



## DSBN GEOGRAPHICAL INFORMATION SYSTEMS (GIS) CHALLENGE 2021 SECONDARY LEVEL SCOPE

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### PURPOSE OF THE CONTEST:

To evaluate proficiency in the Geographical Information Systems field.

### EVENT DETAILS:

**Date:** Monday, March 1 - March 12, 2021  
**Time:** 4-hour time period  
**Location:** Individual schools

### 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 Online DSNB Subscription Account or in ArcGIS Desktop 10.6. 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.

The competitor's teacher must let the Skills coordinator know the time they are going to complete the challenge.

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

\* 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.

### **Presentation**

Instructors are expected to acquaint their student participants with all of the enclosed guidelines. Teachers should supervise their students during the competition but may not assist the competitors during the challenge.

1. Competitors and teachers are to inform the coordinator as to what day they are completing the skills challenge.
2. Competitors should start the competition at 10 am and finish by 2pm. No work on the StoryMap or Poster is permitted on the project after the conclusion of the four hours.
3. Competitors must submit their maps and StoryMap in a Group shared with the Coordinator / judges.
4. Students are to submit a video of their presentation no later than 24 hours after completing their skills. **Note:** the video is not to be a "produced video" with postproduction editing or effects. It should be a done in a single take. The length of the video should not exceed 10 minutes in length. It should be recorded in Microsoft Teams where students can share their screen and record their analysis.
5. The last day to submit to the competition is March 12, including video. Therefore, the last day a team can work on their project is March 11.

## 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"><li>➤ Geoprocessing using ArcGIS 10.7 or ArcGIS Online Ontario Subscription Analysis Tools to Clip, Merge, Append, Dissolve, Intersect, Union, Buffer</li><li>➤ Geocoding, Select by Attribute, Select by Location</li><li>➤ Creating a layout/map or Story Map Journal</li></ul>	<ul style="list-style-type: none"><li>➤ Creating a Layout</li><li>➤ Joining Tables</li><li>➤ Creating selections</li><li>➤ Creating and changing labels</li><li>➤ Changing symbology</li></ul>

## SAFETY REQUIREMENTS:

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

## EQUIPMENT, MATERIALS, TOOLS AND SUPPLIES:

### Supplied by competitor / school of competitor:

Any approved GIS Manuals

Computer capable of running ArcGIS Online or ArcGIS Desktop with a reliable internet connection

Work area where partners can work together safely at appropriate distance

### Supplied by committee:

All required data layers

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

Part A: Technical Skills Demonstrated During the Competition – 55%

Part B: Geographic/GIS Problem Solving Skills – Final Project / Story Map - 25%

Part C: Video written / Oral Presentation of Final Project to Judge - 20%

**Please see attached example from the GIS Skills 2018 Competition.**

**ENTRY:** Students must register online at [teched.dsbns.org/skills](http://teched.dsbns.org/skills) by the date set by the DSBN Skills coordinator. 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.

The competitor's teacher must let the Skills coordinator know the time they are going to complete the challenge.