

CMaP Project
Desert Hills Middle School
St. George, Utah

Project Title: Parks and Homes
Created by: Todd Sparks
Class: CMaP Project

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| Project Description | Map the number of homes there are in a one mile radius around the parks of Southern St. George, Utah. |
| Community issue or problem selected -How project evolved? | This will allow locals and new comers to St. George to know the residential density of areas around parks in the Bloomington, Bloomington Hills, Desert Hills, Little Valley neighborhoods. |
| Community partners | City of St. George Parks and Recreation Dept., Washington County Parks and Recreation Dept. and Utah GIS. |
| Project objectives | <ul style="list-style-type: none"> - Students will research local city maps for park locations. - Students will research county maps for park locations. - Students will research Utah State GIS database for local residential maps. - Students will take field trips to local parks and set GPS points one mile from center of each park. This may have to be done in more then one field trip. - Students will load their GPS coordinates and exchange all files to assure each student or group has all GPS points for each park. - Students will create a working CMaP with all information collected. - Students will create a three fold brochure using Adobe PageMaker. - Students will present the information and brochure to the City of St. George city council and Chamber of Commerce for public |
| Utah core Standards/Objectives | <p><u>Standard 1</u> Students will understand the importance of technology and how it impacts our lives. (Align with National Technology Content Standards: 1-7)</p> <p><i>Objective 1</i> Students will recognize that technology is how humans modify the world around them to meet their needs and wants or to solve problems and extend their capability.</p> |

Standard 3

Students will understand and apply design principles in developing a process, product or system. (Align with National Technology Content Standards: 2-3, 8-13)

Standard 4

Students will describe and apply the basic steps in the design/problem solving process. Students will document the design process in a portfolio.

Stage 1: Problem statement and design brief

Stage 2: Investigation and research

Stage 3: Generate alternative solutions

Stage 4: Choose the best solution

Stage 5: Modeling and prototyping

Stage 6: Test and evaluate

Objective 2

Students will investigate and research data that will be useful in developing a design solution using a variety of mediums which may include the following: interview, Internet, databases, books, magazines, video, observation, measurement, and surveys.

Objective 3

Students will brainstorm and creatively generate a multitude of possible solutions to the stated problem or opportunity.

Objective 4

Students will analyze potential solutions based on design principles (see standard 3) and make a decision as to the best solution.

Objective 5

Students will implement the chosen solution. They will develop and communicate their design using technical sketching and/or drawing techniques, make graphical, mathematical and/or physical models and prototypes.

Objective 6

Students will test their design for features such as durability, ease of assembly, reliability, strength, environmental impact, quality, safety and other design principles (see standard 3).

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| | <p>Objective 7 Students will prepare an evaluation of the design product. This should include an evaluation of the product, the process and themselves.</p> <p>Objective 8 Students will present their solution in a professional manner using a portfolio which may include: engineering drawings, posters, models, power point presentations, web site, or other appropriate methods.</p> |
| Essential question(s) | What is the density population around our parks in a given radius? |
| Special issue | There may some problems with taking a field trip for most of the day. However, if presented right to the administration they would see the benefits in the students creating the project and taking the field trip. |
| Assessments (rubrics, scoring guides) | <p>The students will be assessed on the following:</p> <ul style="list-style-type: none"> - Project rubric - GPS Points created from field trip - Use of correct GIS data - Creation of CMaP - Creation of group poster - Final product loaded on the teachers website |
| Resources needed | Field trip forms, GPS units (4-6), ArcGIS database, computers, Poster board, flash drive for storing information. |
| Skills required | <p>Understand;</p> <p>GPS software</p> <p>GIS software</p> <p>Microsoft Office programs</p> <p>Adobe PageMaker</p> <p>Working as small and large group</p> <p>Ability to communicate information to small and large groups in written form and verbally</p> |
| Project team member roles | <p>Teacher(s): Initial set-up of project resources, field trip approval, liaison between the City of St. George and the students</p> <p>Student(s): Set GPS coordinates at specific locations at specific parks, gather information for setting GPS coordinates at parks, compile information and create maps along with brochures</p> |

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| | Parent(s): Assist in developing GPS locations at each park |
| Celebration/Presentation | GPS/GIS software, Microsoft Office, Adobe PageMaker, Utah CMAP and Utah ArcGIS |
| Project evaluation | Project Rubric GPS/GIS understanding Peer evaluation for small groups Product development Final product |
| Project bibliography | GPS software, ArcGIS software, Adobe manuals, MS Office, Garmin |
| Plans for future CMAP activities | Working with the school PE program to map running routes for grade level testing. Working with the HS cross country team to map training routes and future event routes. |