Resurrection
COLLEGE PREP HIGH SCHOOL
Caritate et Veritate

"In the Christian educational project, all subjects collaborate, each with its own specific content, to the formation of mature personalities." – CCC 1997

STREAM TEAM

Dr. Rick Piwowarski
Principal

- Ph.D. – Catholic University of America
- STREAM Committee for the NCEA

Dr. Megan Leider
Science Coordinator

- Ed.D. – Loyola University, Science Curriculum and Instruction

Joe Lascon
Assistant Principal

- MS - University of Central Missouri, Educational Technology

Third Party Consultants

- Dr. Pamela Bernards, NCEA Director of Professional Development
- Dr. Keven Calkins (Program Design & Implementation
- Dr. Jonathon Moore, Assistant State Superintendent for Science Education (Science & Math Integration)
- Dr. Erik Chittle (Religion & Science Integration)
- Dr. Jennifer McDonald (English & Art Integration)
- Dr. Linda Brazdil, Director of the Center for Science & Math
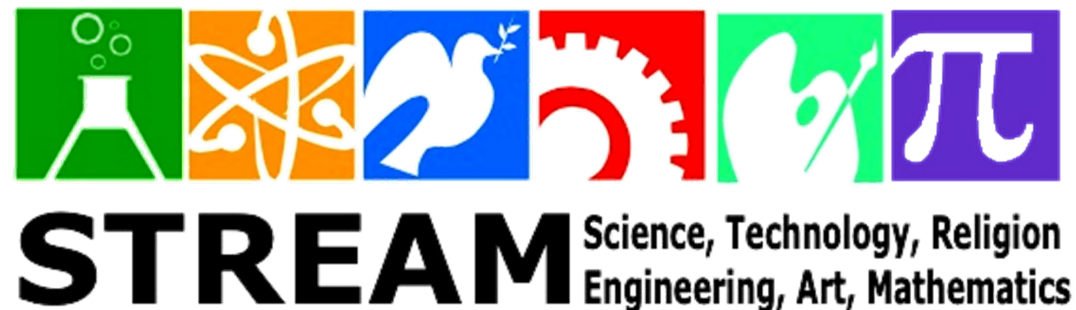
What is *STREAM?*

Mr. Joe Lascon

When am I ever going to use this?

Why does this work matter?

This is impossible. I can't do this.

What is *STREAM*?

STREAM is a mission-centered approach to teaching Science, Technology, Religion, Engineering, Art, and Math.   Students will make connections across each of these disciplines with an emphasis on scientific observation, technological exploration, artfully engineered design with a focus on solving relevant, real world problems, all grounded in a Catholic world-view. **We posit that a *STREAM* program is a transformative catalyst for creative problem solving.**

STREAM Science, Technology, Religion Engineering, Art, Mathematics

STREAM LEARNING…

01 Incorporates
The expertise of both STEM and arts educators to create an authentic, interdisciplinary experience for students.

02 Borrows
From the scientific & engineering design models. It also utilizes the iterative artistic/creative processes, artistic production & exhibition as critical milestones in the experience.

03 Allows
Students to direct their own learning through experimentation, positioning teachers as guides of personalized learning.
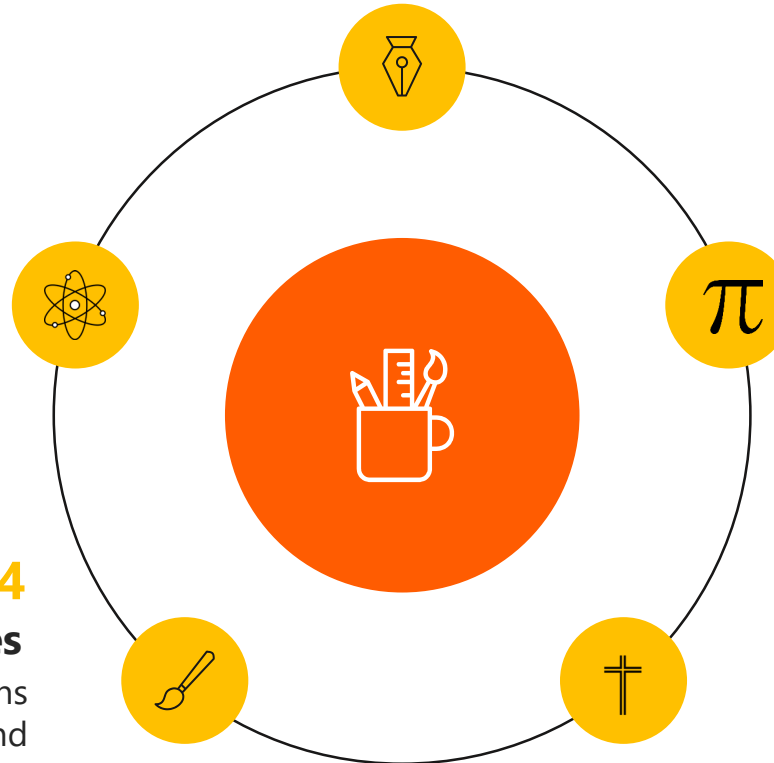
04 Leverages
Real-world connections wherever possible and highlights the nexus of career & technical education, the arts and our moral response to these connections..

05 Fosters
An Environment that encourages creative problem solving, group collaboration, and independent research.

5/30/2019

*content on this page is drawn from National Catholic Educational Association

STREAM increases content literacy for all students, ***including those who do not*** pursue technology or science related careers.

Why *STREAM* Matters
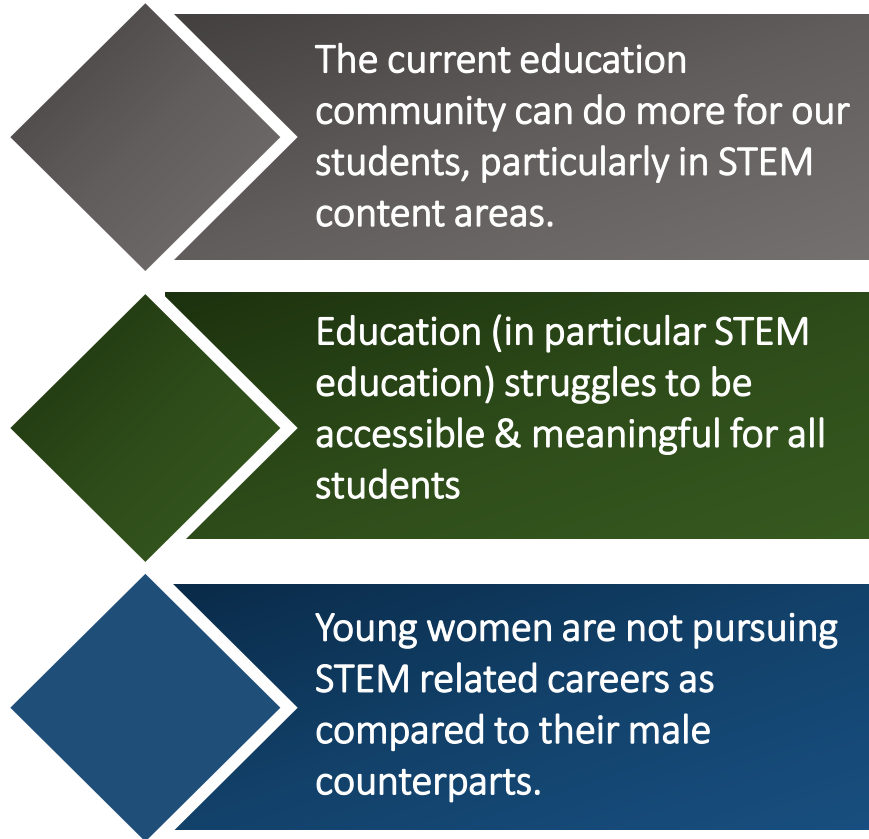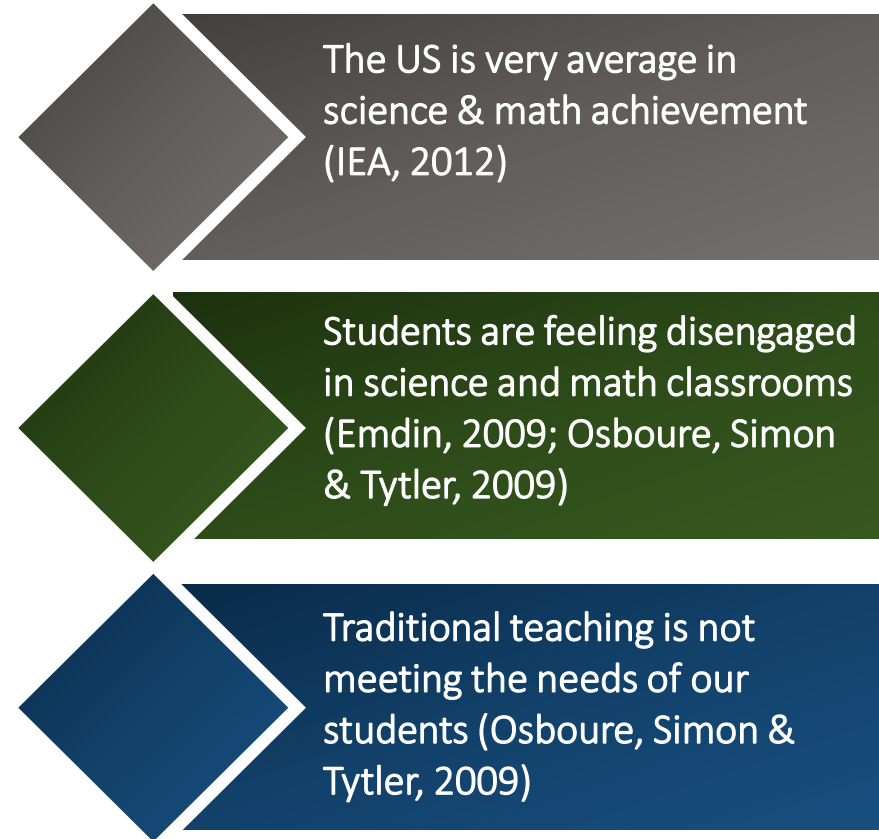
Dr. Megan Leider
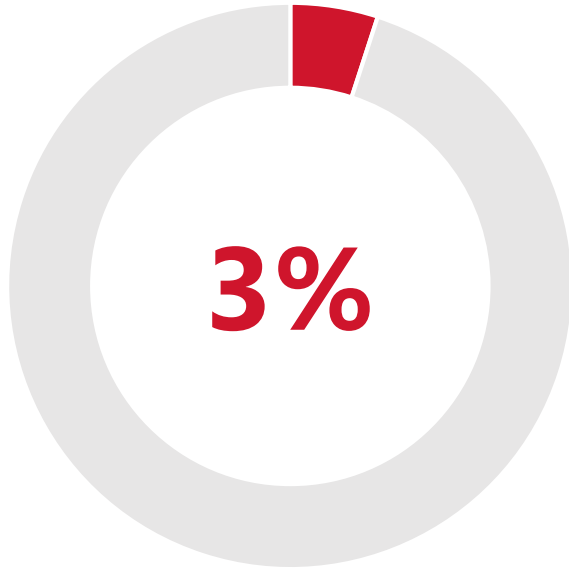
State of Education

Current State

The current education community can do more for our students, particularly in STEM content areas.

Education (in particular STEM education) struggles to be accessible & meaningful for all students

Young women are not pursuing STEM related careers as compared to their male counterparts.

Research

The US is very average in science & math achievement (IEA, 2012)

Students are feeling disengaged in science and math classrooms (Emdin, 2009; Osboure, Simon & Tytler, 2009)

Traditional teaching is not meeting the needs of our students (Osboure, Simon & Tytler, 2009)
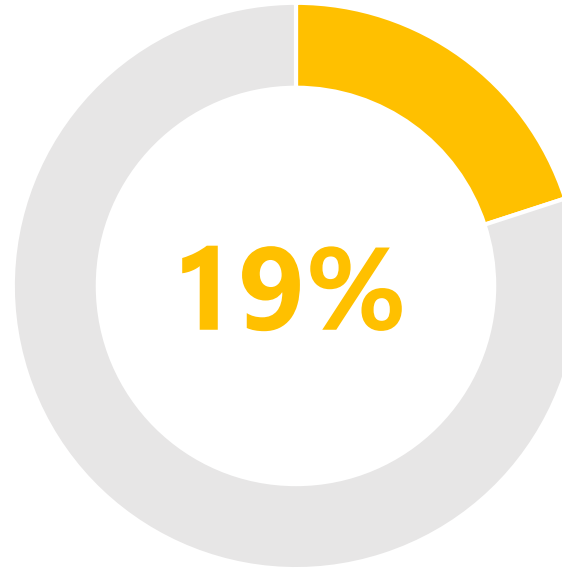
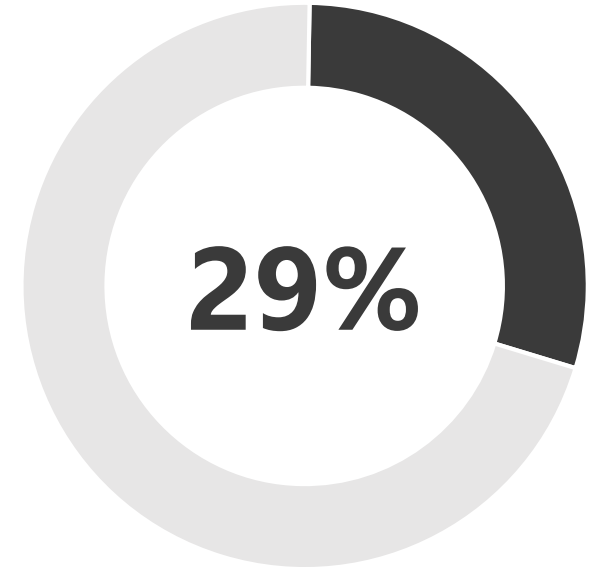# Women in Technology

3%

19%

29%

Jobs

1.4 million jobs are expected to be added in computer-related fields by 2021. **Women are projected to fill 3% of those jobs.**

College

While women receive over ½ of bachelor's degrees awarded in the biological sciences, **they receive far fewer in computer science (17.9) and engineering (19.3.)**
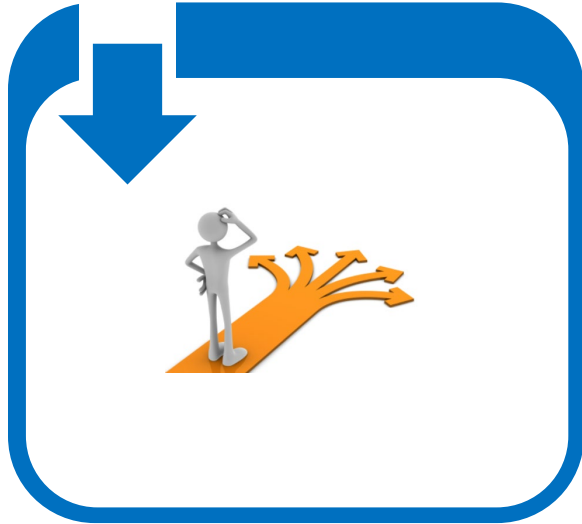
Workforce

Women make up half of the total U.S. college-educated workforce, **but only 29% of the science and engineering workforce.**
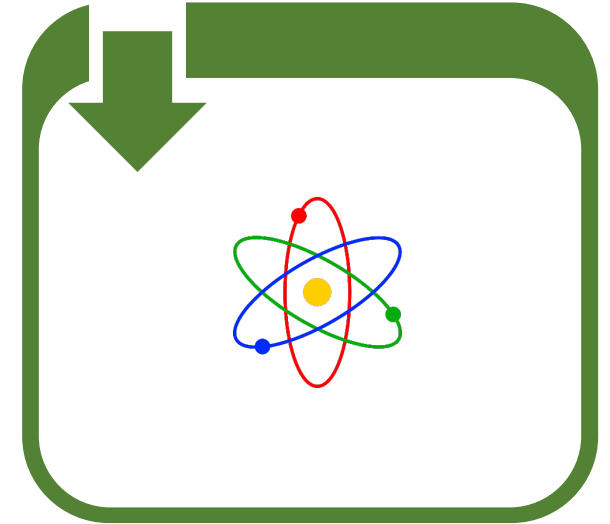
The Solution

Approach

STREAM is an instructional approach that engages students in collaborative research based scientific inquires.

Challenge

STREAM challenges the traditional roles students and teachers have played in the classroom

Provide

STREAM provides students with a more accurate depiction of how scientists actually do science

STREAM at Resurrection

Dr. Rick Piwowarski

Why the "*R*" in *STREAM*?

Simple. It is who we are.

Resurrection seeks to integrate our Catholic Identity into every aspect of the curriculum. With *STREAM*, students will see this intent manifest via projects based in social justice as well as in-depth experiential instruction in the teachings of the Church.

STREAM Mission Statement

True to the call of the Sisters of the Resurrection to "transform society", the Resurrection *STREAM* program works to prepare students with the skills, knowledge, strategies, access and opportunities to become innovative and creative problem solvers of relevant, real-world problems informed by a Catholic world-view. *STREAM* is a mission-centered approach to teaching science, technology, religion, engineering, art and math.
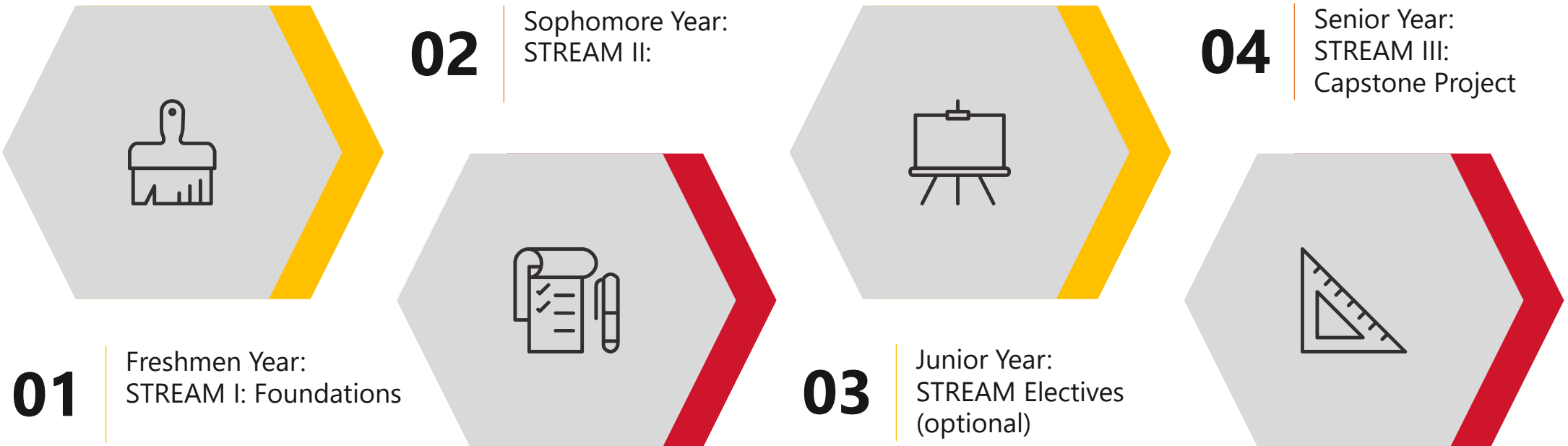.

What is the Difference?

Res *STREAM* Course vs Regular Course

At its core, a **STREAM** course, like all Resurrection courses, is a Catholic mission-centered approach to preparing our young women to transform society. However, a *STREAM* course is one that uniquely positions the student as a contemporary, integrated problem solver, combining skills and understandings taught and acquired in a *variety of courses and contexts (drawing from current and previous coursework),* to solve real world problems or advance conceptual understandings. These courses will rely heavily upon either the 5-step Engineering Design Process or significant cross-curricular integration connected to a project-based learning approach.

4 YEAR TIMELINE

Intentional Four Year Program

STREAM I & II are offered for Honors credit and STREAM III will be proposed as an AP credit bearing course. Each course is a year-long course offered for a full credit. Students will have .5 of their required 1.0 Fine Arts credit waived in addition to their required Speech course.

02 Sophomore Year: STREAM II:

04 Senior Year: STREAM III: Capstone Project

01 Freshmen Year: STREAM I: Foundations

03 Junior Year: STREAM Electives (optional)

STREAM Students will be able to...

STREAM Student Learning Objectives

Upon completion of the STREAM program, students will be able to...

DEMONSTRATE

an increased self-awareness that connects her life's purpose with her God-given talents.

APPROACH

her learning in a collaborative manner that combines hard-skills and soft-skills to view contemporary problems as challenges she can overcome.

CONSIDER

the world around her as a series of interrelated facets and not discrete components of phenomenon.

LEVERAGE

the skills gained and understandings acquired via the program to empower her future efforts at making her local and global communities better.

Current *STREAM* Electives

- INTEGRATED HEALTH SCIENCE
- INTRODUCTION TO ROBOTICS
- FOUNDATIONAL PRINCIPLES OF ENGINEERING
- GRAPHIC DESIGN
- DIGITAL PHOTOGRAPHY
- MOBILE MAKERS

Senior Capstone

What is it?

Students will conclude the STREAM program with a senior year capstone project. During this capstone project students will have the opportunity to apply their knowledge and skills acquired in the previous STREAM classes in order to identify a problem they would like to solve. The identified problem must be reflective of the student's understanding of the humanities and of engineering design.

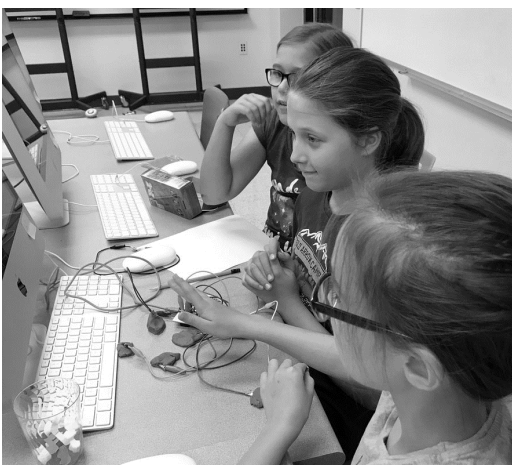| **STREAM I & II**	**IDENTIFY & RESEARCH**	**APPLY**	**PRESENT**
Develop knowledge & skills needed	A relevant, real-world issue that they are interested in researching & solving	Apply knowledge & skills to work towards addressing the identified problem	TED Style presentation on the problem and the work done to address it

STREAM Symposium

The proposed STREAM symposium will be an opportunity for our students to demonstrate the work and skills that they have developed over the past year.

This event will provide leadership opportunities that allow for our students to demonstrate learning, engage in leadership, and model an empowering message of *"You can do it, too!"*

STREAM Requirements

STREAM I - III

1 STREAM Club

Capstone Project

Annual STREAM Symposium

Annual STREAM Experiences

Students who complete the four-year STREAM program will be recognized at their senior graduation with a STREAM academic cord and a certificate of completion. Each of the items listed above are required for successfully completion of the Resurrection STREAM program.
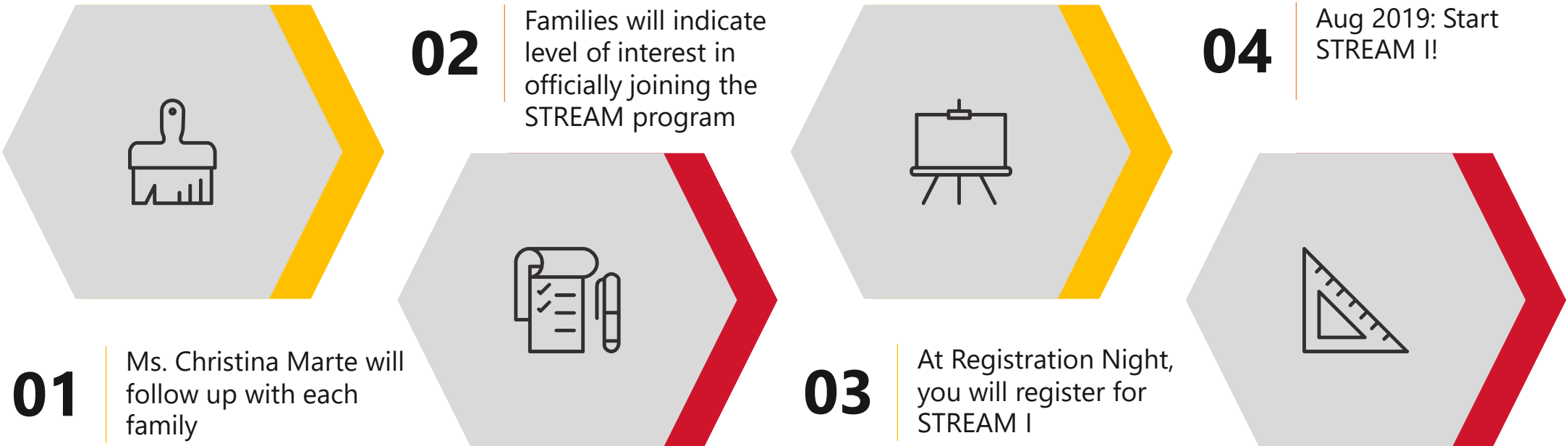
What's Next?

What's Next

STREAM I is capped at 15-20 students. Students interested in officially joining the program are recommended to let Ms. Christina Marte know as soon as possible to reserve your spot in the program.

02 Families will indicate level of interest in officially joining the STREAM program

04 Aug 2019: Start STREAM I!

01 Ms. Christina Marte will follow up with each family

03 At Registration Night, you will register for STREAM I

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