



# Geoscape Ottawa-Gatineau

Grade 9 - 11 Lesson Plans to accompany the Geoscape Ottawa-Gatineau poster and website  
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## Theme One: Introduction to Geoscape

### OVERVIEW

Students are introduced to the importance of studying our local area, “brainstorm” the concept of “Geoscape”, and connect cause and effect relationships in our Geoscape. They are introduced to Landsat images, identify the location of known features on the landscape, and interpret satellite images by comparing different locations on the Geoscape image. They also use the excellent air photo coverage on the City of Ottawa website. (Le site Web de la ville d’Ottawa contient d’excellentes photographies aériennes ) Students conclude relevant location factors for the site and situation of the cities of Ottawa and Gatineau.

### Lesson 1: LIVING WITH OUR GEOSCAPE

### OVERVIEW

- Students are introduced to the importance of studying our local area
- Students “brainstorm” the concept “Geoscape”
- Students connect cause and effect relationships in our Geoscape
- Students are introduced to the Geoscape poster and/or web site <http://geoscape.nrcan.gc.ca>

**DURATION** 75 minutes

### ACTIVITY

1. “Why bother.” Teacher-directed blackboard/overhead outline. As a class, students suggest reasons as to why studying our local area is important.
2. Students, in small groups, develop an outline of what aspects of our local area should be examined. Ideas generated are categorized into groups – i.e. Physical, Human, Resources, Environmental Concerns
3. The same groups will prepare a 5 minute presentation on chart paper for the whole class to include:
  - a) the results of Activity 2 above
  - b) a definition of the concept “Geoscape” derived from individual “brainstorming”
  - c) four cause/effect relationships with examples from Activity 2 for each relationship.
4. Teacher introduces the Geoscape poster of Ottawa-Gatineau or the web site, noting the 11 panels/topics to be investigated. Students take notes on a definition of Geoscape and state at least 1 relationship between each of the 11 panels and another panel. (11 overall)

## Lesson 2 : LOCATION IN THE GEOSCAPE

### OVERVIEW

- Students are introduced to Landsat images
- Students identify the location of known features on the landscape
- Students interpret satellite images by comparing different locations on the Geoscape image
- Students conclude relevant location factors for the site and situation of the cities of Ottawa and Gatineau

**DURATION** 110 minutes = 1 period + homework

### ACTIVITY

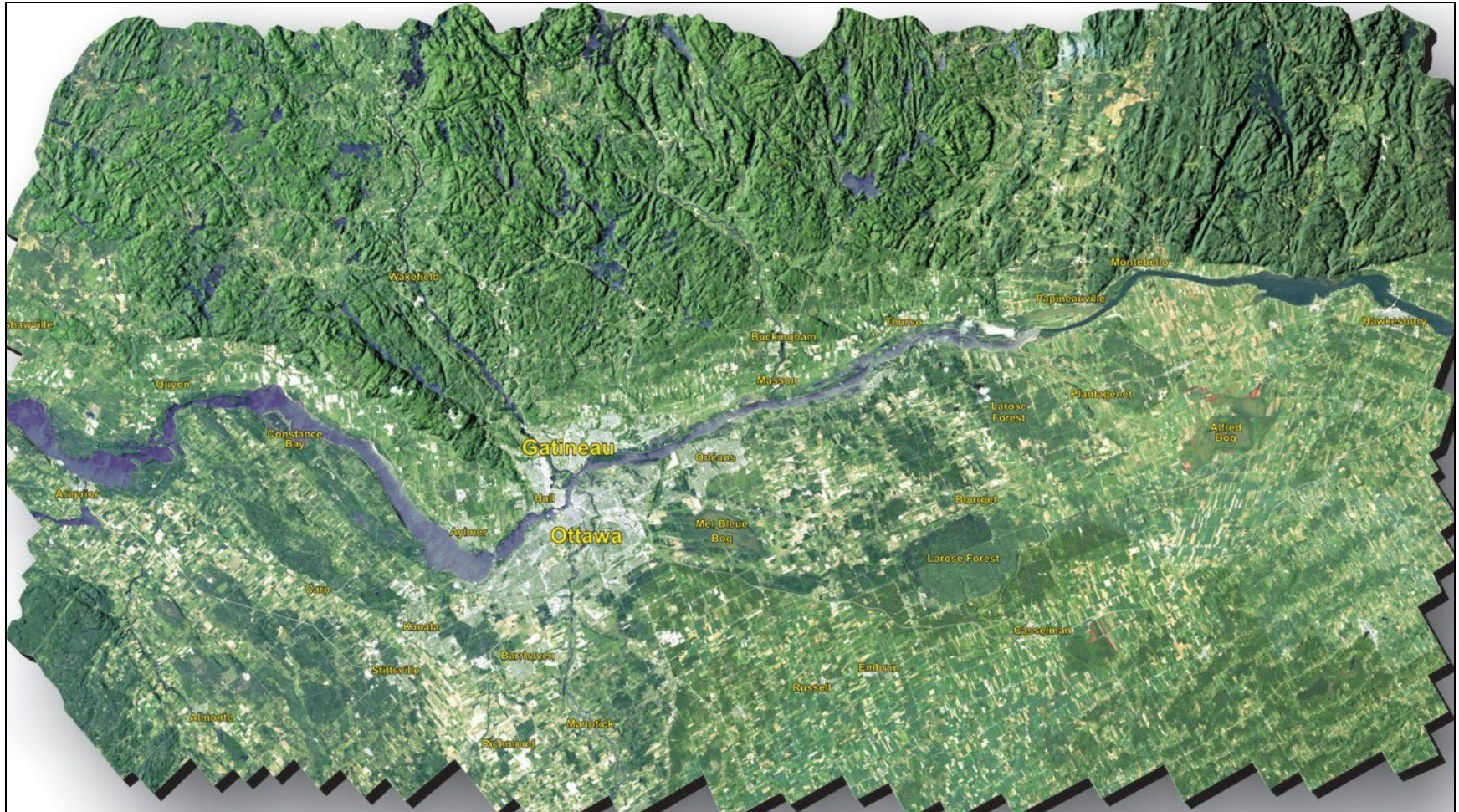
1. Students search the Canadian Centre for Remote Sensing (CCRS) web site (<http://www.ccrs.nrcan.gc.ca>) and complete the Student Worksheet on remote sensing and image interpretation.
2. Students complete the following questions in their notebook using the poster, web site or other related web pages. Note the tutorials available on the CCRS website [http://www.ccrs.nrcan.gc.ca/resource/index\\_e.php#tutor](http://www.ccrs.nrcan.gc.ca/resource/index_e.php#tutor)
  - a) What is remote sensing?
  - b) What is Landsat?
  - c) What is Radarsat? What role has Canada played in its development?
  - d) What is a DEM?
  - e) Compare the appearance of the landscape to the north with that towards the south. Account for the differences (5 reasons).
  - f) Compare the appearance of the landscape to the east with that towards the west. Account for the differences (5 reasons).

Note: The City of Ottawa website has excellent air photo coverage ([http://www.ottawa.ca/city\\_services/maps/atlas/aerial\\_photos\\_en.html](http://www.ottawa.ca/city_services/maps/atlas/aerial_photos_en.html)).

3. While reviewing the Landsat Image on the Ottawa-Gatineau Geoscape, students use a highlighter or colour pencil to label in colour the following key features on the accompanying print copy of the satellite image:
  - a) Rivers (blue) – Ottawa, Gatineau, Rideau, Jock, Carp, Mississippi, Madawaska, South Nation
  - b) Urban (black) – Ottawa, Gatineau, Aylmer, Hull, Kanata, Stittsville, Barrhaven, Orleans
  - c) Boundary (orange) – between Canadian Shield and the Great Lakes-St Lawrence Lowlands
  - d) Highways (red) – Hwy 417-Queensway; Hwy 416; Hwy 31-Bank St.
  - e) Airport (brown) – MacDonald Cartier International – Ottawa
  - f) Open Space (green) -Greenbelt , Gatineau Park
  - g) Red star – Parliament Hill
  - h) Purple dot – student’s school
  - i) Yellow dot – student’s house
4. Students conclude with a 1 page written paper identifying and explaining the location factors that have specifically contributed to Ottawa- Gatineau becoming Canada’s 4th largest urban area.

**Student worksheet: REMOTE SENSING IMAGE INTERPRETATION**

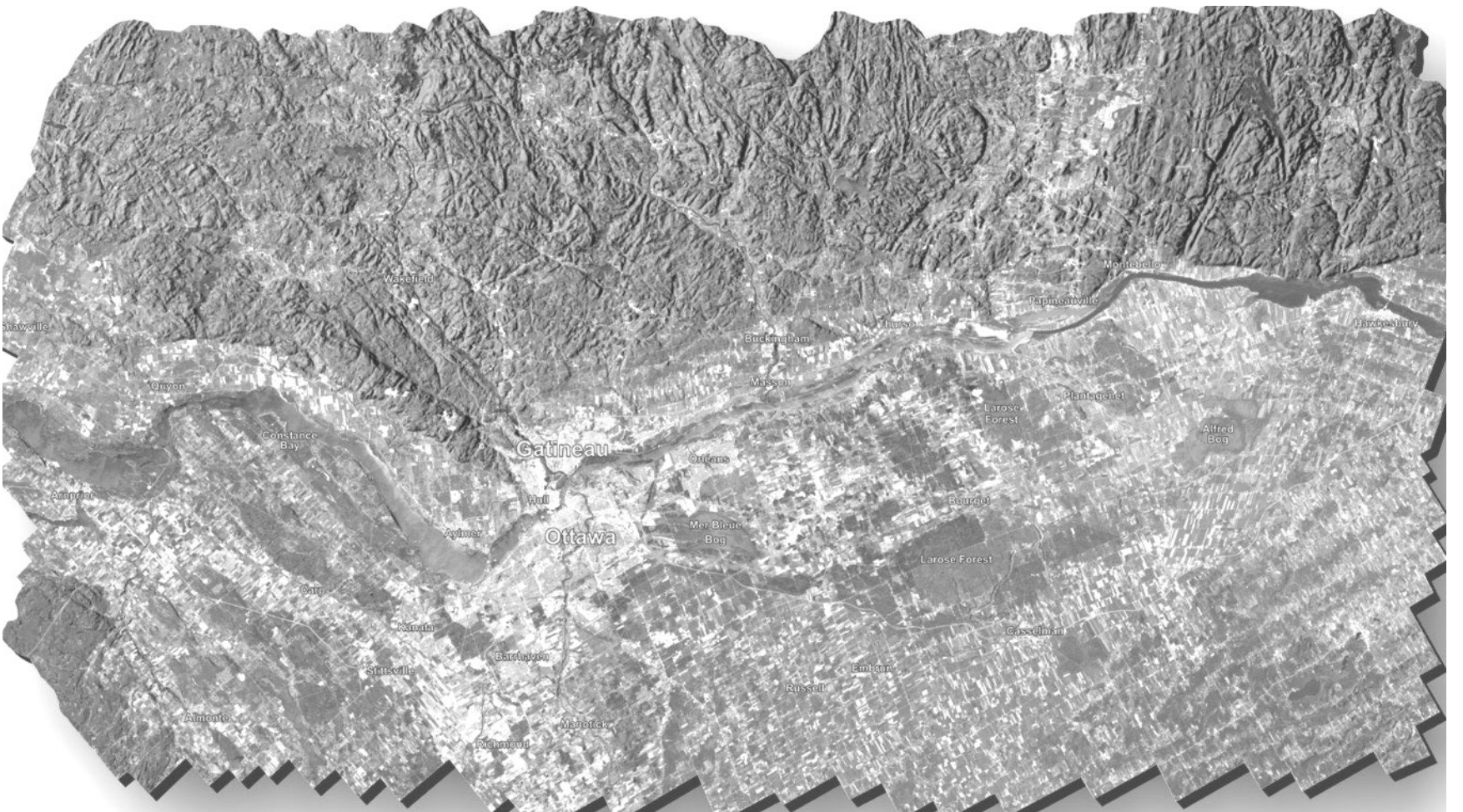
<b>Land Use</b>	<i>Examples</i>	<b>Shape – structure</b>	<b>Size – compared to others</b>	<b>Tone – brightness</b>	<b>Pattern – spatial arrangement</b>	<b>Association / proximity to other land uses</b>
<b>Rural</b>	<i>Agriculture farms , fields</i>					
<b>Residential, or Commercial</b>	<i>Houses, apartment buildings, stores, shopping centres</i>					
<b>Central Business District CBD</b>	<i>Tall office buildings, hotels</i>					
<b>Industrial</b>	<i>Factories, railway yards, docks, storage yards</i>					
<b>Parks, Recreation, Open space</b>	<i>Parks, golf courses, sports fields, amusement parks, race tracks</i>					
<b>Water</b>	<i>Lakes, rivers, wetlands</i>					
<b>Forest</b>	<i>Wooded areas</i>					



Overhead: Geoscape Ottawa-Gatineau satellite image [http://geoscape.nrcan.gc.ca/ottawa/index\\_e.php](http://geoscape.nrcan.gc.ca/ottawa/index_e.php)

Landsat TM (5/7) Shaded Relief Fusion (Landsat TM 7.)

Data collected by USGS/EROS Data Center and provided courtesy of Canada Centre for Remote Sensing.



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