# Course Outline Assignment

## Course Analysis

**Course Name:** Cooking with Math

**Course Length**: 9 Weeks

**Course Type: Blended / Hybrid (2 face-to-face sessions)**

**Average Student:**

5th grade student - Familiar with technology, (Learned in Technology Course 101); may be a novice, however, understands basic computer skills.

**Content Analysis:**

* Students should be able to add and subtract whole numbers. (Learned in Math 90)
* Students should have basic understanding of fractions. (Learned in Math 90)
* Students should be able to identify the main idea of what they read. (Learned in Reading 101)
* Students should be able to participate in online class discussions about specific questions and share their own ideas and understandings in relation to the discussions. (Learned in Technology 101)
* Students should be able to use basic computer skills. (Learned in Technology 101)

**General Goals:**

* Learn how to read a recipe and follow directions
* Learn common abbreviations and vocabulary associated with recipes
* Learn how to convert like measurement units within a given measurement system.
* Learn to solve problems that involves addition, subtraction, and multiplication of fractions and mixed numbers
* Learn to measure and interpret data
* Learn how to create a recipe

**Enhancing Learning:**

This course will expose students early on to reading recipes and how to use them. In the meantime, it will teach valuable standards concerning fractions, measuring, and problem-solving. By using this course, it will enhance student’s literacy, provide hands-on ways to use math in daily life, and help students develop socially.

**General Course Assessments**

**Multiple Choice Self-Tests and Exam:** These assessments will measure general conceptual information found on the lower levels of Bloom’s Taxonomy. This includes being able to state definitions, key concepts, and other foundational information.

**Recipe Writing Assessment**: This assessment will demonstrate a student’s ability to write their own favorite recipe that consist of ingredients that are measured by using whole numbers, fractions, and mixed numbers and compare it to a real recipe of the same sort. Also, it is intended to help the instructor give feedback concerning student’s knowledge of equivalent fractions.

**Class Cookbook:** This assessment will demonstrate that students can collaborate and understand concepts relevant to the unit materials. The students will create a class cookbook by use of Microsoft PowerPoint.

**Planning a Party:** This PBL project is intended to allow students to reflect on real-life applications. This assessment will demonstrate the student’s knowledge in converting recipes and measuring data. Toward the end of the semester at the second face-to-face session the students will plan a party for thirty. In order to plan the party, they will work in groups to convert three recipes that do not cover for 30 people. Students will also be assessed on creating a recipe in a jar.

**Conduct a survey**: This assessment will demonstrate a student’s ability to conduct a survey with peers and display their knowledge of finding the mean (average).

**Discussion Boards (2 total):** This assessment demonstrates that students have the ability to interact and communicate with peers.

**Course Outline - Objectives**

**Module 1: Introduction to Cooking with Math (Week 1)**

**(What’s in your kitchen?)**

Objectives:

• Determine parts of a recipe.

• Identify abbreviations for measuring

• Define whole number, improper fraction, mixed number, fraction, equations, numerator, and denominator

**Module 2: Safety, in the kitchen?** **(Week 2)**

Objectives:

• Define methods for safe food preparation

• Utilize problem solving skills, measuring techniques to practice various math concepts

• Determine possible methods for estimating a given measure, selecting the proper units.

**Module 3: What’s at the Store? (Week 3)**

Objectives:

• Analyze grocery store advertisements.

• Determine the cost per unit of various products.

• Make a graph using graphing software to compare the price per unit of certain items at various local grocery stores

**Module 4: Are we ready now? (Week 4)**

Objectives:

• Identify a favorite recipe that includes fractions

• Write a recipe

• Identify findings of own written recipe to real recipe of same sort

**Module 5: Mix it up! (Week 5)**

Objectives:

• Determine most appropriate tools for measuring ingredients

• Measure and add different ingredients using the most appropriate tools

• Create fractions that are equivalent

**Module 6: What if? (Week 6)**

Objectives:

• Apply knowledge of fractions (add, subtract, multiply, divide).

• Describe real-life situations in which knowledge of fractions is necessary

• Multiply a fraction by a whole number

• Create a class cookbook

**Module 7: Trouble in the kitchen! (Week 7)**

Objectives:

• Collect data using a survey.

• Apply the mathematical idea of mean (average) to the survey.

• Compare survey findings with peer findings.

**Module 8: Planning a Party (Week 8 – Live session)**

Objectives:

• Apply knowledge of conversions of recipes

• Analyze data and compare with peers

• Create recipe in a jar

**Final Exam (Week 9)**

## Detailed Course Navigation / Outline

**General Information**

* Syllabus
* Course Schedule
* Grading Policy and Evaluation
* University Policies
* University Services (academic and student support) and Technical Support
* Prerequisite Knowledge and Technical Skills Required
* How To Access Course Materials and Technologies

**Instructor Information**

* Biography
* Contact Information
* Response Times and Grading / Feedback Timeframe

**Course Orientation**

* Purpose of the Course
* Navigation Structure
* How to Proceed Through the Course

**Lessons & Materials**

**Module 1: Introduction to Cooking with Math (Week 1- Live Session)**

**(What’s in your kitchen?)**

* Orientation Quiz **(Assessment – LINK TO TESTS)**
* Orientation Discussion Board **(Student Interaction) Introduce yourself to your peers, write 3 or 4 sentences describing an experience you’ve had cooking or watching someone cook.**
* Lecture: How to Read a Recipe [**Chef Logan of Chicago – YouTube video**](https://video.search.yahoo.com/yhs/search?fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg&p=Chef+Logan+of+Chicago+%E2%80%93+youtube+video#id=2&vid=3e691e63a4edc4d6424af782409dba3d&action=click)
* Textbook Reading: **(Ch. 1 *The Math Chef)***
* Module Self-Test **(Multiple-choice)**

**Module 2: Safety, in the kitchen?** **(Week 2)**

Define methods for safe food preparation

• Utilize problem solving skills, measuring techniques to practice various math concepts

• Determine possible methods for estimating a given measure, selecting the proper units.

* Textbook Reading: **(Ch. 2 *The Math Chef)***
* Lecture: [**Food Safety Prep – YouTube video**](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIFkEQRYR3wAj.o0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDMkFSZ1NhbnZURzYycmNTV2d6X2FTQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzQ0BHF1ZXJ5A0Zvb2QgU2FmZXR5IFByZXAgYW5kIGtpdGNoZW4gc2FmZXR5IHlvdXR1YmUgBHRfc3RtcAMxNDc2NjYxNjUwBHZ0ZXN0aWQDbnVsbA--?gprid=2ARgSanvTG62rcSWgz_aSA&pvid=swmmqjk4LjFO30UrWAN37wM0NjQuMQAAAAASaUgr&p=Food+Safety+Prep+and+kitchen+safety+youtube+&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=39&vid=fad96e189d3332afff34d96f1adbacfb&action=view)
* Module Self-Test **(Multiple-choice)**

**Module 3: What’s at the Store? (Week 3)**  **(THIS MODULE WILL BE DEVELOPED FOR THE DEVELOPED MODULE ASSIGNMENT)**

* Textbook Reading: **(Ch. 3 *The Math Chef)***
* Lecture: [**Grocery Store Math - YouTube video**](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIDwFARY5H4AzUY0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDVXZZZm95NURTRUs5ZGJqZThBenB3QQRtdGVzdGlkA251bGwEbl9yc2x0AzU4BG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzM3BHF1ZXJ5A2dyb2Nlcnkgc3RvcmUgYWR2ZXJ0aXNlbWVudHMgYW5kIG1hdGgEdF9zdG1wAzE0NzY2NjI1NjkEdnRlc3RpZANudWxs?gprid=UvYfoy5DSEK9dbje8AzpwA&pvid=N1FTozk4LjFO30UrWAN37wuPNjQuMQAAAABIh5bJ&p=grocery+store+advertisements+and+math&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=92&vid=75d8a6a5ad413feb582afc67dbbeb050&action=view)
	+ grocery store advertisements and cost per units, compare prices
* Discussion Board 2: Decide on a recipe that has at least 5 items. Find the best prices at the store for each item. Decide on a recipe that has at least 5 items. Find the best prices at the store for each item. Discuss and compare with your peers your findings of the prices and which ones are best.
* **(Assessment / Student Interaction)**
	+ responds to two post comparing prices with peers
* Construct graph using graphing software of peer findings: **(Activity)**
	+ Interactive Bar Graph (click [here](http://shodor.org/interactivate/activities/BarGraph/))
* Module Self-Test **(Multiple-choice)**
* **Feedback Surveys (1 total):** These surveys have been placed throughout the course to help the instructor gather feedback on areas that could use improvement.

**Module 4: Are we ready now? (Week 4)**

* Textbook Reading: **(Ch. 4 *The Math Chef)***
* Lecture: [**Baking with Fractions**](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIQmFQRYbh4AYaw0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDYlFwSXNYTWJURWk3QS5OVnNWQ3F5QQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzIxBHF1ZXJ5A2Jha2luZyB3aXRoIGZyYWN0aW9ucwR0X3N0bXADMTQ3NjY2MzMzNAR2dGVzdGlkA251bGw-?gprid=bQpIsXMbTEi7A.NVsVCqyA&pvid=8hHz9zk4LjFO30UrWAN37wKiNjQuMQAAAABLwKfQ&p=baking+with+fractions&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=38&vid=349838cf0f75d01175dee816943a72ae&action=view)**!**
* Recipe Writing **(Assessment)**
* Module Self-Test **(Multiple-choice)**

**Module 5: Mix it up! (Week 5)**

* Textbook Reading: **(Ch. 5 *The Math Chef)***
* Lecture**:** [**Kitchen Math - YouTube video**](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIPBKgRY_hcAFFI0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDbTFXbGdCV1NUTDY3aTRkOWVRdXEwQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzQ2BHF1ZXJ5A2Jha2luZyBhbmQgbWVhc3VyaW5nIHdpdGggZXF1aXZhbGVudCBmcmFjdGlvbnMEdF9zdG1wAzE0NzY2NjgxMjIEdnRlc3RpZANudWxs?gprid=m1WlgBWSTL67i4d9eQuq0A&pvid=_.pA8Dk4LjFO30UrWAN37wEtNjQuMQAAAACVYM43&p=baking+and+measuring+with+equivalent+fractions&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=41&vid=1eb0d62ead8f772887d06e7351b5a2fe&action=view)
	+ **[Measuring- YouTube video](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIPBKgRY_hcAFFI0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDbTFXbGdCV1NUTDY3aTRkOWVRdXEwQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzQ2BHF1ZXJ5A2Jha2luZyBhbmQgbWVhc3VyaW5nIHdpdGggZXF1aXZhbGVudCBmcmFjdGlvbnMEdF9zdG1wAzE0NzY2NjgxMjIEdnRlc3RpZANudWxs?gprid=m1WlgBWSTL67i4d9eQuq0A&pvid=_.pA8Dk4LjFO30UrWAN37wEtNjQuMQAAAACVYM43&p=baking+and+measuring+with+equivalent+fractions&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg" \l "id=51&vid=590c5fd8024f57dc55584709de7be1f8&action=view)**
* Module Self-Test **(Multiple-choice)**

**Module 6: What if? (Week 6)**

* Textbook Reading: **(Ch. 6 *The Math Chef)***
* [**Fractions in Everyday Life – YouTube video**](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIHXKgRYniMAZJE0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDMHdVWks5d0xSdXFQejh0TTRnY19oQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMxBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzI3BHF1ZXJ5A0ZyYWN0aW9ucyBpbiBFdmVyeWRheSBMaWZlIAR0X3N0bXADMTQ3NjY2ODg0OQR2dGVzdGlkA251bGw-?gprid=0wUZK9wLRuqPz8tM4gc_hA&pvid=uHGFBjk4LjFO30UrWAN37wZMNjQuMQAAAACWslrg&p=Fractions+in+Everyday+Life+&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#action=view&id=10&vid=4435e09238cd28aa1ef08136a0ec09e2)
* Create a class cookbook
	+ Small groups
	+ Microsoft PowerPoint **(Assessment)**
	+ Due in Module 8
* Module Self-Test **(Multiple-choice)**

**Module 7: Trouble in the kitchen! (Week 7)**

* Textbook Reading: **(Ch. 7 *The Math Chef)***
* [Lecture: Survey – YouTube Video](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIDWMQRY6x4A7Q40nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDZ1FkOGNqSllTU2VoaWloNllUSXJyQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzI2BHF1ZXJ5A2NvbmR1Y3QgYSBzdXJ2ZXkgNXRoIGdyYWRlBHRfc3RtcAMxNDc2NjY5OTY4BHZ0ZXN0aWQDbnVsbA--?gprid=gQd8cjJYSSehiih6YTIrrA&pvid=.knrWzk4LjFO30UrWAN37weANjQuMQAAAAABei4x&p=conduct+a+survey+5th+grade&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=3&vid=7e482364e844b09fe70ac9229b544530&action=view)
	+ Collect data from classmates of their favorite soup

 and create a survey **(Assessment)**

* Share findings with peers **(Activity)**
* Module Self-Test **(Multiple-choice)**
* Remind students this week about the live session for next week

**Module 8: Planning a Party (Week 8 – Live Session)**

* PBL project **(Assessment)**
	+ [Cookie in a Jar](https://video.search.yahoo.com/yhs/search;_ylt=A2KLqIXeOARYrEAAFKQ0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGJjawM0dG5xNTVkYzA2dHZmJTI2YiUzRDMlMjZzJTNEbGYEZnIDeWhzLWF2Zy1maF9sc29uc3cEZ3ByaWQDZ18wYzlMeFBTMy41RDJqQW53d01PQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMwBG9yaWdpbgN2aWRlby5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzMyBHF1ZXJ5A0hvdyBUbyBDcmVhdGUgYSBjb29raWUgaW4gYSBqYXIgBHRfc3RtcAMxNDc2NjcxNzYyBHZ0ZXN0aWQDbnVsbA--?gprid=g_0c9LxPS3.5D2jAnwwMOA&pvid=azDPszk4LjFO30UrWAN37wpqNjQuMQAAAABsx4pO&p=How+To+Create+a+cookie+in+a+jar+&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-avg-fh_lsonsw&hsimp=yhs-fh_lsonsw&hspart=avg#id=2&vid=cd1468903253e24b37285d2c7c9d39ee&action=view)
	+ At the live session we will be making the cookie in the jar.
* Module Self-Test **(Assessment)**

**Final Exam** **(Week 9)**

**Discussions**

* Discussion Boards
	+ How To Post
	+ Link to Discussions
	+ Netiquette and Posting Standards
	+ Rubric

**Tests & Quizzes**

* Practice – Final Exam
* Final Exam

**Assignments**

* Recipe Writing
* Class Cookbook
* Planning a Party
* Conduct a Survey