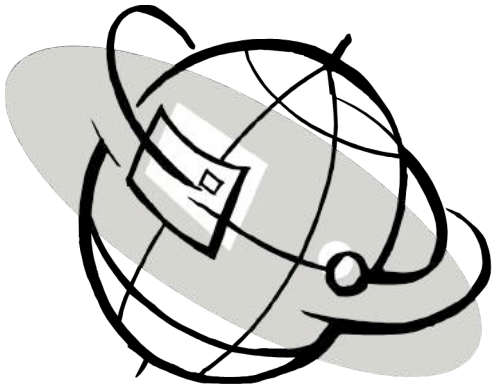
Middle School Career Academies for College and Career Readiness

A Guide for Interdisciplinary Implementation



This guide provides an overview to the career academy model, as implemented **Newark Valley Middle School** in N.Y. It describes the benefits for all students and advantages for teachers. Lesson plans for family & consumer sciences, art education, English language arts, general science, health education and social studies are provided, making this a useful tool for many classrooms.

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Acknowledgements

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Art, ELA, Science,
Health, Social Studies

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CTE Technical Assistance Center of New York: Mission and Purpose

The Career and Technical Education Technical Assistance Center (CTE TAC) of New York assists the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of Career and Technical Education (CTE) through research-based methods and strategies resulting in broader CTE opportunities for all students.

The CTE TAC operates as part of the Successful Practices Network (SPN) under a contract with the NYSED. The CTE TAC increases the capacity of the NYSED to serve, support, and expand CTE across the state.

CTE TAC services are provided to teachers and students in:

- ❑ Local education agencies
- ❑ BOCES
- ❑ High needs school districts
- ❑ CTE professional organizations
- ❑ CTE student leadership organizations

CTE TAC Work Plan

- ❑ CTE data collection and communications
- ❑ Networking to strengthen CTE
- ❑ Integration of the Common Core State Standards
- ❑ CTE program and student leadership expansion
- ❑ CTE program approval process
- ❑ Best practices in CTE

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Middle School Career Academies for College and Career Readiness: A Guide for Interdisciplinary Implementation

Overview of the Guide

Middle School Career Academies for College and Career Readiness: A Guide for Interdisciplinary Implementation is a description of the Newark Valley Middle School program that is researched based and operating in Newark Valley, NY. Part I of the guide talks about the structure of the program and Renzulli's Enrichment Triad Model on which it is based. The philosophy, delivery, student projects, program outcomes, and lessons learned are explained. A resource list is provided to assist those who wish to replicate the model. An administrative perspective by the school's principal is also included.

Part II is designed to be used as a working document as teachers pursue the Career Academy Model. The introduction to this part provides a Lesson Plan Template which can be accessed as a Word document for easy use. The middle school teachers provide their thoughts about program implementation here as well. The first section of lesson plans is dedicated to Family and Consumer Sciences lessons because the academies grew out of the work that Jessica Williams, FACS teacher, was doing in her classroom. The lessons and their supporting appendices are offered for use as they are, or to be adjusted to meet the needs of other classrooms, students and teachers.

The second section of lessons come from English Language Arts, General Science, Social Studies, Health Education and Art Education teachers who joined Ms. Williams in the Career Academy initiative. Grading rubrics and student work samples are also provided with these lessons.

It is hoped that the reader will find this document useful in moving toward a Career Academy structure in their middle school. The document may be used to meet individual school and teacher needs in creating active and engaging student experiences.

Middle School Career Academies for College and Career Readiness: A Guide for Interdisciplinary Implementation

Part I - Introduction

Overview of the Career Academy Model at Newark Valley Middle School

Introduction

Newark Valley Middle School (NVMS) is a comprehensive grade 4-7 school located in rural New York. The education program offers core and special area courses including Family & Consumer Sciences. The school's approximately 1,200 students represent a range of socioeconomic levels.

In the fall of 2012, the 7th grade team implemented a pilot career academy model in order to:

- increase student engagement by providing a highly differentiated curriculum
- promote 21st century skills
- integrate the Common Core
- assist students as they start to plan for college and careers.

The model is based on the Enrichment Triad Model (ETM) of teaching and learning, developed by Dr. Joseph Renzulli, an educational psychologist at the University of Connecticut's Neag Center for Gifted Education and Talent Development. The model aims at replacing dependent and passive learning with active and engaged student experiences. Started as a Family & Consumer Sciences (FACS) classroom experience in which students explored career options; the use of the ETM has spread throughout the 7th grade and is now part of science, math, ELA, social studies, and health classes. Full implementation of the model took five years of planning.

Research is being conducted to determine the impact of this model on student planning for college and career. Initial findings indicate that students are highly engaged and gaining 21st century skills. Interestingly, the model promotes a critical and perhaps unexpected benefit: the creation of social capital as defined by positive worker traits such as intellectual courage, passionate dedication to a discipline, sensitivity to human concerns, and a willingness to engage in challenging work.

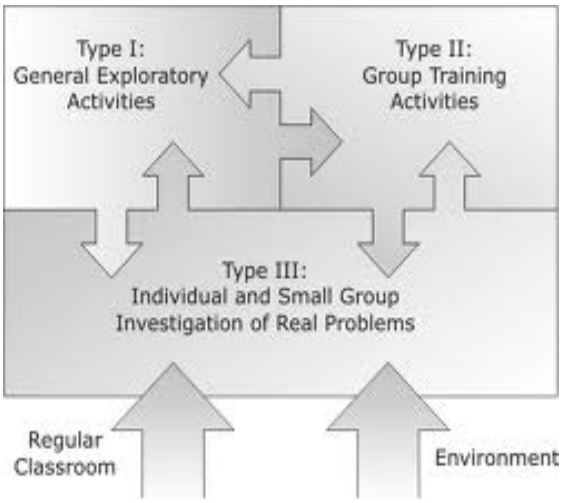
This early research on the NVMS experience indicates that the model may be uniquely suited to helping students gain 21st century skills, as well as positive character traits that lead to pro-social behaviors in school and the workplace Other schools can implement similar models, leading to better outcomes for students and schools as well as for society.

"I want to build and design buildings that go into nature…where you don't bulldoze down trees because that's what is giving us oxygen. I want to save the environment. I want to contribute to nature."

Philosophy Underlying the Model

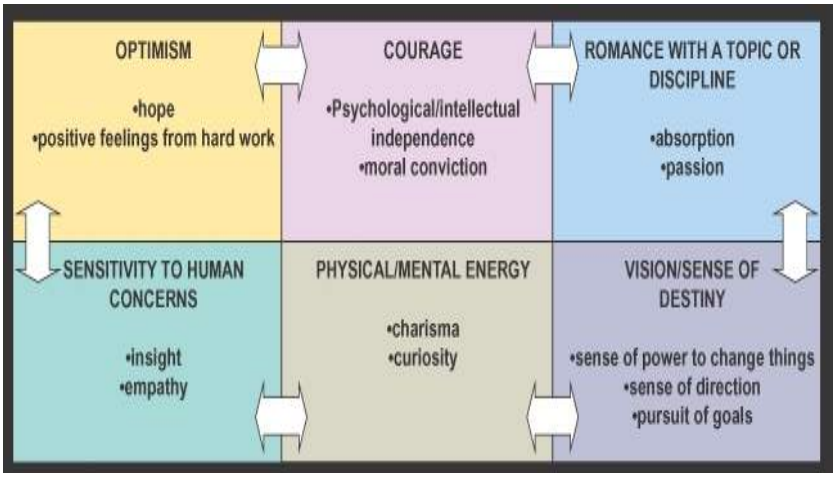
The Career Academy model at NVMS is actually based on two ideas developed by Renzulli. The first is the Enrichment Triad Model (ETM), in which curricular design focuses on:

- an appreciation that each learner is unique and therefore all learning experiences must be examined in ways that take into account the abilities, interests, and learning styles of the individual
- assessment of all learning activities for enjoyment, since learning is more effective when students enjoy what they are doing
- connections to real, current problems that are student-chosen
- student constructed meaning of content and learning. (Renzulli, 1976)



The ETM is comprised of three types of experiences. Type 1 experiences "expose children to a wide variety of disciplines, topics, occupations, hobbies, persons, places and events." Examples of Type 1 experiences include watching a documentary, hearing a speaker, taking a mini-course, and watching a performance. Type 2 experiences focus on the development of learning how to learn in a particular discipline and involve the "deliberate process of thinking and feeling about the discipline and the work it entails." Type 3 activities involve a student becoming a first-hand inquirer. (Renzulli & Reis, nd)

The second idea on which we base our philosophy is that of Operation Houndstooth. This theory delineates traits that, when exhibited in a person, are thought to comprise wisdom. Through specific methods of teaching and learning, we work to develop these traits in our students:



- optimism: hope and positive feelings from hard work
- courage: psychological and intellectual independence, moral conviction
- romance with a discipline or topic: absorption, passion

- sensitivity to human concerns: insight, empathy
- physical & mental energy: charisma, curiosity
- vision/sense of destiny: sense of power to change things, sense of direction, pursuit of goals. (Renzulli, 2002)

We believe that by allowing students the opportunity to examine all learning through their own talents or interests as they relate to a future career, we are encouraging them to find a "purpose" in their lives: one that they believe can make the world a better place. Having purpose is linked to a host of positive behaviors, is often discussed in tandem with wisdom, and is considered, by at least one group of scholars, to be a measureable component of wisdom. (Jason *et al*. 2001) Damon and his colleagues (2003) defined purpose in a way that delineated a direct link between the concept of purpose and the concept of wisdom. "Purpose is a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self."

"It's made me excited to start a career like this. Sometimes now I dream I'm an oncologist. I don't know if that means anything…maybe it's because I'm working so hard with it."

Careers remove people from isolation and alienation by engaging them in action-oriented participation; a give-and-take exchange with the outside world in which they become linked to other people and a larger social good. Having a career provides people with a sense of purpose and interdependence, encouraging reciprocity, mutuality, and altruism. These are just the type of 21st century skills we are trying to encourage in education today. By linking the curriculum to a student's life purpose through career education and development, we produce students who are truly college and career ready and actually promote social capital that will be used to make the world a better place. (Bloch, 2005; Blondel, as cited in Savickas; Fletcher, 2004; Hall, 1996; Peterson, 2012; Pink, 2009; Richardson, as cited in Patton & McMahon, 2006; Savickas, 1997)

Students in middle and high school typically complete career assessments that involve a series of checked boxes or a routinized battery of tests, which often tell students what they already likely know about themselves. With today's focus on college and career readiness, it is important to explore what that concept really means. It is not just the ability to take college classes without needing remediation. It requires a deep understanding of self and society and how one may make a meaningful contribution that serves both. Career development is really an exploration of *self* that should encourage students to engage in mindful reflection of their character, talents, gifts, interests, and life experiences and to *use those* to interact with their environment in a way that promotes the welfare of both the individual and society at large. This is a much more complex process than the regular career assessments used in schools; however, it may be a process that can be achieved through the implementation of the ETM.

How the Career Academy Model Is Delivered

While the ETM was not originally designed to teach career development, NVMS staff utilize an adapted form of the model in the 7th grade Career Academy as we rely on 6th grade teachers to provide Type 1

experiences. In addition to organizing a truly amazing Career Day experience for our 6th graders, teachers prompt students throughout the year to consider potential career choices as they read books, learn about different topics, watch television, engage in conversations, and participate extracurricular activities and especially Career Day. In a sense, engagement with the curriculum and extracurricular activities, as well as conversations with meaningful adults and peers, acts as Type 1 experiences.

At the end of 6th grade, the school counselor, 6th grade teachers, and FACS teacher work with students to help them pick a career cluster to study in 7th grade. Predesigned clusters are:

- Architecture & Interior Design
- Business & Finance
- Creative Writing
- Culinary Arts
- Education
- Engineering & Computer Science
- Fashion Design
- Film, Photography & Music
- Forensic Science & Law
- Life Sciences (plant, animal, Earth)
- Medicine
- Psychology
- Sports, Exercise & Nutrition

"I've learned that I know nothing in the field of chemistry and that I need to know a lot more. I think I am going to be a chemist when I grow up. I just need to work a lot harder in everything – get my grades up. I want to figure out how chemicals react to each other."

While most students' choices fall into one of these clusters, students with different interests are accommodated. Examples of other career interests include chemistry, meteorology, sociology, and philosophy.

During the 2012-13 school year, students were scheduled in all of their classes with students of similar interests. Groupings were as follows: Social Sciences, Technology & Engineering, Life Science, Medicine & Forensics, Applied Design, and Human Performance & Nutritional Science.

Once students have chosen a career to study, their Career Academy becomes an individualized experience in which their interests and talents guide choices in the learning material provided. Six key questions guide learning, as suggested by Renzulli & Richards (2000) for middle school students:

1. What do people with an interest in this area (e.g., film making) do?
2. What kind of products do they create and/or what services do they provide?
3. What knowledge, materials, and other resources do they provide?
4. What methods do they use to carry out their work?
5. How, and with whom, do they communicate the results of their work?
6. In what ways can we use the product or service to affect the intended audience?

Students are asked these questions in many different ways as they view the 7th grade curriculum through the lens of their interest and talent. When asked to endorse a candidate in social studies class, future engineers might consider how one candidate's policies on green energy and sustainability could influence the products or services that they might be able to create. Future teachers might wonder about the viability of the profession given budget cuts proposed by another candidate. In science class, the future engineers come to understand that engineers create solar panels in order to combat global warming and the future educators understand their role in promoting a sense of eco-responsibility in students. They may consider who taught them about global warming and how they might share that information with others.

"This has made me learn how to express my creativity and show how I am inspired and how to make presentations. It's increased my confidence a lot. Redesigning a room inspired by a 7th grader – that's pretty big."

As students travel through their courses, the curriculum is continually personalized, and they return to the six questions over and over again. By the end of the year, the students have developed some expertise about the impact of their discipline and are considering how they might tackle big problems that exist in the world.

The Big Project

The culminating experience for our 7th graders is the design and implementation of a big project. The purpose is to contribute a new product, service, or idea to the world. The project must be presented to an authentic audience.

This big project corresponds to the Type III activities described as part of ETM.
The goals of Type III enrichment include:

- providing opportunities for applying interests, knowledge, creative ideas, and task
- commitment to a self-selected problem or area of study
- acquiring advanced level understanding of the knowledge (content) and methodology (process) used in particular disciplines, artistic areas of expression, and interdisciplinary studies
- developing authentic products that are primarily directed toward bringing about a desired impact upon a specified audience
- developing self-directed learning skills in the areas of planning, organization, resource utilization, time management, decision making, and self-evaluation
- developing task commitment, self-confidence, and feelings of creative accomplishment.

It is at this point that the teacher reminds students that *they* are the experts and that the teacher is there as a guide to provide supplies, guidance, and an ear for ideas. The teacher and teacher assistant typically move around the classroom, watching and asking questions, providing advice and guidance when necessary, assuring task-orientation, and sometimes just staying out of the way. The ultimate goal here according to Renzulli is to "replace dependent and passive learning with independence and

engaged learning" and to develop creative productivity in students.
The students design their projects in FACS class. The whole 7th grade team - including technology, art, music, guidance, principal, librarian, PE, and LOTE (languages other than English) teachers - works together to help students accomplish these projects. Sometimes we even have assistance from high school teachers and staff, community members, and parents.

One group of future architects held a series of business meetings, proposed the redesign of the school library, requested money from the Parent-Teacher-Student Association to do the actual redesign, and then spent the year working to carry it out. Three students conducted sociological experiments on the bystander effect, one built a magnificent catapult, and another developed experiment completely independently and could explain to a peer and a high school chemistry teacher what happened and why. Two students built towering cakes that they gave as gifts, three raised money to help an organization that protects endangered animals, many have student-taught in pre-K and kindergarten classrooms, and one assisted the district's occupational therapist with kindergarten screenings. A group of six made a working hovercraft, a group of five designed and implemented an after-school intramural basketball club for 4th and 5th grade students, and five students individually designed and created fashion and had the courage to wear them to school. Other projects also impressed us.

Outcomes

Interesting themes emerged when students were asked to reflect on their 7th grade Career Academy experience. Many were outcomes we had hoped for and expected. Students reflected on their career plans, had a better understanding of specific careers, and were focused on attaining the goals of college and technical school.

"I've also learned how exciting it can be working in groups. I work a lot better in a group of people because I need to collaborate and share ideas. I need to be asked questions so that I can get my ideas out."

Once we made intentional efforts to personalize every project related to the Career Academy experience, students began truly to understand the importance of multidisciplinary thinking. They improved their ability to make meaning of the curriculum and to relate each subject and the knowledge they gained to other classes they were taking. Teachers reported that discipline problems went down during the times that students were engaged in Career Academy work.

These are goals that we expected to attain by implementing the Career Academy model at NVMS. However, the true story lies in a transformative school experience that goes far beyond what we had envisioned. As evidenced by student video journals and written essays, we believe our students gained wisdom as they experienced this model of teaching and learning. More than 100 student journals were analyzed by outside reviewers, including a psychiatric nurse practitioner with a specialization in adolescent psychology, a school counselor, and a high school science teacher who was not part of the Newark Valley district team. Common themes emerging from these journals reflected positive worker traits and characteristics that create a remarkably high level of 21st century skills. Themes included:

- positive feelings from hard work
- falling in love with a discipline/absorption/vision and destiny
- sensitivity to human concerns/insight/empathy
- courage/intellectual and moral conviction
- desire to become more of an expert/do better work
- importance of collaboration/relationships

What We Have Learned

We are thrilled with the outcomes of our model so far. We have also learned some critical lessons about the delivery of the Career Academy and identified areas for improvement.
Here are some suggestions for implementing this model.

- Having a Pep Rally in which students in the same Academy sit together might a good way to start. Perhaps each group can also wear the same color. A sense of community among students specializing in the same discipline helps to create academic camaraderie and teamwork. It also allows students to develop an appreciation of each other's interests. During the rally, staff explains the curricular design and purpose of the model to students.
- Our first major Career Day, at which students wore shirts advertising their Academy, did a lot for team-building. We wished we had done it earlier in the year.
- We suggest a Career Day for 6th grade students to familiarize them with various choices. This year 45 speakers from many career paths offered workshops to 6th and 7th grade students. Afterward, 6th grade students completed assessments and engaged in private consultations with a 6th grade teacher. We believe students will be happier with their Career Academy choices in 7th grade because of this.
- If your school has study halls, intervention classes, or advisory time, it might be good to group students of similar interests together.

"I think that, with my abilities, we could change the way that special education works. You don't just deal with each disability the same way, but you deal with each child – as a person – in a different way."

Although we did group everyone from the same Academy together the first year, we have decided not to always do so. We believe that a multidisciplinary perspective is more helpful for all students. While there are benefits to the teacher in planning lessons when everyone in the room is in the same academy, we do not believe it is in the best interests of the students. All real-world problems require a multidisciplinary approach, and encouraging students to see solutions through the eyes of another discipline may be more beneficial in promoting 21st century skills.

Based on our pilot year, we have made some changes to the curricular delivery of our Career Academy model. While constant reference is being made to viewing all learning through the students' own discipline, major projects and experiences are spaced throughout the year. Part II-Lessons in this document provides some examples. Teacher and student should work together to ensure that curricular experiences are interesting and enjoyable.

We believe the outcome of our work is something that must be shared with other schools. This model is developing social capital by engaging students in rigorous and relevant material through authentic problem-based learning experiences in which they apply their learning to real-world problems that can work to make the world a better place. This is the most meaningful definition of college and career ready.

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A Statement from the Principal

by Todd Schaffer, Principal
Newark Valley Middle School, Newark Valley, New York

Middle school plays a major role in the development of young men and women. It is a time for them to make tremendous strides socially and emotionally while building a solid academic foundation for future success in high school and beyond. During these important and impressionable years, it is crucial to provide a framework for students to connect to school. There are far too many outside influences that can potentially distract students from focusing on academics.

"Schools must take advantage of any opportunities for students that foster their feeling truly connected to the academics and ultimately their future. The Career Academy model developed at Newark Valley Middle School has done just that."

Schools must take advantage of any opportunities for students that foster their feeling truly connected to the academics and ultimately their future. The Career Academy model developed at Newark Valley Middle School has done just that. By focusing on possible careers, students have found meaning in their daily efforts in school, rather than feeling the material is something they have to "get through" in hopes of more exciting and enriching experiences later in their education. As most middle school principals have observed, when students are engaged in and excited about learning, their teachers find it much easier to challenge them and further their skills. The 7th grade teaching staff has worked tirelessly to assist each other in developing a differentiated curriculum that allows students to use their gifts, talents, and interests. By giving students the opportunity to focus their learning through the lens of a career area, they are recognizing each student as unique, with something important to contribute to the group. Teachers and students continue to see the benefits of this approach, and it is exciting to think about the potential for increased achievement and engagement of our students.

With any new initiative, there will always be challenges to overcome and compromises to be made. Introducing new ideas and philosophies to veteran staff can lead to difficult conversations. It is natural for some to cling to ways that have brought success in the past and to question new ideas and practices. As such, the full implementation of this model took five years. However, persistence, passion, and relationship building among staff allowed the team to break through some traditional outlooks and move towards what good teaching and learning can look like. This was no small feat, and it is a testament to the idea behind the Career Academy model as well as to the teachers here.

Opening people's minds was the first step. The bulk of the work in 2012-13 was to show the benefits of the Career Academy model and to prove its sustainability. When teachers began to see the increased engagement and higher level thinking during class, the true momentum began. Middle schools are constantly looking for ways to engage students and have them take a larger role in their education. The Career Academy model has been a big success in this area.

Many schools are feeling overwhelmed by the unprecedented pressures from the State Education Department. New standards, high stakes testing, higher expectations, and shrinking budgets are the new norm. These are also the things that keep administrators up at night and consume much of our time and focus on a daily basis. Programs that can address these issues while inspiring deeper interest in academics will be invaluable as we move forward in this new era. We believe that this model has the potential to instill 21st century skills in students, to help develop college and career readiness, to make deep connections between their interests, talents, and abilities and the Common Core curriculum and, most importantly, to consider how they might make a meaningful contribution to the world.

Middle School Career Academies for College and Career Readiness: A Guide for Interdisciplinary Implementation

Part II - Lessons

Introduction to Career Academy Lessons

The sample lessons that follow are divided into two sections. Section 1 has lessons that would be taught in Family & Consumer Sciences classes. Section 2 has lessons related to other subjects: English Language Arts, General Science, Social Studies, Health Education, and Art Education. Every lesson is appropriate for all students, including students with disabilities, English language learners, and gifted & talented students.

Each lesson includes a rubric for grading. These rubrics are intended to be shared with students early in the lesson so that they know what excellent work looks like.

A blank lesson plan template follows, which show the questions that each segment of the template answers. The Career Academy model lends itself to many types of lessons, and teachers are encouraged to create their own.

The lessons are also available in Microsoft Word by clicking on www.insert site.

Lesson Plan Template

Title:
Subject:

Lesson Length:

Lesson Overview:
Common Core Learning Standard(s) Addressed: •
Subject/Other Standards: •
21st Century Skills: •
Learning Outcomes: (What will students know and be able to do as a result of this lesson?) •
Relevance/Rationale: (Why are the outcomes of this lesson important in the real world? Why are these outcomes essential for future learning?) •
Activities/Tasks: (What learning experiences will students engage in? How will you use these learning experiences or student products as formative assessment opportunities?) •
Formative Assessment Criteria for Success: (How will you and your students know if they have successfully met the outcomes? What specific criteria will be met in a successful product/process? What does success on the outcomes look like?)
Resources/Materials: (What texts, digital resources, and materials will be used in this lesson?) •

Comments:

Dear Fellow Teachers,

When we sat down to write this introduction, we thought we might give you a calendar to help you plot out projects and events. We thought it might offer you and your students the opportunity to wade slowly into what will be a very different way of teaching and learning. Our editor suggested that perhaps it would be less overwhelming if there were some step-by-step directions.

However, in the spirit of the Career Academy model itself, we don't want to tell you how to make this work for you. Instead, we firmly hope and believe that each teacher or team of teachers who choose to implement the model will make it their own. They will use their own gifts, talents, and interests as well as their own needs to design something that works best for them. After consulting with teachers from districts all over New York, with superintendents and with Principals, we know that this model can be adapted to meet the needs of the students and teachers utilizing it and that it works best when the teachers, students, administrators, and community believe in the model and make it their own.

We choose to do a big "kick off" assembly and then our Academy work begins in Art, Health, Family & Consumer Sciences, and Social Studies. When the Social Studies project ends, a career-based Science project begins. When the Science project ends, an ELA one begins, and then we cycle back around to Social Studies. We infuse local, state, and national contest entries throughout and special field trips for students interested in particular careers. Our intervention (or "enrichment") courses often focus on career-based learning. Throughout the year, our students always have their hand in at least one career-based project. Sometimes they are simultaneously working on two or three. Maybe *your* school wants to do career-based projects all the time in every class. Maybe you are just two teachers pairing up to try one unit in this new way. What matters is not so much the order in which you roll it out or which subjects incorporate a career-based orientation to their work. What matters is the pedagogy and the good teaching that make the model work. We strongly recommend that you read all about Renzulli's Enrichment Triad Model (see reference at the end) in order to better understand the eventual goal of this type of teaching and learning: to replace passive and dependent learners with active and engaged ones.

The one thing you must know is this: You can expect your students to feel truly flummoxed for the first month of learning in this new way. We have evidence of our own, as well as anecdotal evidence from other teachers and schools, that a full month of coaching, encouragement, nurturing and "letting go" is required in order for this model to be successful. In our school, we have even developed a name for the phenomenon that usually occurs sometime between the last week of September and mid-October. It happens for each student on a different day, at a different moment. We call it "jumping the fence." It is the moment when students finally believes that their own interpretation of information matters more than the information itself, when they start asking questions and desiring to know more, rather than just repeating what they have read in a book or been told in class. It is the moment when they understand that they will be allowed intellectual freedom, the chance to be creative and innovative in their thinking. It is the moment that they understand that they can change the world around them; that they are powerful, that they are valued, and that they can determine their own destinies.

When students view the curriculum through their own lens (children of this age use their career plans to define their own sense of purpose in the world) they are empowered and they WILL become self-directed learners.

We think the most important message we can give you for your own implementation of this model is *don't give up when you don't see the magic right away.* For the first month or two, you need to slowly do away with your role as "imparter of knowledge" and slip into the role of facilitator/cheerleader/supply finder/advocate. Ask students to tell you what they think about everything. Tell them that providing a summary of someone else's ideas is for "newbies." They have to analyze. They have to question. They should take nothing as fact nor should they assume that all "truths" are unchanging. Tell them to "think like a doctor" and "think like an artist." Call them Nurse Andrew and Architect Alyssa. Remind every student that they have something meaningful to contribute and that that they are developing an expertise that will surpass your own. *Truly believe that every single one of them can make a meaningful contribution.*

It's going to take some convincing…so keep at it. If you can make it through the first month, we are confident that you and your students will be transformed by the experience.

Sincerely,

Jessica Williams, Family & Consumer Sciences
Nikki Morgan, Health Education
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Teresa Fallon, General Science
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Newark Valley Middle School
Newark Valley, New York

Renzulli, Joseph (1976). "The Enrichment Triad Model: A Guide for Developing Defensible Programs for the Gifted and Talented," *Gifted Child Quarterly*, 20, 303-326.

Section I –Family & Consumer Sciences Lessons

As designed, the New York State Career Development and Occupational Studies (CDOS) standards were to be inherent throughout all of the content areas offered in the school system. Consequently, they are foundational to the curriculum for the Newark Valley Middle School academies. The intermediate level standards are presented here.

NYS Career Development & Occupational Studies (CDOS) – Intermediate Standards

The model and all lessons attached to this document meet the Intermediate level CDOS standards.

Standard 1 – Career Development

1. *Students will learn about the changing nature of the workplace, the value of work to society, and the connection of work to the achievement of personal goals.*

Students:

- continue development of a career plan that would assist in the transition from school to eventual entry into a career option of their choosing.
- demonstrate an understanding of the relationship among personal interests, skills, and abilities and career research.
- understand the relationship of personal interests, skills, and abilities to successful employment.
- demonstrate an understanding of the relationship between the changing nature of work and educational requirements.
- understand the relationship of personal choices to future career decisions.

Standard 2 – Integrated Learning

1. *Integrated learning encourages students to use essential academic concepts, facts, and procedures in applications related to life skills and the world of work. This approach allows students to see the usefulness of the concepts that they are being asked to learn and to understand their potential application in the world of work.*

Students:

- apply academic knowledge and skills using an interdisciplinary approach to demonstrate the relevance of how these skills are applied in work-related situations in local, state, national, and international communities.
- solve problems that call for applying academic knowledge and skills.
- use academic knowledge and skills in an occupational context and demonstrate the application of these skills by using a variety of communication techniques (e.g., sign language, pictures, videos, reports, and technology).

Standard 3a - Universal Foundation Skills

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

1. The ability to read, write, listen, and speak as well as perform arithmetical and mathematical functions.

Students:

- listen to and read the ideas of others and analyze what they hear and read; acquire and use information from a variety of sources; and apply a combination of mathematical operations to solve problems in oral or written form.

2. Thinking skills lead to problem solving, experimenting, and focused observation and allow the application of knowledge to new and unfamiliar situations.

Students:

- evaluate facts, solve advanced problems, and make decisions by applying logic and reasoning skills.

3. Personal qualities generally include competence in self-management and the ability to plan, organize, and take independent action.

Students:

- demonstrate an understanding of the relationship between individuals and society and interact with others in a positive manner.

4. Positive interpersonal qualities lead to teamwork and cooperation in large and small groups in family, social, and work situations.

Students:

- demonstrate the ability to work with others, present facts that support arguments, listen to dissenting points of view, and reach a shared decision.

5. Technology is the process and product of human skill and ingenuity in designing and creating things from available resources to satisfy personal and societal needs and wants.

Students:

- select and use appropriate technology to complete a task.

6. Information management focuses on the ability to access and use information obtained from other people, community resources, and computer networks.

Students:

- select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia).

7. Using resources includes the application of financial and human factor and the elements of time and materials to successfully carry out a planned activity.

Students:

- understand the material, human, and financial resources needed to accomplish tasks and activities.

8. Systems skills include the understanding of and ability to work within natural and constructed systems.

Students:

- understand the process of evaluating and modifying systems within an organization.

Introduction to Career Development and Exploration Course
Subject(s): Family & Consumer Sciences

Lesson Length: One Class Period

Lesson Overview: Introduce overall goals and layout of the course including an understanding of the Depth of Knowledge (DOK) Levels (Webb, 2005). Explain how students will move from Level One to Level Four work by the end of the course, which is how all people develop expertise. Explain the basics of the Enrichment Triad Model (ETM) (Renzulli, 1976) and that this course is modeled after that way of teaching/learning.

Common Core Learning Standard(s) Addressed:

- Introduce students to Common Core Standards in math and ELA that will be key elements of assessment during the course.

21st Century Skills:

- Introduce 21st century skills to students as primary goals of the course.

Learning Outcomes:

Students will understand that the primary purposes of the course are to:

- Develop expertise in a particular area of interest
- Create a unique product/idea/service and present it to an authentic audience in their chosen area of interest
- Practice 21st century skills that can be utilized in school, college, and the workplace
- Integrate knowledge and learning from all courses into the understanding of their specific area of interest
- Find a sense of purpose in their education and career goals

Relevance/Rationale:

- The course has the potential to:
  - reduce the dropout rate as students gain an understanding of the connection between their education and their career goals
  - increase creative-productivity in students
  - increase social capital as students are encouraged to consider the positive contributions they can make to society by using their talents in a specific area of interest.

Activities/Tasks:

- Students complete an index card (Ticket Out the Door) with their career choice and what they hope to get out of the class.

Formative Assessment Criteria for Success:

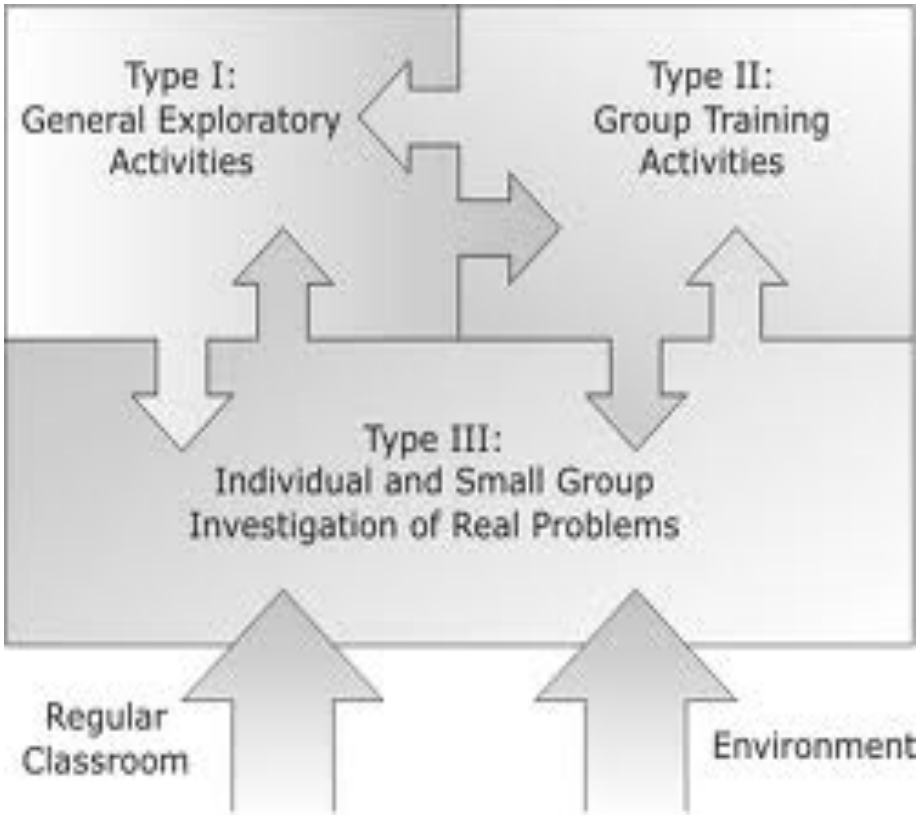
- Ticket Out the Door

Resources/Materials:

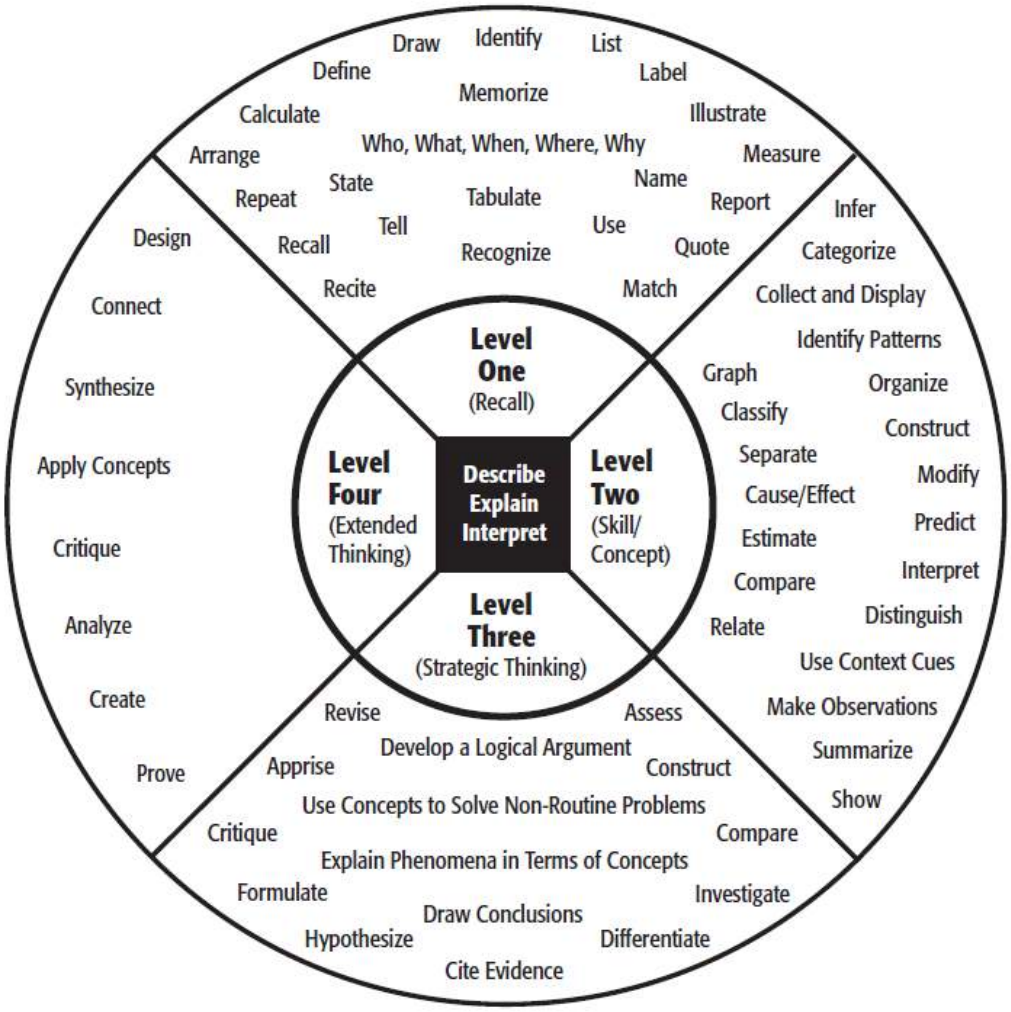
- Copy of the DOK chart
- Schoolwide Enrichment Model graphic (attached)
- Pictures or video of DOK Level Four work (ETM Type III projects) of other students

Comments: Stress that by the time students reach Level Three (DOK) or Type III (ETM), the teacher is no longer the expert but is now the facilitator and the students should be self-directed learners. Explain that you cannot be an expert in everything and that students' knowledge should surpass yours about halfway through the course.

Schoolwide Enrichment Model



Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
Recall elements and details of story structure, such as sequence of events, character, plot and setting.	Identify and summarize the major events in a narrative.	Support ideas with details and examples.	Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.
Conduct basic mathematical calculations.	Use context cues to identify the meaning of unfamiliar words.	Use voice appropriate to the purpose and audience.	Apply mathematical model to illuminate a problem or situation.
Label locations on a map.	Solve routine multiple-step problems.	Identify research questions and design investigations for a scientific problem.	Analyze and synthesize information from multiple sources.
Represent in words or diagrams a scientific concept or relationship.	Describe the cause/effect of a particular event.	Develop a scientific model for a complex situation.	Describe and illustrate how common themes are found across texts from different cultures.
Perform routine procedures like measuring length or using punctuation marks correctly.	Identify patterns in events or behavior.	Determine the author's purpose and describe how it affects the interpretation of a reading selection.	Design a mathematical model to inform and solve a practical or abstract situation.
Describe the features of a place or people.	Formulate a routine problem given data and conditions.	Apply a concept in other contexts.	
	Organize, represent and interpret data.		

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <http://www.wcer.wisc.edu/WAT/index.aspx>

Introductory Letter: What Are You Passionate About?
Subject(s): Family & Consumer Sciences

Lesson Length: Two class periods

Lesson Overview: Introduce the U.S. Department of Labor 16 Career Clusters and ask students to consider which one sounds the most interesting or relevant to them. Have them write a letter to you explaining their choice.

Common Core Learning Standard(s) Addressed:

- CCSS.ELA-Literacy.W.7.4 Produce clear and coherent writing in which the development, organization and style are appropriate to the task, purpose and audience.
- CCSS.ELA-Literacy.L.7.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- CCSS.ELA-Literacy.7.2 Demonstrate command of the standard English capitalization, punctuation, and spelling when writing.
- CCSS.ELA-Literacy.L.7.2a Use a comma to separate coordinate adjectives.
- CCSS.ELA-Literacy.L.7.2b Spell correctly.

FACS Standards for New York State:

- CD 5.2 Identify career clusters and opportunities for the development of transferrable skills.
- CD 5.4 Examine potential career choices to determine knowledge, skills, and attitudes associated with each.

21st Century Skills:

- Communicate clearly through writing.

Learning Outcomes:

- Students will understand the 16 Career Clusters and where their own interests fit within those clusters.
- Students will write an engaging three paragraph letter that includes proper grammar and spelling, sentence flow, and structure. This letter must show evidence of critical and creative thinking.

Relevance/Rationale:

- Deepens understanding of students' individual learning needs/interests, which helps the teacher can differentiate the curriculum.
- Helps students consider college and career planning.
- Sets expectation for rigorous writing throughout the course.

Activities/Tasks:

- Students will write a letter to the teacher explaining their career goals and discipline-specific areas of interest. This letter will be graded.

Formative Assessment Criteria for Success:

- See Letter to the Teacher Rubric (Appendix A at the end of Section I), which evaluates the letter based on format, length, intrigue, and mindfulness.

Resources/Materials:

- Computer with access to Microsoft Word or a similar program OR
- Paper and pen/pencil

Comment: It is important to do this lesson with a lot of energy and enthusiasm. You want the word *passion* to be key. Ask: What issue would you be willing to fight for? What matters the most to you in the world? What problem would you be willing to dedicate your life to solving? Can you make a career of it?
Students who claim they have no idea what they want to be when they grow up can be prompted with questions such as: What are you best at in school? What are your hobbies? What's the most exciting place you've ever been? Starting a conversation about strengths and interest will usually lead students in the direction they need to go in order to start considering what they might like to do for a career. Occasionally, discussing a student's personal struggles can also lead to considering a career that might make life easier for others.

The Language of the Discipline
Subject(s): Family & Consumer Sciences

Lesson Length: Seven class sessions (and at home)

Lesson Overview: Explain that there are words and phrases that are unique to experts in every field. Understanding these words and phrases allows students to develop a beginning understanding of informational, discipline-specific texts. Students will create a piece of digital art using these subject-specialist words.

Common Core Learning Standard(s) Addressed:

- CCSS.ELA-Literacy.L.7.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.
- CCSS.ELA-Literacy.L.4c Consult general and specialized reference materials (e.g. dictionaries, glossaries, thesaurus), both print and digital to find the pronunciation of a word or determine or clarify its precise meaning of its part of speech.
- CCSS.ELA-Literacy.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.

FACS Standards for New York State:

- Process Skills: Management Skills (time)

21st Century Skills:

- Information Literacy: Access and evaluate information, use & manage information
- Information, Communications and Technology Literacy: Apply technology effectively
- Initiative & Self-Direction: Manage goals and time, work independently
- Productivity & Accountability: Manage projects

Learning Outcomes:

- Students will understand the meaning of at least 40 discipline-specific words or phrases.
- Students will be able to connect specific words and phrases to their relevance in their own specific area of interest (An engineer needs to know what torque is because…).

Relevance/Rationale:

- Without an understanding of the language of the discipline, students cannot read or write at a high-level about their chosen area of interest. Language of the discipline project helps students understand basic principles that a subject specialist works.
- When students have a basic understanding of the language of the discipline they move on in the course to non-fiction reading and writing.

Activities/Tasks:

- Students will create a piece of digital art using Wordle, Tagxedo, or a similar word cloud program.

Formative Assessment Criteria for Success:

- Discipline-specific quizzes on language
- Wordle or Tagxedo art (samples of Tagxedo attached)
- Language of the Discipline Word Art Rubric (Appendix B at the end of Section I)

Resources/Materials:

- Computers with Internet access
- Discipline specific text or reference books
- Access to a digital word cloud program
- Language of the Discipline Word Lists (Appendix C at the end of Section I)

Comment: There should be no specified deadline to this component of the course, nor should students be allowed to move on if they have not mastered the language of the discipline. Explain to students that they can get done quickly or take as much time as they want, but they cannot move from Level One (DOK) to Level Two if they are unprepared. Dangling the project-based learning as the motivator will encourage students to work hard and in a timely manner. For students who are really struggling, you can modify the number of expected words or the level of the words you choose to assign.

PARALEGAL
justice
PLESSY
SUE
DNA
RIGHTS
STENOGRAPHER
ALIBI
BURGLARY
MIRANDA
CONVICTION
PARALEGAL
LUMINOL
LAWYER
ARSON
accomplice
miranda

Control
Self
Baby
Autonomy
Play
Harry
Harlow
Planning
Lesson
Shaken
Syndrome
Gifted
ESL
Talk
Time

Discipline-Specific Reading and Writing
Subject(s): Family & Consumer Sciences

Lesson Length: Six class periods (and at home)

Lesson Overview: Students will read three teacher-chosen texts and respond to them. Texts should vary based on students' reading level but always be at a "striving" level rather than at the current reading level, which is consistent with the Enrichment Triad Model (ETM) design. Many students can be assigned adult level reading.

Students write reviews of the articles, including questions they still have, what they want to know next, and if they remain interested in the discipline or think they might like to change career paths. Through this experience, as well as group discussion, students begin to consider the knowledge they are gaining and their own potential contributions to the field. They also begin to analyze how they incorporate new knowledge into their perspective on the future. What ensues is a dialogue between the student and teacher that encourages questioning, self-reflection, and critical thinking.

Common Core Learning Standard(s) Addressed:

- CCSS.ELA-Literacy.W.7.4 Produce clear and coherent writing in which the development, organization and style are appropriate to the task, purpose and audience.
- CCSS.ELA-Literacy.L.7.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- CCSS.ELA-Literacy.7.2 Demonstrate command of the standard English capitalization, punctuation, and spelling when writing.
- CCSS.ELA-Literacy.L.7.2a Use a comma to separate coordinate adjectives.
- CCSS.ELA-Literacy.L.7.2b Spell correctly.
- CCSS.ELA-Literacy.RST.6-8.10 By the end of grade 8, read and comprehend science/technical texts in the grades 8-8 complexity band proficiently and independently.
- CCSS.ELA.Literacy.RI.7.10 By the end of the year, read and comprehend literary nonfiction in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

FACS Standards for New York State:

- Process Skills: Critical and creative thinking in work settings as evidenced through writing

21st Century Skills:

- Communicate effectively through writing.
- Critical Thinking & Problem Solving: Use systems thinking, make judgments and decisions.

Learning Outcomes:

- Students will read and understand several pieces of informational text related to their career interest.
- Students will write article reviews about the nonfiction texts. These reviews will indicate technical understanding, critical reflection, and creative thinking.

Relevance/Rationale:

- Teacher understanding of students' individual learning needs/interests increases, so that the teacher can differentiate curriculum/instruction.
- Students understand key concepts and ideas that are central to their chosen career.
- Students can determine if career-related topics remain of interest or if they misunderstood what their career choice was really about.
- Students understand that writing is used to communicate and express ideas in all career fields and therefore is a critical component of all career paths and all progress within a discipline.

Activities/Tasks:

- Students will write article reviews explaining the texts they were assigned.

Formative Assessment Criteria for Success:

- The teacher will grade each review and write a note back to the student encouraging further mindful reflection of the content and asking the student what he/she wants to know next.
- See Rubric for Informational Article Review (Appendix D at the end of Section I), which scores

the writing based on format, length, technical information, and mindfulness.
Resources/Materials: • A bibliography of appropriate articles and texts is provided in Appendix E – Resources for Discipline-Specific Reading and Writing (at the end of Section I).

Comments: Students should be encouraged to do more research on anything in an assigned article that sparks their interest. They can listen to YouTube videos, search images, etc. to supplement their reading. Students often take advantage of this opportunity to enhance their understanding of text and to investigate further when they are highly engaged with the text. Because students are reading and writing about something they are interested in, expectations should be raised for students to work hard.

Outstanding response:

"Just as I thought technology was almost at its peak, I read the article on a new invention called the 'surveillance hummingbird.' This tiny, compact, man-made, robotic bird is an engineering wonder. This bird can go places humans cannot. For example, it has gone into combat zones, spied on drug lords and hunted for survivors of earthquakes. Although it may not be a native bird to countries it's spying on, other engineers have created camouflage and colors that make it look natural.

"This robotic bird is something important and useful if used in the right way. What if many other people started using them who didn't have people's best interests in mind? Would this device be banned because of its abilities? One thing I really liked (just like in the article before) is that they made this robotic bird to be of assistance to a wide variety of people. If it could be used to help survivors of natural disasters, then this NAV (nano air vehicle) could be very useful. If I was able to create one of these hummingbirds, I might try to put a thermal camera that could sense body heat of survivors or other people that the hummingbird was spying on. If I was creating this NAV I would try to put an infrared camera on so that the NAV could be used at night. It could see better without using a light that might give away its position.

"Overall, I really thought this article was interesting because the hummingbird could be used in so many good ways, but also bad ways if it got into the wrong hands. I also liked how it wasn't going to be for just that government's use but to search for survivors of disasters. Also, since the invention of this NAV, researchers in Japan have made a detailed butterfly which mimics the real thing. When I saw this I thought how the invention of this robotic hummingbird had an influence on other people and that it sparked ideas. This helped me to see that I might be able to do that with the things that I create one day." - 7th grade future engineer

Project-Based Learning: Developing Career Specific Skills
Subject(s): Family & Consumer Sciences

Lesson Length: 10 sessions

Lesson Overview: Students will work in small groups to accomplish teacher assigned projects that develop career-specific skills. Students will apply knowledge gained from Language of the Discipline and Discipline-specific Reading & Writing to the analysis of these projects. These hands-on projects increase students' understanding of the real-world application of the discipline's language, theories, ideas, and skills. All students will keep a journal reflecting on the experience of these projects. These journals, as well as the completed projects, are shared with peers and teacher.

The projects are almost always done in small goal-oriented groups of students with similar interests. The aim is to improving the worker traits mentioned in the New York State standards for FACS, including leadership, teamwork, creative and critical thinking skills, communication skills, and management of time, people, and resources. Students are encouraged to move around the room, watch what others were doing, discuss ideas with students in other career clusters, engage in their thinking processes and brainstorming, and help them negotiate roadblocks. Have students take breaks from their hands-on learning to investigate how their learning and ideas might blend with others' outside their discipline. In this way, each career cluster revolves around a major discipline but also explores interdisciplinary themes.

Common Core Learning Standard(s) Addressed:

For all students:

- CCSS.ELA-Literacy.SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- CCSS.ELA-Literacy.SL.7.1a Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
- CCSS.ELA-Literacy.SL.7.1b Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
- CCSS.ELA-Literacy.SL.7.1c Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
- CCSS.ELA-Literacy.SL.7.1d Acknowledge new information expressed by others and, when warranted, modify their own views.

Architecture & Interior Design:

- CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- CCSS.Math.Content.7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Fashion Design:

- CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Business & Finance:

- CCSS.Math.Content.7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems.

Medicine:

- CCSS.Math.Content.7.SP.C.8c Design and use a simulation to generate frequencies for compound events.
- Next Generation Science Standards (NGSS) also met.

Psychology:

- CCSS.Math.Content.7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

Nutrition/Culinary Arts:

- CCSS.Math.Content.7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Life Science:

- CCSS.Math.Content.7.SP.A.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.
- CCSS.Math.Content.7.SP.C.8c Design and use a simulation to generate frequencies for compound events.
- Next Generation Science Standards (NGSS) also met.

Law/Forensic Science:

- CCSS.Math.Content.7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- National Science standards also met.

Engineering & Technology:

- Next Generation Science Standards (NGSS) met.

FACS Standards for New York State:

For all students:

- C 1.4 Demonstrate verbal and non-verbal behaviors and attitudes that contribute to effective communication.
- C 1.6 Demonstrate effective/active listening and feedback techniques.
- C 1.8 Demonstrate effective communication skills in a group setting to accomplish a task.
- L 1 Demonstrate teamwork and leadership skills in the school and workplace.
- M.8 Demonstrate management of individual and family resources, including food, clothing, shelter, money, time, and personal energy.
- T.1.4 Demonstrate creative and/or critical thinking skills to accomplish a task.
- IR.1 Demonstrate behaviors that promote positive character development and ethical behavior in family, school, work, and community settings.
- IR.9 Demonstrate respectful and caring relationships in family, school, work, and community settings.

Architecture & Interior Design PEM 3.1 Investigate a career in Personal Environment Management

- PEM.2.6 Apply the process skills to implement the effective use of living space.

Fashion Design CM 6.1 Investigate a career in Clothing or Textiles

- CM.1.3 Demonstrate simple, basic hand sewing techniques needed for creating or repairing a textile product by using appropriate tools, equipment, and supplies.
- CM.1.4 Use creative ideas and materials to personalize an individual project.
- CM.4.3 Identify appropriate clothing for individual's roles and activities.

Education F 3.1 Investigate a career in Human Services

- F.1.7 Discuss how environmental conditions can nurture or impede development.
- HD.2.1 Examine the role of nurturance on human growth and development.
- HD.2.3 Demonstrate understanding of procedures required for the care of an infant or young child.
- HD.2.4 Cite experiences which can be provided for the young child to promote/enhance physical, social, emotional, and intellectual growth and development.

- HD.2.5 Apply information about promoting/enhancing child growth and development when observing and interacting with young children.

Business FM 6.1 Investigate a career in Financial Management

- CRM.1.2 Identify and describe the influence media and advertising have on consumer decision making.
- CRM.1.3 Analyze the influence peers have on consumer decisions across the lifespan.
- CRM.1.4 Determine the influence that availability of the resources of time, effort, money, and skills have on consumer decisions.
- CRM.1.5 Evaluate technology's influence on products and services and its impact on consumer decision making.
- CRM.1.6 Identify environmental and social issues that impact the rights of others in the context of consumer decisions.

Medicine HD 13.1 Investigate a career in Human Development

- HD.4.1 Investigate the impact of heredity and environment on human growth and development.
- HD.4.2 Determine the impact of social, economic, and technological forces on individual growth and development.
- HD.4.3 Examine the effects of gender, ethnicity, and culture on individual development.
- HD.4.4 Examine the effects of life events on one or more aspects of an individual's growth and development.

Psychology IR 10.1 Investigate a career in Interpersonal Relationships

- HD.9.1 Recognize that adolescents have problems in common.
- HD.9.2 Recognize the frequency of changes, the relationship to stress, and the need to develop coping skills.
- HD.9.3 Identify the causes of stress, and examine appropriate ways to manage stress.

Culinary Arts, Sports/Exercise NW 6.1 Investigate a career in Nutrition and Wellness

- NW.4 Demonstrate the ability to plan, select, purchase, prepare, serve, and store nutritious and aesthetically pleasing foods for individuals and families across the lifespan.
- NW.5.0 Apply the process skills of management and critical and creative thinking to meal preparation and consumption in a laboratory situation.

Life Science

- PEM.2.4 Explain ways of conserving natural resources in family, school, work, and/or community settings.

Law/Forensic Science

- HD.4.1 Investigate the impact of heredity and environment on human growth and development.
- HD.4.2 Determine the impact of social, economic, and technological forces on individual growth and development.
- HD.4.3 Examine the effects of gender, ethnicity, and culture on individual development.
- HD.4.4 Examine the effects of life events on one or more aspects of an individual's growth and development.

Film/Photography/Music

- HD.7.6 Compare and contrast the influence of family, peers, media, and others on decision making

Engineering & Technology

- PEM.2.4 Explain ways of conserving natural resources in family, school, work, and/or community settings.
- PEM.2.6 Apply the process skills to implement the effective use of living space.

21st Century Skills:

- Communicate effectively through writing.
- Critical Thinking & Problem Solving: Use systems thinking, make judgments and decisions.

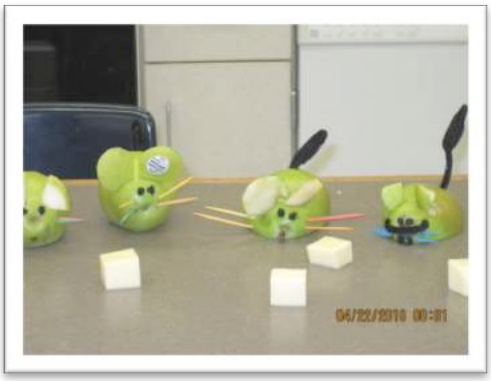
Learning Outcomes:

- Students practice basic skills needed for their career.
- Students will work cooperatively to accomplish a task.

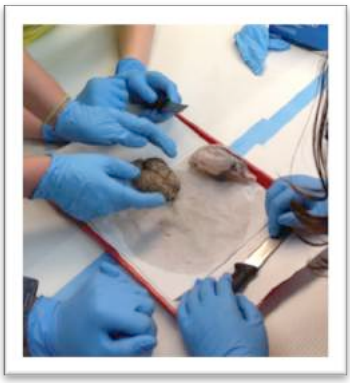
Relevance/Rationale:

• Students are given the opportunity to practice real-world, hands-on skills necessary in their career field. • Students apply knowledge gained about the language of the discipline and discipline-specific reading and writing to work-based skills.
Activities/Tasks: • These will vary based on student interest. See Sample Project Ideas Based on Career Interest (Appendix F at end of Section I) for projects that incorporate the Common Core in math and ELA.
Formative Assessment Criteria for Success: • Projects are peer graded using Small Group Project Rubric (Appendix G at the end of Section I) • Journal entries are teacher graded using Journal Entry Rubric (Appendix H at the end of Section I)
Resources/Materials: • Vary based on project. The sample projects include supply lists.

Comments: Projects can be set up as stations in the classroom. Students should be encouraged to take breaks from their own projects to watch and question each other. At this point, the teacher MUST act as facilitator and students take on the role of experts. This is a critical component of the course. Encourage students to find outside resources when stuck (YouTube videos, library texts, other students and other teachers who might act as resources). There should be no specified deadline to this component and students should not be allowed to move on if they have not mastered the application of a set of skills in their chosen discipline.



Food art pear mice made by future culinary artists.



Future medical professionals dissect a sheep's brain.

Future engineers complete circuit design experiments.

Future forensic scientists extract human DNA.

Making a Contribution

Subject(s): Family & Consumer Sciences

Lesson Length: 5 weeks minimum

Lesson Overview: Students work in groups to create an original product, service, or idea and present it to an authentic audience within their career field. This is a Type III (ETM) and Level Four (DOK) project.

Common Core Learning Standard(s) Addressed:

- Varies depending on the project

FACS Standards for New York State:

- All four process skills: communication, leadership, critical & creative thinking, and management
- Others vary depending on student designed project.

21st Century Skills:

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts

Work Creatively with Others

- Develop, implement and communicate new ideas to others effectively
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real-world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation involve a long-term, cyclical process of small successes and frequent mistakes.

Implement Innovations

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

Reason Effectively

- Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

Use Systems Thinking

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

Make Judgments and Decisions

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

Solve Problems

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

Communicate Clearly

- Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions
- Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade)
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact
- Communicate effectively in diverse environments (including multi-lingual)

Collaborate with Others

- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member

Adapt to Change

- Adapt to varied roles, jobs responsibilities, schedules and contexts
- Work effectively in a climate of ambiguity and changing priorities

Be Flexible

- Incorporate feedback effectively
- Deal positively with praise, setbacks and criticism
- Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments

Manage Goals and Time

- Set goals with tangible and intangible success criteria
- Balance tactical (short-term) and strategic (long-term) goals
- Utilize time and manage workload efficiently

Work Independently

- Monitor, define, prioritize and complete tasks without direct oversight

Be Self-directed Learners

- Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrate initiative to advance skill levels towards a professional level
- Demonstrate commitment to learning as a lifelong process
- Reflect critically on past experiences in order to inform future progress

Interact Effectively with Others

- Know when it is appropriate to listen and when to speak
- Conduct themselves in a respectable, professional manner

Work Effectively in Diverse Teams

- Respect cultural differences and work effectively with people from a range of social and cultural backgrounds
- Respond open-mindedly to different ideas and values
- Leverage social and cultural differences to create new ideas and increase both innovation and quality of work

Manage Projects

- Set and meet goals, even in the face of obstacles and competing pressures
- Prioritize, plan and manage work to achieve the intended result

Produce Results

- Demonstrate additional attributes associated with producing high quality products including the abilities to:
  - Work positively and ethically
  - Manage time and projects effectively
  - Multi-task
  - Participate actively, as well as be reliable and punctual
  - Present oneself professionally and with proper etiquette
  - Collaborate and cooperate effectively with teams
  - Respect and appreciate team diversity
  - Be accountable for results

Guide and Lead Others

- Use interpersonal and problem-solving skills to influence and guide others toward a goal

• Leverage strengths of others to accomplish a common goal • Inspire others to reach their very best via example and selflessness • Demonstrate integrity and ethical behavior in using influence and power • Act responsibly with the interests of the larger community in mind
Learning Outcomes: • Students use their talents and interests to make a meaningful contribution to their discipline. This contribution will be in the form of a product, service, or idea presented to an authentic audience.
Relevance/Rationale: • Students develop a sense of self-efficacy. • Students connect application of classroom learning to his/her career aspirations. • Students work to make the world a better place.
Activities/Tasks: • Students prepare a presentation on their project for an authentic audience in which they explain their idea and how it can make a meaningful contribution to their discipline, community, or the world.
Formative Assessment Criteria for Success: • The idea for the project is graded but the final product is not. Students write a proposal to the teacher (as a group) explaining their final project and why they believe it will make a meaningful contribution to the field. The teacher either does or does not approve the project proposal.
Resources/Materials: • Varies depending on student project. See Examples of Big Projects (Type III) Designed by Students (Appendix I at the end of Section I) for suggestions.

To the teacher: Reference Depth of Knowledge (DOK) Level.

APPENDIX A
Letter to the Teacher Rubric

	0	1	2	3	4
Format	Poor spelling and grammar incomplete sentences. No sense of organization to the writing.	Incomplete sentences, significant grammatical errors. Lacks flow.	Complete sentences, few grammatical errors. Lacks flow.	Complete sentences, correct grammar. Lacks flow.	Complete sentences, correct grammar, logical flow.
Length	1 paragraph with few sentences.	2 paragraphs with very few sentences per paragraph.	3 paragraphs, all less than 5 sentences.	3 paragraphs, some have less than 5 sentences.	3 paragraphs, each has a minimum of 5 sentences.
Mindfulness	Letter lacks reflective thought or in-depth analysis of thoughts or feelings.	Letter shows some careful thought but was clearly rushed or not carefully enough considered.	Letter is thoughtful and reflective but does not share what student already knows, wonders about, or questions.	Letter is thoughtful, reflective, and discusses student's understanding but does not probe or consider new questions.	Letter is thoughtful, reflective, discusses student's understanding, and considers new questions.
Intrigue	Letter is uninteresting. Writer is clearly bored by what he/she is writing.	Letter attempts to engage reader but writer is not thinking at a high enough level (yet) to be interesting.*	Letter is interesting to read but mistakes in other categories (e.g., format, mindfulness) make it very difficult to understand and therefore enjoy.	Letter is interesting to read but mistakes in other categories (format, mindfulness) make it somewhat difficult to understand.	Letter is interesting to read and leaves the reader interested to find out more.

APPENDIX B
Language of the Discipline Word Art Rubric

	0	1 (55%)	2 (70%)	3 (85%)	4 (100%)
Number of Words Included	Fewer than 20	20-39	40-59	60-79	80-100
Creativity	All one color. No shape.	Colorful but no shape.	Colorful with relevant or interesting font. No shape.	Colorful, relevant font, interesting shape.	Colorful, relevant font, shape related to career choice (ex: chef hat)
Use of Time/ Resources	Student misused time, did not research words, was distracted other students.	Student misused some time. Was often distracted.	Student struggled to utilize tools (Internet, books). Was often confused about how to find appropriate definitions.	Student used the Internet to find definitions and used his/her time wisely.	Student used multiple sources to find definitions (experts, text, Internet) and used his/her time wisely.
Sharing with the World	Cloud is not posted.	Final cloud is posted somewhere in the school that FEW students, faculty, and staff will see it. Name is signed onto cloud.	Final cloud is posted where SOME students, faculty, and staff will have a chance to see it. Name is signed onto cloud.	Final cloud is posted where MOST students, faculty, and staff will have a chance to see it. Name is signed onto cloud.	Final cloud is posted where MOST students, faculty, and staff will have a chance to see it. Name is signed onto cloud with quote: I KNOW WHAT THESE WORDS MEAN. ASK ME.

APPENDIX C
Language of the Discipline Word Lists

Lists of 100 words follow for these career areas.

- Architecture & Interior Design
- Astrophysics & Outer Space
- Counseling & Psychology
- Creative Writing
- Culinary Arts & Nutritional Science
- Early Childhood Education
- Engineering & Technology
- Fashion Design
- Film, Photography, Music
- Forensic Science & Law
- Medicine
- Sports & Exercise