

An Analysis of  
Massachusetts Department of Elementary and Secondary Education  
Vocational Technical Education Framework for Culinary Arts  
and its Effectiveness on Students Enrolled in Post-Secondary Culinary Programs

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### Abstract

This field-based action research practicum investigated how students who have completed culinary training programs in Massachusetts public secondary schools perform in post-secondary coursework. The Department of Elementary and Secondary Education has developed the Vocational Technical Education (VTE) Framework for Culinary Arts that outlines concepts and content that a student should know and be able to do. At Le Cordon Bleu College of Culinary Arts (LCB) in Cambridge, Massachusetts, all entering students are enrolled in LCB Foundations. Because a strong association exists between the VTE Framework for Culinary Arts and the objectives for the LCB Foundations course, it was hypothesized that VTE students, who are expected to have acquired a firm foundation of culinary basics, would outperform graduates of traditional academic high school programs. Twenty randomly selected incoming LCB students, divided equally according to high school background, participated in the three phases of the study. Of the twenty students in the sample, ten had completed a VTE culinary arts program, while the remainder had no previous culinary training. Students completed a baseline assessment test, demonstrated knife handling abilities, and attended LCB Foundations. Numeric scores were awarded for each of the three components, and were averaged together to calculate a readiness score for each student. The research methodology involved comparing results for VTE students versus their non-VTE counterparts. The findings indicated that the VTE students performed no better than their non-VTE counterparts. It was recommended that public school administrators emphasize academics for all learners and institute articulation agreements to facilitate the transition of VTE students to college.

## Introduction

The Massachusetts Department of Elementary and Secondary Education (2007) has developed comprehensive curriculum frameworks for all K-12 public school subject content areas, including Hospitality and Tourism. Each framework is composed of strands, a set of learning standards organized around a central career theme. The Vocational Technical Education (VTE) Framework for Culinary Arts prescribes six strands to prepare students for employment within the food service industry:

Strand 1: Safety and Health Knowledge and Skills

Strand 2: Technical Knowledge and Skills

Strand 3: Embedded Academic Knowledge and Skills

Strand 4: Employability Knowledge and Skills

Strand 5: Management and Entrepreneurship Knowledge and Skills

Strand 6: Technological Knowledge and Skills

Each strand outlines concepts and content that a student should know and be able to do. For instance, Strand 1 includes learning standard Strand 1.D, Demonstrate proper sanitation and safety. Each strand consists of a set of individual proficiencies that collectively define required knowledge for the learning standard. As an example, Strand 1.D includes nine units of study, classified as 1.D.01 through 1.D.09.

Recent renewed interest in the culinary field has resulted in significant increases in post-secondary culinary school enrollment. At Le Cordon Bleu College of Culinary Arts (LCB) in Cambridge, Massachusetts, a recognized leader in professional culinary training, all entering students are initially enrolled in LCB Foundations. The syllabus for this course states six

performance objectives that correspond to strands from the VTE Framework, and is shown in Table 1, Correlation Between LCB Foundations Performance Objectives and VTE Framework.

Because a strong association exists between the VTE Framework for Culinary Arts and the objectives for the LCB Foundations course, it was hypothesized that VTE students, who are expected to have acquired a firm foundation of culinary basics, would outperform graduates of traditional academic high school programs. The goal of this research is to examine learning transfer outcomes of the VTE students by evaluating their preparedness for post-secondary education. For the purpose of this study, a student's readiness is measured by collecting data representing results of a baseline assessment test covering VTE Framework material, followed by a demonstration of the student's knife handling competency, supplemented by the LCB Foundations final grade.

Although the Commonwealth of Massachusetts Department of Elementary and Secondary Education identifies high school elective curriculum programs as Vocational Technical Education, the United States Department of Education refers to this segment as Career Technical Education (CTE). The terms are equivalent, and are used here interchangeably. A comprehensive review of CTE literature reveals that authors have published scholarly papers about CTE's historic origins, its enrollment statistics, and its relevance and effectiveness within public education.

Gray (2002) cites his previous 1989 publication to illustrate the foundations of CTE. Prior to 1890, the American high school was not widely attended, and offered only college-preparatory curriculum tailored to children of the elite. When enrollment of working-class parents' children increased at the turn of the twentieth century, the curriculum was differentiated

into academic and vocational concentrations. This decision resolved the dilemma that the classical curriculum was largely irrelevant to the expanding student population, because those students would work, rather than enter college, after high school. Proposals to design CTE to provide an applied context to teach academic skills and all aspects of industry can be traced back to arguments made by John Dewey in the early 1900s.

The current CTE system is the product of an extended period of experimentation and development shaped by philosophical, socioeconomic, and political forces. For the past century, Congress has responded through federal legislation linked in a cooperative venture with state and local education agencies to provide CTE funding and direction. The field has evolved from the three program areas of agriculture, home economics, and trade/industrial apprenticeships to 16 broad career clusters, including Hospitality and Tourism. The Carl D. Perkins Vocational and Technical Education Act of 1998 is the current CTE legislation, and is a Congressional initiative acknowledging the national concern that high school graduates lack the basic skills necessary to succeed in the global marketplace (Sarkees-Wircenski & Scott, 2003).

Bersudskaya and Chen (2011) conclude that CTE is a significant component of high school education. For the last several decades, more than 90 percent of high school graduates have earned at least some CTE credits (Hudson & Laird 2009; Levesque 2003; Levesque et al. 2008; Tuma 1996, as cited in Bersudskaya & Chen, 2011). As demand for a high-skill workforce has increased, reforms have focused on changing high school CTE from an alternative to the collegiate curriculum to an educational pathway for all students connecting high schools, colleges, and the work force (Kazis 2005; Lekes et al. 2007; Silverberg et al. 2004, as cited in Bersudskaya & Chen, 2011).

On average, high school students attend three CTE courses, with this number declining slightly during the 1990s. Although those who concentrate on academic disciplines average only one CTE course, transcript data indicate that CTE course taking is substantial, suggesting that one-fifth of all high school coursework is in CTE (Gray, 2002). Of those students who participate most intensively in CTE programs, 18 percent eventually complete at least a baccalaureate degree (Silverberg, Warner, Fong, & Goodwin, 2004).

According to Cohen and Besharov (2002), vocational students have traditionally been less likely to attend college than students in academic programs, attributed to the fact that non-college-bound students often select vocational education. The typical CTE student completes 12.5 years of schooling, compared with 14 years for students in academic programs (Kulik, 1998, as cited in Cohen & Besharov, 2002). In the opinion of Silverberg et al. (2004), CTE courses may improve future earnings, but have no value-added effect on improving academic achievement or college transitions.

Facilitating the transition from high school to college and the work force is an important focus for high school policymakers and practitioners. Leikes et al. (2007) found that CTE programming does not compromise students' academic competencies, and suggested furthermore that CTE programming delivers additional benefits to prepare students for the transition into college and career. In high school exit interviews, CTE students reported that they felt more prepared for college and career than their non-CTE counterparts, stating that high school had provided them with adequate direction on post-secondary college programs and courses. They were more explicit in their career goals, and more definitive in their plans to effectuate their objectives. When asked about a series of skills, CTE students displayed greater confidence that

they had developed problem-solving, project completion, research, mathematical, college application, work-related, communication, time management, and critical thinking skills during high school.

Ernest Fleury (1997) performed a study for a doctoral dissertation at Johnson & Wales College of Culinary Arts (J & W) comparing the pass rate on a retake of a national certification examination for students who had attended a voluntary review seminar with those who had not participated in the remedial session. The seminar was made available to 39 of 85 test takers who had received a failing grade on their first test attempt. Instructional materials were developed to maximize students' chances of passing the retake exam. The retake exam was administered three days following the seminar, and Fleury analyzed pass rate data using the chi-square test of inferential statistics. His findings indicated that J & W students who completed the review class achieved a statistically higher pass than those who did not.

The principal academic mission of both LCB and J & W is to provide occupational training for aspiring culinary professionals. The profiles of students at both institutions are similar, and many are graduates of CTE programs. Approximately 25 percent of the J & W students were unable to initially pass an exam, but did well when given an opportunity to review test material prior to retaking the test. Because LCB Foundations is essentially a repeat presentation of the VTE Frameworks curriculum, it would appear that the refresher aspect of the introductory course would enable VTE students to reinforce their knowledge, allowing them to succeed at LCB.

Students enroll at LCB because they clearly wish to pursue a career in the hospitality industry. In contrast to Lekes et al. (2007), who believe that CTE students are self-assured that

they possess the proper skill set to successfully transition into post-secondary career education, Silverberg et al. (2004) have disputed whether CTE courses enhance college performance. If, as Cohen and Besharov (2002) contend, CTE students spend 12.5 years in school, expectations are limited for members of this group to achieve their career goals through further education.

### Main Body

Twenty randomly selected incoming LCB students, divided equally according to high school background, participated in the three phases of the study. Of the twenty students in the sample, ten had completed a VTE culinary arts program, while the remainder had no previous culinary training.

Criteria to determine VTE students' preparedness for post-secondary study included both measurable and observable evaluations. Students completed a baseline assessment test, demonstrated knife handling abilities, and attended LCB Foundations, the school's required introductory course. Numeric scores were awarded for each of the three components, and were averaged together to calculate a readiness score for each student. The research methodology involved comparing results for VTE students versus their non-VTE counterparts.

The strands identified in Table 1 were further reviewed to ascertain which units of study could be mapped to LCB Foundation's performance objectives. A determination of the VTE units of study related to LCB Foundations resulted in the development of a baseline student assessment test. The analysis from which the test was created is shown in Table 2, Derivation of Baseline Assessment Test from VTE Framework.

The 25 test questions are based upon material contained in Professional Cooking, College Version (Gisslen, 2011) and the ServSafe® Coursebook (National Restaurant Association



Educational Foundation, 2010), two widely accepted text resources utilized in culinary education programs. The test is organized into three sections, and measures students' familiarity with sanitation (VTE Strand 1), product knowledge and practical skills (VTE Strand 2), and recipe conversions (VTE Strand 3). The student receives four points for each correctly answered question. The two pages of the test appear as Figures 1 and 2, captioned Baseline Student Assessment Test (page 1) and Baseline Student Assessment Test (page 2).

VTE Strand 2.A.10, Demonstrate safe knife skills, stresses the development of the same specific core competencies as LCB Foundation's third performance objective, Demonstrate knife handling skill. It is important for the student to know how to safely and confidently maneuver a knife so that he can create an array of shapes, from a fine dice to a large slice. Each shape is called a cut; for both VTE and LCB, cut specifications are based on standards promulgated by the American Culinary Federation, the nationally recognized authority on education of culinarians at all levels.

Learning how to make consistently sized, neat, and attractive cuts is one of the first goals of any culinary student. Evenly cut items look appealing and cook evenly for optimal flavor, color, and texture. LCB Foundations students practice fundamental classic cube, stick, and decorative cuts for 30 hours, approximately half of total class time, during the six-week curriculum, culminating with a one-hour standard knife skills practical exam, during which chef/instructors interactively analyze and critique students' techniques. All LCB Foundations students take the 75-point exam, and its grading rubric appears as Figure 3, LCBC 110 Knife Skills Final. The student's score on the 75-point scale is converted to its percentage equivalent value.

LCB Foundations, the required initial course for all LCB students, meets daily for six weeks, for a total of 30 two-hour sessions, or 60 hours. Performance objectives are shown in Table 1, Correlation Between LCB Foundations Performance Objectives and VTE Framework. Grading is based on twelve assessments:

- four quizzes measuring objective culinary knowledge
- three hands-on practical examinations providing observation of culinary techniques
- three written reports allowing further investigation into culinary topics
- mid-term and final comprehensive examinations

which are compiled to arrive at a numeric grade based on a 100 point scale.

A summary of all testing activity is shown in Table 3, Baseline Assessment Test Score, Knife Skills Final Grade, and LCB Foundations Grade for All Students. Data collection occurred according to the following schedule:

- The baseline assessment test was administered on the first day of class
- Students completed the knife skills practical during the third week of class
- Grades for LCB Foundations were recorded at the conclusion of the class

For each participating student, the table contains three values representing the individual's performance on each of the three measurement criteria. In addition, the three amounts are averaged together to generate a readiness score for each student.

The rows in the upper portion of Table 3 list individual test results for the ten VTE students and for the ten non-VTE students for the three tests and for the derived readiness score. The rows of the lower portion of the table provide an aggregate compilation of this data for the VTE student and non-VTE student subgroups, as well as for all students in the sample.

The first four data columns display baseline assessment test scores. For each of the three sections of the test that correspond to VTE Framework subject content areas, an average score is presented for the two student subgroups and for all students. These scores are displayed under column headings VTE Strand 1, VTE Strand 2, and VTE Strand 3. Similar composite averages are shown in the Baseline Assessment Test Score column for the overall (i.e., 25 question) test, and are calculated from individual participant scores. Likewise, composite data analysis for the two subgroups and the total population is performed for the Knife Skills Final Grade, the LCB Foundations Grade, and the calculated Readiness Score.

#### Culminating Discussion

Table 3 is structured in a manner supporting the project's purpose, namely, the comparison of the performance of students who have completed high school culinary vocational training with those students who have not done so. The findings indicated that the VTE students performed no better than their non-VTE counterparts.

Overall, VTE students scored 62 percent on the baseline assessment test, compared to 66 percent for the non-VTE students. VTE students scored 70 percent on VTE Strand 1 questions, compared to 82 percent for non-VTE students. VTE students scored 63 percent on VTE Strand 2 questions, compared to 62 percent for non-VTE students. VTE students scored 54 percent on VTE Strand 3 questions, compared to 60 percent for non-VTE students.

All students took the baseline assessment test on the first day of their LCB introductory course to evaluate how much knowledge the VTE students had retained from their public high school culinary education. Their average scores at 62 percent were far lower than expectations, even below the average 66 percent scores for students without previous training.

VTE Strand 1, Safety and Health Knowledge and Skills, covers the principles of food service sanitation, and the five test questions were designed to measure students' understanding of proper cleanliness procedures. It was in this section of the test that the VTE students scored most highly; however, their scores were 12 points below students without previous training.

VTE Strand 2, Technical Knowledge and Skills, reflects the crux of the VTE Framework for Culinary Arts. VTE students were able to answer only 63 percent of the fifteen questions, implying that they arrive at LCB with no advantage over students without previous training, who scored 62 percent.

VTE Strand 3, Academic Knowledge and Skills, measures a student's ability to apply mathematical formulas to execute and convert recipes. Attaining an average score of 57 percent, all students encountered difficulty with these exercises.

Knife skills averages are shown in the Knife Skills Final Grade column, and are calculated from individual participant scores for each of the subgroups and for all students. VTE students scored 78 percent on this assessment, compared to 84 percent for non-VTE students.

It was presumed that VTE students would exhibit a high degree of competency in knife handling, due to the VTE Framework's emphasis on developing knife skills through repetitive practice. Furthermore, because of the test's practical nature, students had the opportunity to demonstrate their tactile abilities in a hands-on and interactive setting, a forum that is preferred by many vocational students. Achieving an average 78 percent score, VTE students attained unremarkable results in this category, as opposed to their counterparts with no previous training, who performed well and averaged an 84 percent score.

The trend established for the Knife Skills Final Grade was repeated for the LCB Foundations Grade, as is evidenced by virtually the same composite average scores for the two student subgroups and for all students. Once again, by achieving an average 78 percent score, VTE students attained unremarkable results in this category, as opposed to their counterparts with no previous training, who performed well and averaged an 85 percent score.

A readiness score was computed for each participant, based on an average of scores obtained for each measurement criteria. Averages are shown in the Readiness Score column, and are calculated from individual participant scores for each of the subgroups and for all students. VTE students scored 73 percent on this assessment, compared to 78 percent for non-VTE students.

The readiness score incorporates previous learning with knowledge acquired during LCB Foundations. When the baseline assessment test data revealed inferior rankings for the VTE student group against students without previous training, it was anticipated that the VTE students would benefit from the remedial nature of the introductory course, due to its strong correlation with the VTE Framework for Culinary Arts. The group realized a modest gain, from a 62 percent baseline assessment test score to a 73 percent readiness score, an 11 percentage point increase. However, students without previous training displayed a slightly greater improvement of 12 percentage points between the baseline assessment test and readiness scores.

LCB considers a student's performance in LCB Foundations as a critically important predictor of his or her academic success in the school's program. After conducting focused research and analyzing readiness scores for VTE students, it is questionable whether the VTE Framework for Culinary Arts adequately prepares students to effectively transition to post-

secondary culinary study. In conclusion, the aforementioned evidence supports the rejection of the hypothesis that students who had completed a VTE culinary arts training program in high school would outperform graduates of traditional academic high school programs.

Getting students ready for work remains central to the mission of VTE's career-focused curriculum. The contrary findings of this work underscore the need to better accommodate those students wishing to pursue post-secondary pre-baccalaureate technical education. Several studies have been conducted that recommend implementing and strengthening two strategies to enhance the delivery of vocational education: integrate academic knowledge and skills more intensively within the curriculum; and establish articulation agreements between high schools and post-secondary training schools.

Gray and Walter (2001, as cited in Gray, 2002) allude to evidence indicating that many of the occupations high school CTE had historically prepared students for now require a post-secondary certificate or degree. They propose that the integrated CTE model combining sequences of occupational and academic courses is most effective and relevant for college-bound CTE students. This approach allows students to develop general occupational competency, become proficient in traditional academic subjects, and make a successful transition from high school to technical college.

Gray (1995) had earlier recognized the growing spectrum of academically unprepared CTE high school graduates who had enrolled in two-year technical schools. He advanced an alternative to traditional CTE programs that featured a re-engineered curriculum emphasizing focused academics taught in a vocational context.

Along with integration, the Carl D. Perkins Vocational and Technical Education Act of

1998 emphasizes the linking of secondary and post-secondary education (Silverberg et al., 2004). Such efforts were expected to have two benefits: to improve the quality of secondary vocational education and to provide students with encouragement and incentive to pursue college and advanced training. In practice, these linkages have included collaborations between secondary and post-secondary faculty, arrangements that enable high school students to earn college credit, and various forms of career development and planning. Articulation agreements allow a student to earn college credit or advanced standing in a post-secondary program for skills acquired in high school. Typically, high school courses are articulated when their content is aligned with comparable community college courses. The process of articulating courses can result in the upgrading and standardization of vocational curricula, because high school vocational educators are encouraged to adopt the course outlines and competencies of community college programs.

Gray (2002) acknowledges the significance of a symbiotic relationship between high school and post-secondary technical education. A strong post-secondary system cannot exist without a viable high school system, because the high school system feeds into the post-secondary system. The challenge facing educators is how the two can be seamlessly combined into a collaborative system.

The present study could be extended by duplicating the test cycle with the same students. Students would retake the baseline assessment test with the desired purpose of progressing from their initial test-taking attempts. With the same intent, the knife skills practical examination would be re-administered, and final grades for their next required course would be recorded.

The study could be expanded to include more participants and/or additional tests. More sophisticated statistical analysis methodologies could then be applied to reinforce the validity of

the data. It would be interesting to redirect the study toward addressing the alarming fact that CTE students complete only 12.5 years of schooling (Cohen & Besharov, 2002). The information gathered could be utilized to produce an effective student retention index.

Individuals are attracted to the culinary profession because of its exciting, even glamorous image; more than a few entertain the dream of becoming the next celebrity chef. Hundreds of culinary schools are creating thousands of culinary workers every year.

As a public high school teacher for two years, I followed the directives specified by the VTE Frameworks, and considered its content to be rigorous and comprehensive. Because I was familiar with the VTE population, I selected this topic to evaluate the preparedness of VTE students for college study, and my research revealed results in contrast to my expectations.

Having taught college-level culinary arts classes for 25 years, I have encountered students with a wide range of personalities and life stories. In my experience, students most likely to succeed are those who are humble, hard-working, and academically competent. I have discovered that students who enroll in post-secondary culinary arts programs without fundamental literacy skills have great difficulty adapting to a college environment. These students cannot complete reading assignments, underestimate the importance of mathematical problem solving, and quickly become frustrated. Not possessing proper study habits limits their capacity to advance within their peer group.

It is strongly advisable that public school administrators emphasize academics for all learners, and institute articulation agreements, as appropriate, to facilitate the transition of VTE students to college. The acquisition of a core of standard academic competencies is an undisputed pre-requisite for success in post-secondary culinary arts education.



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Appendix

Table 1 Correlation Between LCB Foundations Performance Objectives and VTE Framework

Table 2 Derivation of Baseline Assessment Test from VTE Framework

Table 3 Baseline Assessment Test Score, Knife Skills Final Grade, and LCB Foundations

Grade for All Students

Figure 1 Baseline Student Assessment Test (page 1)

Figure 2 Baseline Student Assessment Test (page 2)

Figure 3 LCBC 110 Knife Skills Final

Table 1

*Correlation Between LCB Foundations Performance Objectives and VTE Framework*

LCB Foundations Performance Objective	VTE Strand	VTE Strand Description
Identify and discuss proper use and sanitation of food service equipment	1.D	Demonstrate proper sanitation and safety
	1.E	Identify chemicals and uses in food service
Define key culinary terms	2.A	Apply the fundamentals of Food Service
	2.U	Apply the fundamentals of Garde Manger, hors d'oeuvres, and appetizers
Demonstrate knife handling skill	2.A	Apply the fundamentals of Food Service
Describe basic cooking methods and techniques used in a commercial kitchen	2.I	Describe cooking methods
	2.M	Prepare thickening agents
Discuss preparation of basic stocks, soups, and sauces	2.L	Prepare various marinades, salads, and dressings
	2.N	Prepare stocks and sauces
Describe the structure and use of recipes and recipe conversions	3.B	Mathematics

Table 2

*Derivation of Baseline Assessment Test from VTE Framework*

VTE Strand	VTE Strand Description	Test Questions
1.D.02	Identify microorganisms related to food spoilage and illnesses; describe their requirements and methods for growth	Questions 1 - 5
1.D.04	Conduct a sanitation self-inspection and identify modifications for compliance with standards	
1.D.06	Show exemplary appearance and hygiene	
1.D.07	Describe cross contamination and use of acceptable procedures when preparing and storing potentially hazardous foods	
1.E.01	Describe types of cleaners and sanitizers and their proper use	
2.A.02	Define terminology used in food service	Questions 6 – 20
2.A.07	Explain mise en place	
2.A.08	Read, analyze, and follow a standard recipe	
2.A.10	Demonstrate safe knife skills	
2.I.06	Demonstrate grilling	
2.L.06	Prepare basic and specialty salad dressings	
2.M.01	Identify thickening agents	
2.N.01	Identify types of stock	
2.N.03	Identify types of sauces	
2.U.01	Identify tools and equipment used in garde manger	
3.B.06	Perform recipe yield and cost calculations, and formulate menu pricing based on mathematical data, i.e. utilize appropriate technology	Questions 21 - 25

Table 3

*Baseline Assessment Test Score, Knife Skills Final Grade, and LCB Foundations Grade for All Students*

Students	Baseline Assessment Test Score				Knife Skills Final Grade	LCB Foundations Grade	Readiness Score
	VTE Strand 1	VTE Strand 2	VTE Strand 3	Baseline Assessment Test Score			
1				40%	65%	60%	55%
2				68%	90%	84%	81%
3				76%	80%	90%	82%
4				76%	85%	90%	84%
VTE 5				88%	75%	75%	79%
6				68%	90%	83%	80%
7				60%	85%	90%	78%
8				56%	80%	77%	71%
9				56%	76%	73%	68%
10				36%	51%	62%	50%
11				72%	83%	90%	82%
12				72%	88%	93%	84%
Non-VTE 13				76%	80%	87%	81%
14				52%	60%	47%	53%
15				80%	90%	96%	89%
16				52%	85%	84%	74%
VTE 17				64%	90%	93%	82%
18				40%	85%	80%	68%
19				92%	95%	90%	92%
20				56%	85%	87%	76%
VTE Students	70%	63%	54%	62%	78%	78%	73%
Non-VTE Students	82%	62%	60%	66%	84%	85%	78%
All Students	76%	62%	57%	64%	81%	82%	75%

Notes:

- VTE Strand 1           percentage of correctly answered questions 1 - 5 on Figure 1, Baseline Assessment Test (page 1)
- VTE Strand 2           percentage of correctly answered questions 6 - 20 on Figure 1, Baseline Assessment Test (page 1) and Figure 2, Baseline Assessment Test (page 2)
- VTE Strand 3           percentage of correctly answered questions 21 -25 on Figure 2, Baseline Assessment Test (page 2)
- Baseline Assessment Test Score           percentage of correctly answered questions 1 - 25 on Figure 1, Baseline Assessment Test (page 1) and Figure 2, Baseline Assessment Test (page 2)
- Knife Skills Final Grade           percentage of accuracy and completeness on Figure 3, LCBC110 Knife Skills Final
- LCB Foundations Grade           LCB Foundations numeric final grade
- Readiness Score           equal weighted average of Baseline Assessment Test Score, Knife Skills Grade, and LCB Foundations Grade

Figure 1, *Baseline Assessment Test (page 1)*

<i>Student:</i> _____	
<b>Multiple Choice</b>	
1.	When designing the layout of a foodservice establishment, what is the most important consideration for keeping food safe? A. Where the establishment will be located B. How easy it will be to clean and maintain the facility C. The number of employees that will be required to run the establishment D. The number of customers that will patronize the establishment each night
2.	Your dishwashing machine is not working, and you must use your three-compartment sink to clean and sanitize tableware. What is the first thing you must do? A. Fill the sink with hot water and detergent B. Clean and sanitize the sinks and drain boards C. Prepare the sanitizing solution in the third sink D. Gather clean towels for drying items
3.	Hands should be washed after which activity? A. Touching your hair B. Eating C. Using a tissue D. All of the above
4.	Which practice will NOT prevent cross-contamination? A. Preparing meat separately from ready-to-eat food B. Assigning specific equipment for preparing specific food C. Rinsing cutting boards between preparing raw food and ready-to-eat food D. Using specific storage containers for specific food
5.	Which food item would most likely cause a food borne illness? A. Tomato juice B. Cooked rice C. Whole wheat flour D. Powdered milk
<b>Matching</b>	
___ 6.	Blanch                    A. Whipping a food product to form soft peaks
___ 7.	Emulsion                B. A combination of onions, carrots, and celery
___ 8.	Leavening                C. To cook an item partially and briefly in boiling water
___ 9.	Deglaze                    D. A uniform mixture of two unmixable liquids
___ 10.	Grill                        E. The department of a kitchen where cold foods are prepared
___ 11.	Garde manger            F. The production or incorporation of gases in a baked product to increase volume
___ 12.	Mise en place            G. A constant state of preparedness
___ 13.	Batonnet                 H. To cook on an open grid over a heat source
___ 14.	Julienne                  I. Using a liquid to dissolve cooked food particles
___ 15.	Mirepoix                 J. A matchstick shape approximately 1/4" thick K. A matchstick shape approximately 1/8" thick
<i>Preliminary Student Assessment Questionnaire</i>	
<i>Page 1</i>	

Figure 2, *Baseline Assessment Test (page 2)*

<b>True/False</b>		
16. Chicken stock and fish stock are both cooked the same amount of time.	T	F
17. There are six leading sauces in classical French cuisine.	T	F
18. The bones from young animals are always preferred for making stock.	T	F
19. A roux is prepared by cooking flour and butter.	T	F
20. Ingredients used to make a stock are different from those used to make a broth.	T	F
<b>Multiple Choice</b>		
21. A standardized recipe is one that:		
A. Never changes		
B. Occasionally changes		
C. Produces a known quantity and quality of food		
D. Produces a superior product		
22. 256 ounces = _____ gallons		
A. 2		
B. 32		
C. 128		
D. 8		
23. 16 cups = _____ ounces		
A. 128		
B. 4		
C. 32		
D. 64		
24. 8 pounds = _____ ounces		
A. 32		
B. 128		
C. 64		
D. 16		
25. If 3 pounds of beef are needed to prepare 6 portions of chili, how much beef is needed to prepare 15 portions?		
A. 12½ pounds		
B. 12 pounds		
C. 7½ pounds		
D. 18 pounds		
<i>Preliminary Student Assessment Questionnaire</i>		
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Figure 3, LCBC 110 Knife Skills Final

<b><u>LCBC 110 KNIFE SKILLS FINAL</u></b>	
(Duration: 60)	
	Name: _____
	Class: _____
	Date: _____
<b>Possible points for each cut</b>	
<b><u>POTATO</u></b> (1 ea.)	
ALLUMETTE (1/8" x 1/8" x 2"), 1pc	_____ /15
MEDIUM DICE (dès) (1/2" x 1/2" x 1/2"), 1pc	_____ /15
<b><u>ONION</u></b> ( _ ea.)	
SMALL DICE (dès) (1/4" x 1/4" x 1/4")	_____ /15
15 – Cuts are completed with 90% - 100% accuracy. 12 – Cuts are completed with 80% - 89% accuracy. 7 – Cuts are completed with 70% - 79% accuracy. 5 – Cuts are completed with less than 70% accuracy. 3 – Cuts are incomplete and/or less than 60% accuracy.	
<b><u>TOMATO</u></b> (1 ea.)	
CONCASSÉ; _-CUP (_-inch dice)	_____ /10
10 – Completely peeled, seeded, cored and _-inch dice with firm flesh and smooth surface. 8 – Completely peeled, seeded, cored and diced with firm flesh and smooth surface (no nicks). 6 – Completely peeled, seeded, cored and diced with firm flesh. 4 – Some peel or seed(s) or core remaining, or irregular dice or soft flesh. 2 – 20% of peel or seed(s) or core remaining and irregular dice or soft flesh.	
<b><u>ROOT VEGETABLE</u></b> (1 ea.)	
TOURNE; 2 EA. (_-inch in diameter, 7 equal sides, flat equal ends)	_____ /20
20 – 2 inches long, _-inch diameter, 7 equal sides, flat equal ends. 17 – 2 inches long, _-inch diameter, 7 equal sides. 12 – 2 inches long, _-inch diameter, 7 sides. 8 – +/- 2 inches long or +/- _-inch diameter, or +/- 7 sides. 5 – +/- 2 inches long, and/or +/- _-inch diameter, and/or +/- 7 sides.	
<b>TOTAL POINTS</b>	_____ /75