



DSBN GEOGRAPHICAL INFORMATION SYSTEMS (GIS) CHALLENGE 2024 SECONDARY LEVEL SCOPE

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PURPOSE OF THE CONTEST:

To evaluate proficiency in the Geographical Information Systems field.

EVENT DETAILS:

Date: Thursday, March 7, 2024
Time: 8:30 am
Location: DSNB Education Centre, 191 Carlton St, St. Catharines

ENTRY: Students must register online at [2024 Skills Challenge Registration Form](#) with all the required information completed to be eligible to participate.

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 Pro or using an ArcGIS Online 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 this link for examples of previous competitions. [Click here for previous questions](#) from Skills Ontario. Skills questions from the DSNB competitions will be made available.

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

1. 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 in 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)
8. Oral presentation to the judges (10 minutes)

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	
<ul style="list-style-type: none">● Geoprocessing using ArcGIS Pro or ArcGIS Online Ontario Subscription Analysis Tools to Clip, Merge, Append, Dissolve, Intersect, Union, Buffer● Geocoding, Select by Attribute, Select by Location● Creating a layout/map or Story Map	<ul style="list-style-type: none">● Creating a Layout● Joining Tables● Creating selections● Creating and changing labels● Changing symbology● Creating new attributes from table

SAFETY REQUIREMENTS:

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

EQUIPMENT, MATERIALS, TOOLS AND SUPPLIES:

Supplied by committee:

Computer with access to the Internet loaded with all required Data layers
Data

Scratch paper, pens, pencils,

Work area

Printer

Supplied by Competitor:

- Competitors will not be allowed to install their own data sets, extensions, or other GIS software
- Calculator, or ruler
- Competitors may wear ear plugs to help isolate competitor from external noise
- Competitors may bring published reference books, including ArcGIS manuals and support documentation
- Reference materials may not be shared between teams. Any materials brought by competitors are subject to approval by the technical committee
- Competitors can use a USB key so that information can be shared between members of the team. (Note: pdf of maps can be copied to the USB key and taken home after the competition. All Web maps and story maps are saved in the student's ArcGIS Online account and are accessible following the competition)
- All USB sticks will be checked for approved content by the technical committee upon arrival
- Refillable water bottle
- Snacks (recommended peanut-free)
- Competitors must be dressed in a clean and appropriate manner with no logos other than that of their school/school board

Notes, additional materials or assisting devices are not permitted unless listed above.

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

Part A: Technical Skills Demonstrated During the Competition Includes an assessment of various spatial analysis or data management techniques, (i.e., buffer, weighted overlay, clipping, merging, intersecting, etc.) and/or creating final spatial products based on analysis results (i.e. polygon creation, feature editing, area calculations, etc.), symbology, queries (spatial and/or attribute) and other tasks.	45%
Part B: Technical Skills Demonstrated in the Final Project and throughout the day Includes an assessment of the maps, methodology, final write up (findings, discussion, limitations), and preparedness and ability to answer the judges' questions throughout the day	25%
Part C: Geographic/GIS Problem Solving Skills in the Final Project Includes an assessment of the plausibility of the proposed solution, accuracy, time management and teamwork.	20%
Part D: Written/Oral Presentation of Final Project to in Story Map Includes an assessment of the team's ability to communicate methodology, findings, and conclusions of your project.	10%
Overall	100%

TRANSPORTATION: Teachers and 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, but may not assist the competitors during the challenge,

COMPETITION AGENDA: (approximate)

8:00- 8:30 am	Sign in/ Arrival/ Set up
8:30 am	Competition begins
10:30am	In competition judging
11:00 am	***** Lunch *****
11:20 am	Competition resumes
2:15 pm	Presentations Start
3:00 pm	Competition ends
	Judging
*Exact times might change based on number of participants	

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