CONTRACT REVISION, CS 4500

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Team Name:

Underdog Technologies

Project 1: ArcGIS Scavenger Hunt

Our team would create a project using ArcGIS software that would lead the students on an interactive scavenger hunt through the St. Louis area. We would focus specifically on the North St. Louis area since North St. Louis is very relevant to both UMSL students and the Girls' Inc students that would be attending the STEM enrichment program. We would accomplish this by providing the girls tutorials and prompts that would progress in difficulty as they follow along. We would provide the tutorial through a combination of videos and written guides that would teach a few concepts about ArcGIS and then provide a prompt that would require the girls to apply these concepts in order to seek out an unknown point of interest in order to continue on to the next step in the scavenger hunt. Some examples of these points could be historical sites, animal shelters, local parks, or well-known shops and restaurants from their local community.

Ideally, this would work by having them apply different layers and utilize different ArcGIS tools and datasets that would lead them to each solution. As the scavenger hunt goes on, the concepts would become more involved and include some beginner level use of the python module present in ArcGIS. We would focus heavily on using engaging media and try to make it a fun learning process by having them race to the finish. Another potential addition would be somehow involving a geocaching type process that would allow them to take their skills out of the classroom and physically visit some sites that would have the next scavenger clue waiting for them there.

The first and easiest level of the hunt would involve teaching the students to locate and define the boundaries for the hunt. In our case this would be the St. Louis area. Next, the students would be taught how to create and modify 2D features of the map such as naming, outlining, and coloring specific areas or places on the map. From there, the students would be taught to locate, name, and color a handful of specific roads within the defined map boundary area. Finally, the students would incorporate some points of interest by importing data from the default ArcGIS geodatabases in order to populate the defined map area with points of that specific data type.

An example of this would be showing all public-school building locations. An example question for solving the first stage in the hunt would be “On the map you have created, what high school is located east of Hanley Road and north of Page Avenue?”. This would be relatively trivial but would allow the students to get their feet wet with applying basic layers and importing geodatabase data into an ArcGIS project and would act as a baseline for the increasingly difficult questions that will come later in the hunt.