



▶ FCS IS APPLIED SCIENCE, TECHNOLOGY AND MATH THROUGH CONTEXTS SUCH AS NUTRITION AND FOOD SCIENCE, APPAREL, TEXTILES, AND INTERIOR DESIGN.



▶ FCS PROMOTES STEM PHILOSOPHY THROUGH PROBLEM-BASED INSTRUCTION PULLING FROM THE SOCIAL, BIOLOGICAL, AND CHEMICAL SCIENCES.



▶ FCS IS FOUNDATIONAL STEM LITERACY INCLUDING A PLAN PROCESS MODEL WHICH OFFERS INTRODUCTION TO THE ENGINEERING DESIGN PROCESS.

ADDRESSING THE NEED FOR STEM EDUCATION AND STEM SUCCESS HAS A CONNECTION TO **FAMILY AND CONSUMER SCIENCES** AT THE FOUNDATIONAL LEVEL.

*Family and Consumer Sciences has many connections to STEM which range from **food technology, nutrition science and textiles** industries to **early STEM skill development** in young children, inquiry based instruction and 21st century skills development.*

# connection

## Developing STEM Literacy Through FCS

Many in the STEM profession stress the need for specific aptitudes related to the 21st century skills for STEM success. These range from **critical and innovative thinking to effective communication and ability to work in teams** successfully.

This is also reflected in the occupational framework of the Common Career and Technical Core—**Career Ready Practices**.

Family and Consumer Sciences has been teaching 21st century skills since 1996. This ability to take information in context and process it using these skills is strategic

and repeated at increased rigor to ensure students “get it”.

The **21st century process skills**, which align with STEM literacy skills, are the following:

- ◇ Problem Solving
- ◇ Decision Making
- ◇ Goal Setting
- ◇ Cooperation
- ◇ Management
- ◇ Leadership
- ◇ Communication
- ◇ Critical Thinking



## Promoting the STEM Profession

Family and Consumer Sciences is found in middle and secondary schools across the nation. In fact, **27,000** Family and Consumer Sciences teachers are teaching **3.5 million students** annually according to a recent survey by Dr. Carol Werhan, Pittsburg State University (Kansas). This survey further documented a 3:1 female to male participation which means FCS is placed perfectly to introduce and **promote STEM to all students**, but strategically placed to offer a **STEM introduction to females**.



# Documenting STEM Knowledge and Skills Through FCCLA

*Family, Career and Community Leaders of America is Family and Consumer Sciences in action.*

FCCLA offers a variety of experiences to allow the student an appropriate “*first step*” in **leadership, teamwork** and related 21st century process skills, including a **planning process** similar to the **engineering** design process.

Over 200,000 members, representing **all ethnic and socioeconomic circumstance** apply the FCS content through their families, school and communities, many working in diverse teams.

Through a 2013 survey of 30,000 secondary students conducted by the National Research Center for Colleges and Universities (NRCCUA), **63.2%** attri-

bute their **ability to communicate well** with others to their FCS/FCCLA experience and **61.3%** attributed this combination to their **ability to work successfully with others**.

In addition, FCCLA offers **competitive events in STEM related areas** such as Food Innovations, Recycle and Redesign, Sports Nutrition, Interpersonal Communications, Leadership, Culinary Math and Interior Design. Many of these events require an understanding of iSTEM concepts and application.

STEM skill development can be documented through a variety of methods in the Family and Consumer Sciences classroom, but also through the student organization **Family, Career and Community Leaders of America (FCCLA)**.

FCCLA provides the avenue for students to practice skills learned in Family and Consumer Sciences in **authentic, real work applications**.

## NATIONAL STANDARDS STEM Fields in FCS

National Standards for



Family and Consumer Sciences national standards align to industry needs. Content areas listed below are STEM examples:

- ◇ Food Science Dietetics and Nutrition
  - ◇ Housing and Interior Design
  - ◇ Textiles, Fabrics and Apparel
  - ◇ Education and Early Child
  - ◇ Food Production and Services
- [www.nasafacs.org](http://www.nasafacs.org)



Gayla Randel, CFCS

National Coalition for Family and Consumer Sciences Education  
[grandel@ksde.org](mailto:grandel@ksde.org) 785-296-4912

