GEAR UP! FREQUENTLY ASKED QUESTIONS:

Why include engineering at the elementary level?

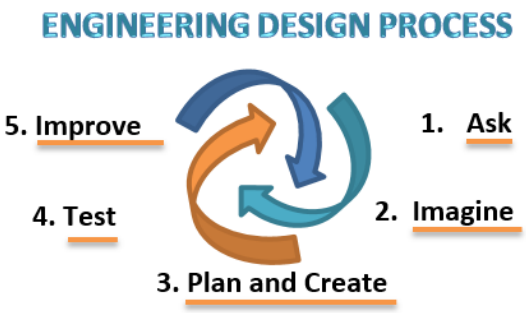
Many of the jobs that our students will hold in their lifetime do not currently exist. Education needs to be more focused on developing 21st-Century skills such as communicating, collaborating, critical-thinking and creative problem-solving. Students will benefit greatly with the integration of the engineering design process in their classes through their exposure to critical thinking, collaborative design, evaluating and redesign work. Most students learn best by doing; GEAR UP will get them "doing"!
Also, studies show that student interest in STEM subject areas peaks between the ages of 9 and 14 making elementary/middle school the perfect place to fuel their futures.

How was the Diocese of Buffalo curriculum developed?

Our GEAR UP program parallels the Virginia Children's Engineering Council. We visited schools in Virginia to observe their program, slightly modified the format and created original design briefs to correlate with the Common Core standards and to incorporate Religion.

What does engineering look like at the elementary level across the curriculum?

Each engineering project consists of two parts: the design brief that details the problem (challenge), criteria and materials and the guided portfolio which directs the students through the engineering design process.
The engineering design process will not be limited to science class with the upcoming Next Gen Science Standards. In fact, you will find it integrated across many subject areas with broad educational benefits and plentiful real-life applications.



A primary design brief has the students designing a bed for Jesus which would be appropriate for the Christmas season. Second graders will read the book, "A Chair for Mother", and design a chair for their mothers. A seventh grade brief has the students designing and making a personal water carrying device to connect with the book "A Long Walk to Water" with a possible extension of students walking laps around the gym using their created devices as a fundraiser for the organization *Water for South Sudan.*