Flight and Space 219912

The exciting world of aerospace comes alive through Flight and Space. During this unit, students delve into the history of flight and space, discover the science behind aeronautics, and explore traveling and living in space. Students are then challenged to use their knowledge to design, build, and test an airfoil. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Green Architecture 219915

Today's students have grown up in an age of "green" choices. In this unit, students learn how to apply this concept to the fields of architecture and construction by exploring dimensioning, measuring, and architectural sustainability as they design affordable housing units using Autodesk's® 3D architectural design software. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Introduction to Computer Science 219918

Students to discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects. Throughout the unit, students will learn about programming for the physical world by blending hardware design and software development. They will design and develop a physical computing device, interactive art installation, or wearable, and plan and develop code for microcontrollers that bring their physical designs to life. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Invention and Innovation 210101

This course provides students with opportunities to apply the design process in the invention or innovation of a new product, process, or system. In this course, students will learn all about invention and innovation. They will have opportunities to study the history of Invention and Innovations, including their impacts on society. They will learn about the core concepts of technology and about the various approaches to solving problems, including engineering design and experimentation. Finally, students learn about how various Invention and Innovations impact their lives. Students participate in engineering design activities to understand how criteria, constraints, and processes affect designs. Students are involved in activities where they learn about brainstorming, visualizing, modeling, constructing, testing, experimenting, and refining designs. Students also develop skills in researching for information, communicating design information, and reporting results. This course will make extensive use of a laboratory environment through a variety of instructional strategies. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Students will:

1. Demonstrate the use of an engineering design process to solve real-world problems.
2. Define technology and use technological terminology correctly.
3. Identify and become aware of ways technology has been used to satisfy human needs and environmental concerns.
4. Evaluate the impacts of technological Invention and Innovation on people, society, culture, and the environment.
5. Develop and use problem solving and decision making skills including brainstorming, visualizing, modeling, constructing, testing, and refining to invent, design, create, and modify devices and systems.
6. Implement elements of form and function to the design process.
7. Use tools, machines, and materials in a safe, efficient, and effective manner.
8. Identify and analyze current and emerging issues (ethical, social, legal, environmental, political, and privacy) related to technology.
9. Describe intended and unintended impacts of the application of technological solutions.
10. Identify appropriate and inappropriate applications of technology.
11. Analyze how and why society demands impact invention and innovation.
12. Identify that a product, system, or environment developed for one setting may be applied to another setting.
13. Develop an understanding that innovations are alterations of previous inventions.
14. Explore employability and social skills relative to careers involving invention and innovation.

Magic of Electrons 219913

Through hands-on projects, students explore electricity, the behavior and parts of atoms, and sensing devices. They learn knowledge and skills in basic circuitry design, and examine the impact of electricity on the world around them. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Medical Detectives 219916

Students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a "crime scene." They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Middle School STEM 300190

This course is one designed to allow students to explore the sciences, in a STEM (Science, Technology, Engineering, and Math) environment, beyond the Kentucky Academic Standards. Students should, however, explore using the science and engineering practices and crosscutting concepts. The science and engineering practices are skills students will use as they investigate the natural world and develop solutions to problems. The crosscutting concepts are conceptual ways of thinking that cross the domains in the STEM (Science, Technology, Engineering, and Math) fields.

Recommended Grade Level: 6 - 8

Science and Technology 219911

Science impacts the technology of yesterday, today, and the future. Students apply the concepts of physics, chemistry, and nanotechnology to STEM (Science, Technology, Engineering, and Math) activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nano-materials. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Technological Systems 210103

This course is intended to teach students how technological systems work together to solve problems and capture opportunities. A system can be as small as two components working together (technical system/device level) or can contain millions of interacting devices (use system/network level). We often break down the macro-systems into less complicated micro-systems in order to understand the entire system better. However, technology is becoming more integrated, and systems are becoming more and more dependent upon each other than ever before. Electronic systems are interacting with natural (for example, biological) systems as humans use more and more monitoring devices for medical reasons. Electrical systems are interacting with mechanical and fluid-power systems as manufacturing establishments become more and more automated. This course will give students general background on the different types of systems but will concentrate more on the connections between these systems. The goals of this course can be accomplished in a laboratory environment through a variety of instructional strategies. **Participation in Kentucky Technology Student Association will greatly enhance instruction.**

Recommended Grade Level: 6 - 8

Students will:

1. Demonstrate the use of an engineering design process to solve real-world problems.
2. Define technological systems.
3. Explore technological concepts and processes in the contexts of energy and power, information and communication, transportation, manufacturing, construction, medical, agricultural and bio-related technologies in emerging technological systems/sub-systems.
4. Design, test, evaluate, and modify models within technological systems.
5. Solve basic technological problems using tools, machines, materials, and processes in an applied project-based approach.
6. Analyze current and emerging issues (ethical, social, legal, environmental, political and privacy) related to a wide variety of technological systems.
7. Develop and demonstrate strategies and work habits that will lead to success and prepare the student for a future career in a technological world.
8. Demonstrate and apply an understanding of technological systems and the relationships between the resources/input, processes, output, and feedback elements of these systems.
9. Analyze the changing nature and impacts of a variety of technological systems.
10. Identify current and emerging occupations related to a variety of technological systems.
11. Identify, analyze, and compare current and emerging jobs, careers, and occupations relating to a variety of technological systems.

FAMILY AND CONSUMER SCIENCES EDUCATION

Introductory FACS Essentials 6th Grade 200110

This course introduces students to Family and Consumer Sciences through various units of instruction. The units relate to personal growth and development, consumer and management skills, goal setting and decision making, family studies, nutritional needs, foods preparation and sanitation, career development and interpersonal relationships.

Recommended Grade Level: 6

Recommended Credit: N/A

Students will:

1. Explore opportunities for volunteerism to enhance personal development skills.
2. Identify developmental tasks of pre-adolescence and adolescence.
3. Demonstrate appropriate communication skills.
4. Practice steps in setting and achieving goals.
5. Identify and apply the steps of the decision making process.
6. Determine the consequences of high risk behaviors.
7. Identify personal grooming habits.
8. Examine qualities needed to maintain friendship.
9. Practice appropriate social skills in a given situation.
10. Examine different family types and the roles of each family member.
11. Identify the benefits of time management skills.
12. Identify sources and management of income opportunities relevant for teens.
13. Differentiate between wants and needs.
14. Apply consumer rights and responsibilities for purchasing decisions.
15. Examine the impact of consumer decisions on the environment.
16. Identify the influences of the different types of advertisements on the consumer.
17. Examine influences on eating habits.
18. Plan healthy meals and snacks based on the current Dietary Guidelines for Americans and the MyPlate.
19. Calculate calories needed according to the Body Mass Index (BMI).
20. Describe the correct and safe use of kitchen appliances and utensils.
21. Use rules of sanitation and cleanliness in the kitchen.
22. Use correct methods and techniques in preparing food.
23. Analyze factors that influence clothing choice.
24. Design a plan for care and storage of clothing.
25. Construct a textile project by hand or machine.
26. Predict the employment outlook based on the level of education.
27. Identify careers in Family and Consumer Sciences.
28. Predict ways computers will affect daily and work life in the future.
29. Examine employability skills relevant to the industry.
30. Utilize activities of the Family, Career and Community Leaders of America (FCCLA) student organization as an integral component of course content and leadership development.
31. Apply math, science, and communication skills within technical content.

Introductory FACS Essentials 7th Grade 200111

This course introduces students to Family and Consumer Sciences through various units of instruction. The units relate to personal growth and development, consumer and management skills, goal setting and decision making, family studies, nutritional needs, foods preparation and sanitation, career development and interpersonal relationships.

Recommended Grade Level: 7

Recommended Credit: N/A

Students will:

1. Explore opportunities for volunteerism to enhance personal development skills.
2. Identify developmental tasks of pre-adolescence and adolescence.
3. Demonstrate appropriate communication skills.
4. Practice steps in setting and achieving goals.
5. Identify and apply the steps of the decision making process.
6. Determine the consequences of high risk behaviors.
7. Identify personal grooming habits.
8. Examine qualities needed to maintain friendship.
9. Practice appropriate social skills in a given situation.
10. Examine different family types and the roles of each family member.
11. Identify the benefits of time management skills.
12. Identify sources and management of income opportunities relevant for teens.
13. Differentiate between wants and needs.
14. Apply consumer rights and responsibilities for purchasing decisions.
15. Examine the impact of consumer decisions on the environment.
16. Identify the influences of the different types of advertisements on the consumer.
17. Examine influences on eating habits.
18. Plan healthy meals and snacks based on the current Dietary Guidelines for Americans and the MyPlate.
19. Calculate calories needed according to the Body Mass Index (BMI).
20. Describe the correct and safe use of kitchen appliances and utensils.
21. Use rules of sanitation and cleanliness in the kitchen.
22. Use correct methods and techniques in preparing food.
23. Analyze factors that influence clothing choice.
24. Design a plan for care and storage of clothing.
25. Construct a textile project by hand or machine.
26. Predict the employment outlook based on the level of education.
27. Identify careers in Family and Consumer Sciences.
28. Predict ways computers will affect daily and work life in the future.
29. Examine employability skills relevant to the industry.
30. Utilize activities of the Family, Career and Community Leaders of America (FCCLA) student organization as an integral component of course content and leadership development.
31. Apply math, science, and communication skills within technical content.

Introductory FACS Essentials 8th Grade 200112

This course introduces students to Family and Consumer Sciences through various units of instruction. The units relate to personal growth and development, consumer and management skills, goal setting and decision making, family studies, nutritional needs, foods preparation and sanitation, career development and interpersonal relationships.

Recommended Grade Level: 8

Recommended Credit: N/A

Students will:

1. Explore opportunities for volunteerism to enhance personal development skills.
2. Identify developmental tasks of pre-adolescence and adolescence.
3. Demonstrate appropriate communication skills.
4. Practice steps in setting and achieving goals.
5. Identify and apply the steps of the decision making process.
6. Determine the consequences of high risk behaviors.
7. Identify personal grooming habits.
8. Examine qualities needed to maintain friendship.
9. Practice appropriate social skills in a given situation.
10. Examine different family types and the roles of each family member.
11. Identify the benefits of time management skills.
12. Identify sources and management of income opportunities relevant for teens.
13. Differentiate between wants and needs.
14. Apply consumer rights and responsibilities for purchasing decisions.
15. Examine the impact of consumer decisions on the environment.
16. Identify the influences of the different types of advertisements on the consumer.
17. Examine influences on eating habits.
18. Plan healthy meals and snacks based on the current Dietary Guidelines for Americans and the MyPlate.
19. Calculate calories needed according to the Body Mass Index (BMI).
20. Describe the correct and safe use of kitchen appliances and utensils.
21. Use rules of sanitation and cleanliness in the kitchen.
22. Use correct methods and techniques in preparing food.
23. Analyze factors that influence clothing choice.
24. Design a plan for care and storage of clothing.
25. Construct a textile project by hand or machine.
26. Predict the employment outlook based on the level of education.
27. Identify careers in Family and Consumer Sciences.
28. Predict ways computers will affect daily and work life in the future.
29. Examine employability skills relevant to the industry.
30. Utilize activities of the Family, Career and Community Leaders of America (FCCLA) student organization as an integral component of course content and leadership development.
31. Apply math, science, and communication skills within technical content.