



DSBN GEOGRAPHICAL INFORMATION SYSTEMS (GIS) CHALLENGE 2019 SECONDARY LEVEL SCOPE

CHAIR: Jonathan Fletcher jonathan.fletcher@dsbn.org Port Colborne High School

PURPOSE OF THE CONTEST:

To evaluate proficiency in the Geographical Information Systems field.

EVENT DETAILS:

Date: Wednesday, February 27, 2019
Time: 8:30 am
Location: Niagara College, Niagara-on-the-Lake Campus Room E308
Lunch is provided

SKILLS AND KNOWLEDGE TO BE TESTED:

Assignment:

In teams of two, students are to solve a geographic problem using the Geographic Inquiry process with the tools available in ArcGIS Desktop 10.6 or using an ArcGIS Online Ontario Subscription Account. By using geoprocessing tools available within a geographic information system (GIS), it is possible to select suitable locations based on the predefined criteria. See <http://www.esri.ca/en/content/skills-canada> for examples of previous competitions.

***Students who choose to use ArcGIS Online to complete the competition question need to have an ArcGIS Online account. However, if students do not have an account they will be provided one before or at the start of the competition.**

Project Deliverable

The project will consist entirely of practical digital map generation, data analysis, and presentation. Contestants (teams of two) will demonstrate their ability to efficiently perform computer-assisted mapping skills selected from the following list of competencies as determined

by the technical committee from the Skills Canada/Ontario group.

Deliverable: a poster or Story Map that must document the process you used to identify your recommended site to solve the geographic problem. The poster should include:

1. Constructing a flow-chart showing the steps to be taken to solve a specific problem using GIS.
2. Generating a digital map from shapefiles/layers.
3. Creating new fields in a table and adding data on a digital map
4. Using GIS as a tool to compare, contrast and analyze geographic data and produce a series of maps (a minimum of 4) showing the results of the analysis.
5. Using the created maps to analyze spatial patterns and geographic relationships in the natural and human-made environment in order to solve a real-life problem.
6. A written report of your findings that include your analysis and a short section outlining what other data layers or criteria you could include and/or the limitations you encountered during your analysis. (A minimum of three (3) paragraphs)
7. A conclusion. (One paragraph)

* Posters must be at least 600dpi resolution and be no smaller than 24”x 36”. A digital version must be made available. Make sure you save your work regularly.

Skills and Knowledge to be Tested:

Note: This following list is meant to be a guide for students and is not a complete list of skills that may be required of them at the competition. Students may access the Help Menu in ArcGIS Desktop and they may bring approved tutorials or how-to manuals to assist them during the competition but must not be shared among teams.

General Skills Required	
\$ Geoprocessing using ArcGIS 10.6 or ArcGIS Online Ontario Subscription Analysis Tools to Clip, Merge, Append, Dissolve, Intersect, Union, Buffer	\$ Creating a Layout
\$ Geocoding, Select by Attribute, Select by Location	\$ Joining Tables
\$ Creating a layout/map or Story Map Journal	\$ Creating selections
	\$ Creating and changing labels
	\$ Changing symbology

SAFETY REQUIREMENTS:

Competitors are required to follow all industry safety standards during the competition.

EQUIPMENT, MATERIALS, TOOLS, AND SUPPLIES:

Supplied by competitor:

\$ Any approved GIS Manuals

Supplied by committee:

- \$ Data
- \$ Empty USB
- \$ Fact sheet
- \$ Work area
- \$ Computer with access to the Internet loaded with all required Data layers
- \$ Colour laser printer

JUDGING CRITERIA: Judging will be based on the following elements:

- Part A: Technical Skills Demonstrated During the Competition – 35%
- Part B: Technical Skills Demonstrated in the Final Project / Story Map - 25%
- Part C: Geographic/GIS Problem Solving Skills – Final Project / Story Map - 25%
- Part D: Written/Oral Presentation of Final Project to Judge - 15%

Please see attached example from the GIS Skills 2018 Competition.

Job Interview Component

To assist competitors in fully preparing for their eventual job searches, it is expected that they arrive prepared WITH A RÉSUMÉ. An interview workshop will replace the job interview for gold medalists moving on to provincial competitions.

ENTRY: Students must register online at teched.dsbn.org/skills by February 21, 2019. Space in this challenge is limited and usually fills up early! All required information must be completed, including submission of the parent/guardian consent form, in order to participate. Teachers should forward a list of competitors participating from their schools to the contest coordinator Jonathan Fletcher at least 5 days prior to the date of the challenge.

TRANSPORTATION: Students are responsible for their own transportation.

TEACHER’S ROLE:

Instructors are expected to acquaint their student participants with all of the enclosed guidelines. Teachers may accompany their students or visit any time during the competition, but may not assist the competitors during the challenge.

COMPETITION AGENDA:

8:00- 8:30 am	Sign in/ Arrival/ Set up
8:30 am	Orientation
9:00 am	Competition begins
11:00 am	***** Lunch *****
11:30 am	Competition resumes
2:00 pm	Presentations Start
3:00 pm	Competition ends
	Judging

**** Competitors must be on time for their contest and may be disqualified if they do not sign-in at their contest site prior to the start of orientation. At the discretion of the technical committee chair, the competitor may be permitted to compete but would not receive any**

additional time. Each competitor will be given a number by their coordinator upon registration at the location and will be judged anonymously during the competition.