

PROJECT DEVELOPMENT

TIM SURINE

LOCAL HYDROLOGY AND FLOW NET PROJECT

A. MY PROJECT WILL BE DESIGNED TO ENABLE MY STUDENTS TO CONSTRUCT AN UNDERSTANDING OF HYDROLOGIC PROCESSES IN THEIR COMMUNITY. HIGHLAND JR/SR HIGH IS A SMALL AGRICULTURAL COMMUNITY THAT IS DEPENDANT ON GROUNDWATER AND HAS A HIGH CHANCE OF DAMAGING THEIR OWN WATER SUPPLY. MY 7TH GRADE EARTH SCIENCE CLASS WILL DETERMINE WHERE THEY LIVE RELATIVE TO THE FLOW OF WATER AND WHAT FACTORS INFLUENCE THE QUALITY OF THE WATER THEY USE.

B. THIS PROJECT WILL BE AIMED AT HELPING MY STUDENTS TO UNDERSTAND THE CONCEPTS OF GROUND WATER AND FLOW DIRECTION, MAP READING, INQUIRY SCIENCE, AND USING SCIENCE KNOWLEDGE TO MAKE DECISIONS LOCALLY.

C. THE PROJECT WILL CONSIST OF THE FOLLOWING STEPS:

1. STUDENTS WILL FIND THEIR HOMES ON A STREET MAP AND THEN A TOPOGRAPHIC MAP OF THE AREA.
2. BY LOOKING AT STRATIGRAPHIC COLUMN OF THE AREA STUDENTS WILL DETERMINE THE TYPES OF ROCK UNDERLYING THE AREA.
3. AFTER DISCUSSING PERMEABILITY AND POROSITY, STUDENTS WILL DETERMINE WHERE THEIR WATER TABLE IS LOCATED AND WHETHER THE SOURCE IS CONFINED OR UNCONFINED.
4. STUDENTS WILL DETERMINE WHERE THEIR HOME IS LOCATED ON A FLOW NET.
5. STUDENTS WILL DETERMINE WHAT FACTORS MIGHT POLLUTE THE WATER THEY DRINK.

D. STUDENTS WILL BE EVALUATED ON THEIR ABILITY TO COMPLETE EACH OF THE STEPS LISTED IN PART C. THIS WILL TAKE PLACE OVER A PERIOD OF AT LEAST 2 WEEKS. FOR THE ENTIRE UNIT EACH OF THE SECTIONS, 1-5, WILL ACCOUNT FOR 20 POINTS. IN ADDITION, STUDENTS WILL BE ABLE TO GAIN AN ADDITIONAL 20 POINTS FOR WRITING A PAPER THAT EXPLAINS WHAT FEATURES COULD BE SOURCES OF POLLUTION AND WHAT STEPS COULD BE TAKEN TO AVOID OR REMEDIATE THESE PROBLEMS.

E. MY PROJECT WILL CONSIST OF LOCAL MAPS, TOPO MAPS, STRAT COLUMNS AND FLOW NETS. IN ADDITION I WILL CONSTRUCT A MODEL LIKE THE HYDRO MODEL DR. IQBAL USED WITH COLORED DYES TO SHOW THE FLOW OF WATER THROUGH VARIOUS SEDIMENTS AND ROCK TYPES. THIS UNIT WOULD WORK BEST FOLLOWING A UNIT ON WATER QUALITY AND CONTAMINANTS