered in their memorial. What symbols do they see? How is the surrounding landscape used? Do these memorials remember a specific battle or commemorate the entire war? How is Canada represented or remembered? Have a class discussion on the different ways the FWW is remembered and how Canada is remembered overseas.

## Extend your geographic thinking

Explore how the war is remembered in Canada. Using Google tour builder, ([tourbuilder.withgoogle.com](http://tourbuilder.withgoogle.com)), or ESRI's story maps, ([storymaps.arcgis.com](http://storymaps.arcgis.com)), have students research how the First World War is commemorated and remembered in Canada and create their own story map presentation.

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