

Wallingford Public Schools - HIGH SCHOOL COURSE OUTLINE

Course Title: Animal Technology / Food Science 3	Course Number: 8293
Department: Agricultural Education	Grade(s): 11
Level(s): Academic	Credit(s): 1.5
Course Description Junior course work course continues to build a foundation for students interested in animal technology. Topics studied include: food product development; food safety and quality control; and veterinary clinical skills (animal health assessment and implementation). Students will continue to participate in the Lyman Hall Chapter of the national organization, FFA. Students will continue the development of their portfolio and skills to prepare for future careers in animal technology.	
Required Instructional Materials Sufficient Hands-on Materials	Completion/Revision Date Approved by Board of Education October 15, 2007

Mission Statement of the Curriculum Management Team

The mission of the Career and Technical Education Curriculum Management Team is to ensure that students, as a result of their experiences in K-12, will demonstrate transferable skills, knowledge, and attributes for successful life management, employment, career development, post-secondary educational opportunities, and life long learning.

Enduring Understandings for the Course

- Self-reflection of learning experiences, in and out of school, fosters the development of a life long learner. Life long learners are able to apply and refine skills as they prepare for their post-high school endeavors.
- Food selection is based on sensory input, cost and other influences.
- The “perfect” food product must match all aspects of the consumer’s vision of what that food should look and taste like.
- Food development must follow strict safety guidelines for processing, handling and storage to insure consumer safety.
- Educated consumers should analyze food labels and select food based on nutritional quality.
- Successful preparation for the interview process and the ability to present yourself professionally will set you apart from other applicants.
- Vital signs are an indicator of an animal’s medical condition and can be used to determine the need for medical attention and effectiveness of treatment(s)
- Veterinarians/pet owners make health related decisions based upon internal and external examinations.

LEARNING STRAND

1.0 Transferable Skills

ENDURING UNDERSTANDING(S)

- Self-reflection of learning experiences, in and out of school, fosters the development of a life long learner. Life long learners are able to apply and refine skills as they prepare for their post-high school endeavors.

ESSENTIAL QUESTION(S)

- What is the importance of maintaining a portfolio?
- What are the qualities of an effective oral presentation?
- What safety precautions do I have to follow?
- What can I do differently next time?
- What does a cooperative group require to function successfully?
- How can I assess the situation and implement change?
- What are the characteristics of an organized person? What do I need to do to be more organized?
- How can I manage informational research, organize the information, and present it professionally?
- What is a leader?

LEARNING OBJECTIVES The students will:

- 1.1 Demonstrate public speaking skills using appropriate visuals and tailoring the presentation to specific audiences.
- 1.2 Communicate in writing about a topic using different formats applying relevant vocabulary, supporting evidence and clear logic.
- 1.3 Self-assess transferable skills and reflect on areas of strengths and improvement.
- 1.4 Identify and use the appropriate tools and equipment safely.
- 1.5 Work cooperatively with fellow peers, teachers, and employers to complete a task.
- 1.6 Apply problem solving skills to critically approach a situation and work through the steps to solve the problem.
- 1.7 Develop organizational skills that assist with data collection, data analysis and synthesis.
- 1.8 Apply research skills to collect information, summarize the findings and to cite the sources used.
- 1.9 Recognize leadership skills such as: motivating others, negotiating, participating in meetings, gaining

INSTRUCTIONAL SUPPORT MATERIALS

- See other learning strands for integration

SUGGESTED INSTRUCTIONAL STRATEGIES

- See other learning strands for integration

SUGGESTED ASSESSMENT METHODS

- See other learning strands for integration

<p>confidence, and gaining self-awareness, etc.</p> <ul style="list-style-type: none">1.10 Apply computer-based tools such as PowerPoint, Word, Excel, and Access, to organize and present information.1.11 Demonstrate self expression and creativity through different projects.1.12 Develop a positive attitude and become an independent learner in order to prepare for the future.1.13 Organize and maintain a four year portfolio including a compilation of student products and reflections.1.14 Document SAE (Supervised Agricultural Experience) monthly. This includes recording hours, expenses, income, tasks and applied skills.	
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<u>LEARNING STRAND</u>	
2.0 Food Science <ul style="list-style-type: none"> • Product Development – 4 weeks • Quality Control & Food Safety – 4 weeks 	
<u>ENDURING UNDERSTANDING(S)</u> <ul style="list-style-type: none"> • Food selection is based on sensory input, cost and other influences. • The “perfect” food product must match all aspects of the consumer’s vision of what that food should look and taste like. • Food development must follow strict safety guidelines for processing, handling and storage to insure consumer safety. • Educated consumers should analyze food labels and select food based on nutritional quality. 	<u>ESSENTIAL QUESTION(S)</u> <ul style="list-style-type: none"> • How do people choose a particular food product? • How is a food product designed to appeal to consumers? • How should food be processed, handled and stored safely? • What should consumers know to make informed decisions regarding nutritional and safe food?
<u>LEARNING OBJECTIVES</u> – The students will: <ul style="list-style-type: none"> 2.1 Explain how various influences affect food choices (ethnicity, cost, availability, media coverage). 2.2 Describe sensory characteristics that affect food preferences. 2.3 Assess foods thorough sensory evaluation. 2.4 Detail how nutritional guidelines are formulated and used. 2.5 Analyze a food label. 2.6 Demonstrate how to use food labels to compare food nutrients. 2.7 Select food items for palatability, appearance, and cost. 2.8 Create food item using principles of research and development. 2.9 Design packaging for food product. 2.10 Develop marketing plan for food product. 2.11 Determine the ecology of microorganisms in foods; the detection, isolation, and identification of pathogens and/or their toxins such as <i>E. coli</i> O157:H7, <i>Listeria</i>, <i>Salmonella</i>, and <i>Campylobacter</i>; spoilage and mycotoxigenic fungi; and mycotoxins. 2.12 Evaluate the methods used to isolate important spoilage microorganisms and food-borne pathogens. 	<u>INSTRUCTIONAL SUPPORT MATERIALS</u> <ul style="list-style-type: none"> • <i>Food Science: The Biochemistry of Food and Nutrition</i>, 2002, Mehas & Rogers. • Microbiology In Food Systems Experiments www.ift.org • Experiments in Food Science www.ift.org • Institute of Food Technology website, http://www.ift.org • Penn State Food Entrepreneur Website http://foodsafety.cas.psu.edu/default.html • http://www.foodsafety.gov • Food Product Development http://www.fst.vt.edu/undergraduate/course_syllabi/FST4014.pdf#search=%22food%20product%20development%20pizza%22 • Grocery stores • Food products-raw and prepared • Food labels • Food evaluation forms • Packaging materials • Microbiological testing equipment • Microscopes • Incubators • Non-pathogenic microorganisms <u>SUGGESTED INSTRUCTIONAL STRATEGIES</u> <ul style="list-style-type: none"> • Determine personal food preference baselines

<p>2.13 Assess the role of food microbiologists in ensuring safe food products.</p> <p>2.14 Interpret a HACCP (Hazardous Analysis Critical Control Point) plan for an existing food process.</p> <p>2.15 Develop a “mock” HACCP plan for the designed food product.</p>	<ul style="list-style-type: none">• Analyze consumer assessments of food preferences• Evaluate existing products to determine consumer appeal through sensory data• Use spreadsheet for data compilation of both marketing assessments and product development• Model food development process• Create food product <p><u>SUGGESTED ASSESSMENT METHODS</u></p> <ul style="list-style-type: none">• Portfolio products may include:<ul style="list-style-type: none">• Skill sheet• Research report• Product research and development packet• Photo work sample
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LEARNING STRAND

3.0 School to Career Preparation – Interviewing

- Approximately 4 weeks

ENDURING UNDERSTANDING(S)

- Successful preparation for the interview process and the ability to present yourself professionally will set you apart from other applicants.

ESSENTIAL QUESTION(S)

- Why should I prepare for the interview?
- How can I prepare for an interview?
- What do I need to consider to be successful during the interview?
- What do I need to do after the interview?

LEARNING OBJECTIVES – The students will: **Getting Ready for the Job Interview**

3.1 Write a resume that highlights transferable skills and technical skills related to a specific job and document these skills with artifacts from their portfolio.

3.2 Write a business letter using the correct format which adheres to Standard English conventions.

- Cover letter introducing student to a potential employer
- Thank you letter for interview
- Acceptance or rejection letter for position offered

3.3 Compile a list of three references and contact information.

3.4 Complete a mock job application accurately to emphasize your positive attributes.

3.5 Demonstrate preparation skills related to interviewing. Such as:

- Predict what type of questions will be asked
- Warm-up skills/small talk
- Dress for success/grooming
- How to handle illegal questions
- Company research

3.6 Demonstrate appropriate skills during a mock interview. Such as:

- Non-verbal communication skills
 - Eye contact
 - Positive attitude
 - Hand shake
- Verbal skills
 - Voice, diction, grammar
 - Convincing skills presentation
 - Respond to criticism or

INSTRUCTIONAL SUPPORT MATERIALS

- Videos on writing a resume, cover letters, etc.
- Videos on interviewing
- Sample resumes, cover letters, references
- Assorted job applications

SUGGESTED INSTRUCTIONAL STRATEGIES

- Discuss model resumes and how the different designs highlight different strengths of the applicant
- Discuss the organization and visual presentation of resumes
- Know my skills activity – brainstorm, list and categorize personal skills, technical skills and work experience – then find artifacts in their portfolios to “prove” these skills
- Brainstorm and discuss characteristics of potential references
- Encourage students to contact references prior to using their name on an application
- Role play during practice mock interviews
- Human resource representative from a local company can assist with mock interviews
- Discuss employer expectations for a variety of jobs

SUGGESTED ASSESSMENT METHODS

- Mock interview rubric
- Resume rubric
- Business letter rubric
- Group participation
- Skills checklist
- Portfolio products may include:
 - Resume and cover letter
 - Mock job application and references

<p style="text-align: center;">questions</p> <ul style="list-style-type: none"> • Explaining strengths and weaknesses <ul style="list-style-type: none"> ○ Provide concrete examples ○ Positive spin on weaknesses to improve • Ask appropriate and pertinent questions • Comes prepared with needed materials <ul style="list-style-type: none"> ○ Application ○ Resume ○ References ○ Pen, pad of paper and folder ○ Examples from portfolio • Closing statement and thank you <p>3.7 Evaluate the pros and cons of the position presented to you. Evaluate specifics of the employment such as:</p> <ul style="list-style-type: none"> • Salary • Benefits • Hours • Vacation • Working conditions • Opportunities for advancement • Lifestyle needs <p><u>Note:</u> Employment and other related experiences outside of the classroom can be applied towards the SAE requirements.</p>	<ul style="list-style-type: none"> • Thank you letter to interviewer • Acceptance or rejection letter for position offered • Photo of student dressed for interview
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LEARNING STRAND

4.0 Clinical Skills – Animal Health Assessment and Implementation

- Approximately 8 weeks

ENDURING UNDERSTANDING(S)

- Vital signs are an indicator of an animal's medical condition and can be used to determine the need for medical attention and effectiveness of treatment(s)
- Veterinarians/pet owners make health related decisions based upon internal and external examinations.

ESSENTIAL QUESTION(S)

- How do veterinarians perform physical exams?
- What are characteristics of healthy and unhealthy animals?
- How does an owner select pet food to meet the individual needs of a pet?
- What is included in a comprehensive animal health program? Why?

LEARNING OBJECTIVES – The students will:

- 4.1 Recognize characteristics of healthy animals.
- 4.2 Perform a veterinary physical exam.
- 4.3 Identify internal & external parasites.
- 4.4 Compare and contrast available parasite controls for effectiveness, cost and safety.
- 4.5 Compare and contrast vaccination protocols and determine best course of action.
- 4.6 Compare and contrast dog food nutritional labels.
- 4.7 Analyze companion animal nutritional needs and select appropriate food choice to meet these needs.
- 4.8 Create a comprehensive health program for companion animals.
 - Nutrition and diet requirements
 - Immunization schedules
 - Preventative health care including parasite control
 - Spay/neuter decisions

INSTRUCTIONAL SUPPORT MATERIALS

- Small animals such as dogs, cats, rodents, rabbits and reptiles
- Microscopes, fecal testing equipment
- Assorted dog food samples
- Veterinary equipment
- Preserved specimens - ruminant system and monogastric system

SUGGESTED INSTRUCTIONAL STRATEGIES

- Model how to conduct a veterinary exam utilizing the system checklist
- Test fecal matter under the microscope to identify internal parasites
- Perform skin scrapings to identify parasites
- Analyze vaccination data and discuss different philosophies regarding vaccination protocols
- Discuss different dietary requirements of various animals and various ages
- Model how to interpret nutritional labels
- Explore related careers
- Guest speakers such as vet technicians

SUGGESTED ASSESSMENT METHODS

- Portfolio products may include:
 - Skill sheet
 - Health program for companion animal
 - Business letter to client recommending optimal food plan for companion animal
 - Performance based assessment –perform veterinary physical exam
- Tests and quizzes