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FCS: Whipping up a Dish of Technology

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FCS: Whipping Up a Dish of Technology

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Abstract

The problem that has been chosen is technology in the family and consumer sciences (FCS) classroom. Being such a hands-on class, there is a lack of technology. This is a problem in today's technology-driven society. Technology is all around us every day and can be a useful tool if used consciously and correctly. Technology is being integrated into other subjects, but it seems as if FCS classes are falling behind. With hands-on lessons such as cooking and sewing, there is a need for more technology to be used. Technology skills are useful for all students and finding meaningful ways to incorporate it into FCS classes will grow the students' knowledge. An FCS teacher's job is to teach students to be productive members of society and to make meaningful decisions to improve their quality of life. As technology keeps growing, these are life skills that are important for students to have. This project is a creation of 6 lesson plans for a cooking unit that incorporates technology into the classroom setting.

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Chapter 1

Introduction

Overview

This introduction chapter will be broken down into 5 different sections. To start, a personal narrative will be stated along with how faith has impacted this project. I will describe my background and the major events in my life that have led me to this complete this project. Moving on will be the contextualization of the problem and evidence supporting the problem that I choose to research. From there, this chapter will talk about the purpose of this project. Next, will be an overview of the methodology and steps taken to investigate, collect, organize, analyze and summarize the data. Finally, this chapter will conclude with a definition of terms used throughout this project.

Personal Narrative

I feel blessed to have been raised by two parents who both worked in public education and have shared their love of education with me. They were, and still are, the biggest role models to me. Ever since I was little, I was always in the kitchen. Both of my parents showed me a love for cooking and good food. This love blossomed into a passion and I took that passion to the Culinary Institute of America in Hyde Park, NY where I earned my associate's degree in baking and pastry arts and my bachelor's degree in restaurant management. I worked long days in a bakery after graduation but I had always had a desire to do more. A family and consumer sciences position opened up in my hometown and I knew that was God's calling for me. I loved to cook and bake but teaching was truly my gift from God. This was a job where I could do both.

Upon accepting that position, I received my teaching certification from Messiah University and haven't looked back.

I strive to be the best teacher I can be for my students. That means stepping outside of my comfort zone and trying new things. I grew up during the beginning of the technology boom so I never had my own iPad or computer throughout my schooling like children nowadays have. Being the best teacher for my students means incorporating this technology, and sometimes stepping out of my comfort zone and exploring new aspects of technology, to make sure my students are as successful as possible when they leave my classroom.

My faith has had a big impact on my life. I can hardly remember any Sunday mornings growing up when I wasn't in church. I was raised in a loving, Christian household and while I cannot teach about the love of Jesus Christ in my curriculum, I can show it to my students in other ways. The Bible says to love one another just how Jesus loves us and I show this love to my students through my words and my actions. This follows closely with the problem that I have chosen to research. My love for my students means that I need to do anything I can to make sure they are successful. In today's world, which is so technology driven, that means teaching them the tools and resources and getting them more familiar with the technology that they have in front of them.

Contextualizing the Problem

The problem that has been chosen is technology in the family and consumer sciences (FCS) classroom. Being such a hands-on class, there is a lack of technology. This is a problem in today's technology-driven society. Technology is all around us every day and can be a useful tool if used consciously and correctly. Technology is being integrated into other

subjects, but it seems as if FCS classes are falling behind. With hands-on lessons such as cooking and sewing, there is a need for more technology to be used.

Technology skills are useful for all students and finding meaningful ways to incorporate it into FCS classes will grow the students' knowledge. "Through the use of technology inside and outside the classroom, students can gain 21st-century technical skills necessary for future occupations" (School of Education, 2020, para 13). An FCS teacher's job is to teach students to be productive members of society and to make meaningful decisions to improve their quality of life. As technology keeps growing, these are life skills that are important for students to have.

Purpose of the Project

The purpose of this project is to provide a unit of lesson plans to new, or even veteran teachers, who want to incorporate more technology into their classroom. "Adding technology to an activity or course should have a clear purpose; it should not be added only to say that technology is being used" (Eiland and Todd, 2019, para 4). The technology that is in this project has been added in a meaningful way to support and enhance the learning of the students.

The problem that is to be addressed is the lack of successfully incorporated technology into a family and consumer sciences classroom. "In the career and technical education classrooms of family and consumer science educators, technology education, business education and agriculture classrooms, there needs to be an equal division of active learning and technology-driven computer time that allows the students and teachers to use their devices effectively" (Love, 2018, p. 9). Along with this problem is the absence of technology in daily lesson planning. These problems will be investigated to help improve the quality of FCS classes and teachers' skill sets in utilizing technology in the classroom. Findings from the investigation

will serve in the creation of ‘technology focused lesson plans” to better support student learning in the FCS classroom.

Methodology

There were four main steps taken summarize the information that was found when looking at the problem that was chosen. Those steps are: investigate, collect, organize, and analyze. In regards to investigating the data, I brainstormed multiple different topics but narrowed it down to just a few.

The goal of the research was to find the best and most creative ways to incorporate technology into the classroom. The research concluded that gamification was a great way to make the classroom environment fun while also fostering an environment for learning. With anything good comes the need for support. In order to successfully incorporate technology into curriculum, there is the need of a tech department to fix and problems that might occur. Research also needed to be conducted on the disadvantages. While there are always going to be disadvantages, the need for incorporating technology into FCS classes far exceeded the disadvantages.

To collect the data, I used the internet to find scholarly articles, journals and websites that best supported, and agreed with, the problem that I had decided to research. I then put the articles into a metadata analysis grid to make it easier to organize and collect my thoughts. From there I was easily able to put the information from the grid into my literature review. Once all of my information was there, I elaborated on the main points and used the points I deemed less important to support the data.

Definition of Terms

1:1- Every student in the school has their own electronic device.

Family and Consumer Sciences- A class that focuses on teaching life skills needed to become productive members of society.

Gamification- Incorporating games into other activities or situations to encourage interaction.

Kahoot!- Interactive game when students compete against each other to answer questions quickly and correctly.

Professional Development Days- Days where teachers come in to school (no students) for trainings, team meetings, or lesson planning time.

Engagement- When students are actively paying attention and learning in the classroom.

Technology Support- When there is a technology department at a school to solve problems and fix devices immediately.

Technology Training- Lessons and tutorials taught to teachers to help them better understand and be able to better use the technology devices in their classrooms.

Autonomy- The ability to make informed decisions.

Media Addiction- When students are obsessed with games and have no interest in doing anything else, including home work and school work.

CHAPTER 2

Literature Review

Introduction

As technology becomes increasingly prominent in society, teachers need to find the most updated ways to incorporate it into the classroom. So, how is that done? Through concepts such as gamification, careful implementation of new technology, and keeping up with the latest trends.

While it sounds attainable, teachers need the right support to help them get through. Bentley (2019) said, “Teachers are indeed becoming more proficient in using digital learning tools. However, their plates are full, and though ed tech departments may come and go, having skilled colleagues available to support teachers along the way remains important” (para. 12). Administration needs to approve professional development days or training on how to use the technology. Bently (2019) continued:

“Savvy districts that choose not to assign their ed tech instructional experts to these time-consuming tasks, or those that don’t have ed tech teams at all, are finding other ways to train and support their teachers. Developing and posting online training videos for teachers to use as-needed has proven successful in many districts, and for a wide range of applications.”(para. 10).

Technology can be extremely powerful in the classroom, but does not come without its downfalls. There are disadvantages when incorporating technology in the classroom, such as distracted students, cost to maintain, and addiction to the devices (Green, 2021; Miller, 2019; Walsh & Farren, 2018). If teachers can get past the downfalls, they will be able to lead successful, technology incorporated classrooms.

These two things combined can limit the stress that teachers may have when using the technology.

Technology Games

A new word in the world of teaching is gamification. Graves and Hales (2021) said, "Gamification adds game-like elements to non-gaming environments" (para. 2). From video games to table top and board games, gaming has become something that is enjoyable for everyone. Traditional lecture teaching is not keeping the children of today engaged. "The traditional teacher-centered lecture format is not highly effective with regards to student learning outcomes" (Crumley, n.d., para. 1). With games, students who have a hard time paying attention when someone is talking at them, can be fully immersed in a lesson or review. "Games motivate students toward learning, helping them learn course content while also developing critical relationship skills. Through play, students prepare for careers by engaging in critical thinking and problem solving" (Graves & Hales, 2021, para 20).

Games can be created through multiple platforms. There are websites out there you put in your own questions, choices, and answers and it creates a fun, interactive game. An example of this is Quizizz. Haripriya (2021) says, "Quizizz is a gamified student engagement platform that offers multiple features to make a classroom fun, interactive and engaging. As a teacher, you can conduct formative assessments, assign homework, and have other interactions with your students (for all grades) in a captivating way" (para. 1).

For teachers that are interested in bringing their own gamification ideas to life, power point can be used to create games as well. Harwood (n.d.) gives her opinion on PowerPoint games saying "They provide an opportunity to model an activity or a game (especially with large classes), they can be fun to play, they are easy to create or edit and they don't require an internet

connection. Great for station rotations and partner work as well! Can be used on ANY device!" (para 1).

In order for a student to truly learn the course content they need to be engaged in the lesson. "Engagement is improved through gamification mechanisms such as points, leaderboards, trophies, and badges" (Chang & Wei, 2016, p. 3). For students that are competitive, they want to do well to win. For students that are high achievers, they want to keep up their success by winning. Gamification, when executed correctly, can benefit all students. "Additionally, gamification allows students to receive immediate feedback as they earn points and other rewards while playing the game" (Chang & Wei, 2016, p.3). This means that students are able to correct mistakes they make immediately and they do not have to wait for an assignment to be graded to know what they need to improve upon. Games give options to retake assignments and provide remediation opportunities for specific concepts.

Game Player Types

Just like with learning styles (visual, aural, verbal, physical, logical, social, and solitary), there are also 7 styles of game player types.

- **the *Seeker* enjoys discovery and exploration,**
- **the *Survivor* enjoys escaping and feeling fear,**
- **the *Daredevil* enjoys taking risks and playing on the edge,**
- **the *Mastermind* enjoys solving puzzles and devising strategies,**
- **the *Conqueror enjoys* defeating difficult opponents,**
- **the *Socializer* enjoys interacting with other players,**
- **the *Achiever* enjoys completing tasks.**

"Players generally have favorite game types, and they feel engaged with some game mechanics but not all" (Monterrat, 2017, p. 628). Much like the ways in which teachers differentiate assignments, it is also necessary to differentiate games to hit as many gaming styles as possible.

Diving deeper into gamification, is the mechanics of it. There are four levels of game mechanics that can be linked to gamification.

> "Vassileva (2012) conducted a review of the literature on game mechanics, collecting patterns, rules and feedback loops that can be applied to develop game-like elements in virtual applications. They give examples of such patterns: ownership (such as points, tokens, badges), achievements (a virtual or physical representation of having accomplished something), status (displaying a rank or level of a user), community collaboration and quests (challenges related to time-limit or competition). (Monterrat, 2017, p. 627)

One game that displays all four of these mechanics is Kahoot!

Kahoot!

"Kahoot! is a game-based student response system (GSRS) where the classroom is temporarily transformed into a game show where the teacher is the game show host, and the students are the contenders" (Wang, 2015, p.2). The way that Kahoot! displays all four game mechanics is by giving students points for answering questions correctly (ownership), putting students' names on a winner's podium (achievements), adding students names to a leaderboard in real time to see where they stand against other classmates (status), and giving students a time-limit to answer the questions along with competing against their classmates (community collaboration and quests).

Kahoot! can be used in a variety of different ways in the classroom to engage students in learning. Kelsner Science (n.d) reported four ways to use Kahoot! in the classroom; Check for understanding, review for assessments, team up, and have students create their own. “Kahoot! was the first SRS designed to provide a game experience using game design principles from theory on intrinsic motivation” (Wang & Tahir, 2020, p. 2). When you are intrinsically motivated you do an activity because you like it and have fun with it, not because of an external reward.

While Kahoot! can be an aid to students’ learning, it also, like anything, has some negative qualities.

> Another odd concept that is specific to the “Kahoot!” games is that in order to win more points, one must answer the question the fastest, or faster than their competitors. This component of the game teaches that speed is more important over legitimate knowledge of course material and comprehension of the question. (Seccuro, 2018, para. 3).

Students want to win the game and beat their classmates and in order to do so, they have to answer the questions quickly. This means that sometimes students are not reading through all the answers and clicking the one that sounds correct or looks correct because they can press it faster. What makes for effective learning is comprehension, which students may struggle with if they are worried about speed.

Overall, Kahoot! can be a productive and engaging learning game that is intrinsically motiving for students. Not only are they having fun playing the game, but they are learning from it. While it does have its “cons,” there are a lot of positives that come with playing the game of Kahoot!

Digital Learning Tools: Technology at its Best

Incorporating technology into an FCS classroom is something that can be a challenge. Since FCS is not a core subject, it seems like it can fall through the cracks. There are a lot of resources out there for other subjects, but what about for an FCS class? Where can FCS teachers start to look for technology to incorporate into their classrooms? One great benefit of living with the technology that is used today is teachers can contact other professionals all over the world to discuss changes in their field, get lesson plan ideas and receive advice" (Keane, 2002, p. 41)

Tolle and Harris (2014) noted teachers may still be stuck in their old ways when using technology. "Although a variety of technological devices and multimedia applications are available for educational delivery, most educators rely on laptops and projectors, using power point for presentations" (Tolle & Harris, 2014, p. 8). Unfortunately, presentations have little interaction and lack game-like elements; because of these factors, students lose interest quickly. While no one is suggesting the elimination of this option from teaching, a class needs a good balance of games and presentations.

A substitute for PowerPoint in regards to presentations is Pear Deck. Pear Deck makes presentations interactive. Students are able to answer questions on their devices and give their own input and thoughts as the teacher is presenting. This holds the students accountable for paying attention during the lesson because they participate in another way other than just taking notes. Smith (2019) points out that "when students respond, their answers can be shared anonymously by the teacher so only he knows who submitted which answer. This allows all students to feel safe in answering as they know they can't be singled out by a classmate for a wrong answer" (para. 3).

The U.S Department of Education (n.d.) also has a say in incorporating technology into the classroom setting.

> Used to support both teaching and learning, technology infuses classrooms with digital learning tools, such as computers and hand held devices; expands course offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; builds 21st century skills; increases student engagement and motivation; and accelerates learning. (para 1)

Students are able to go home from school and complete their school work without missing a beat from what was accomplished in the classroom. They are learning and exploring the technology that they are using and are able to gain problem solving skills learning how to use the technology.

Many schools are trying to move to a 1:1 initiative. Instead of having a computer lab or a classroom set of devices, every student gets their own electronic device, whether that be a laptop or a tablet, and can take it home with them to continue their education outside of school. "When schools have a 1:1 initiative (one device for every student), students benefit because technology can be more smoothly integrated into the curriculum" (GCU, 2020, para 4).

There are many platforms out there for schools to use to integrate technology. One of these is Canvas. Teachers can post assignments and activities that students can complete and submit all in one place. It is an easy and convenient way for teachers and students to have access to assignments all in one place. Davis (2021) mentions that "Canvas is an excellent learning management system. It is user-friendly. It helps you organize your courses. It offers a wide variety of types of assignments, such as information pages, discussions, assignments, assessments, and projects" (para. 2).

YouTube is also a great tool for students to learn or preview concepts. There are endless tutorial and demonstration videos out there for students to watch. During class time, teachers can assign a YouTube video for students to watch to supplement instruction. This way students can work at their own pace and teachers can provide extra help to the students who need it. “This video hosting site gives teachers the opportunity to take students around the world, listen to experts on a topic, or hear an explanation for a new idea. One of the reasons why people of all ages are using YouTube is because it's a powerful tool for teaching and learning” (Burns, 2016, para. 2).

Included in the incorporation of technology is teaching about modern day technology to students.

> The state of Pennsylvania has also adopted technology standards taught through FCS that must be accomplished by grade 12… For instance, by grade 12, students must “assess the availability of emerging technology that is designed to do the work of the family and evaluate the impact of its use on individuals, families and communities” (Keane, 2002, p. 42).

Keane (2002) also mentioned students should also be learning about online purchases and security concerns.

Technology Support: The Imperative Necessity

When adding technology into a classroom setting, support is needed to provide assistance with problems that go beyond what an average teacher can resolve. Without a supportive technology department, stressors can be added to the classroom setting. “Problems like server issues and connectivity problems take a huge amount of time to get fixed, hence it

disturbs the normal flow of teaching and causes frustration for both the teacher and the student" (Greene, 2021, para. 8). The huge amount of time it would take for these things to get fixed could be a quick fix with a knowledgeable and supportive technology department.

Technology Training

Along with a knowledgeable technology department, teachers need proper training on how to use technology in the classroom. Without the proper training, teachers will have to fend for their own. By doing this they will get frustrated and discouraged. According to Goteka (2020), "To fully take advantage of the capabilities of software and tools available, the right training is essential" (para. 5).

According to Hyndman (2018), there are four challenges that teachers experience with using technology in the classroom. "Appropriate access to technical support (classroom, informally), availability of infrastructure (computer labs, software), policies (whether to administer digital homework) and time allocated to incorporate new technologies are major challenges for teachers" (Hyndman, 2018, para 25). With training and a good technology department, these frustrations and challenges can be resolved easily.

Disadvantages and Technology

While pointing out the advantages of technology can seem like technology is the best thing for a classroom, noting the disadvantages is necessary for successful incorporation of technology in the classroom. When teachers acknowledge what could go wrong, they can anticipate and stop any problems before they occur.

The challenges of maintenance.

Technology can be extremely useful in the classroom, but that does not come without disadvantages and negative aspects. The first disadvantage to point out is in regard to money.

Technology can be expensive which limits some schools to be able to use it to its full potential. “The maintenance requires a huge amount of money and the update of the outdated software also takes a fair amount of money” (Greene, 2021, para. 5). For students to get the most out of their technology, it cannot be outdated. However, it is expensive to obtain and replace current technologies. Wealthier school districts have an advantage over low income schools.

Distraction in the Classroom.

The next disadvantage, which any teacher that uses technology in the classroom has trouble with, is the distraction that technology causes. “Because of its many features, the iPad can foster possible distraction for students” (Walsh & Farren, 2018 p.154). Internet videos, non-approved games, and social media can be a huge distraction in the classroom. Students often rush through their work and then have free time to do un-authorized things on their technology devices. “So the devices which are provided to the students for studying are instead used to be active on social media” (Greene, 2021, para. 12). This can cause an issue for teachers who are trying to get their students to complete quality work and who can’t monitor every student at one time.

The Thief of Creativity and Autonomy.

The next disadvantage comes from the curriculum that is being taught. “It was found that technology-rich high school classes lacked the following in their curriculum: open-ended problem solving, real-world clients, group work, student autonomy, and the chance for students to be creative” (Hirose, 2009, p. 6.). Students are so immersed in the technology that they could be missing the collaboration and real-world human interactions. While technology is the way of the future, students still need to learn important life skills that are not related to technology such and penmanship and communication.

Safety compromised.

Along with the previous disadvantages, technology being misused can also cause a safety issue. “Technology can be used in a negative way. For example, computer hacking, viruses, and social media addictions are all forms of misuse in the technology world” (Keller, 2018, p.22). When students are chatting through their technology during class or trying to get around the blocked websites that the school district does not approve of, trouble can ensue. On the other side of this, computer hackers can get personal and private information from technology and then compromise the entire system. Technology can be powerful in the right hands but dangerous if it gets into the wrong hands. School districts need to watch out for phishing or scams being sent through emails, which can be easy to mistake as something innocent and legit.

Media addiction at its worst.

The final disadvantages to point out comes from an article from Keith Miller (n.d). “When kids play video games, they can find themselves reacting with addiction-like behaviors” (Miller, n.d., para. 22). This goes along with the point about students rushing through their work to get done so they can play non-school approved games or watch videos on the internet. They become so addicted to video games and internet videos that they feel they need to always be on them, even during inappropriate times, such as during the school day.

Miller’s second point talks about hiding behind a screen and lacking face to face contact with others.

> Being behind a screen provides you with a layer of anonymity that you don’t receive with a face-to-face conversation. Learning how to work with one another using

> technology is an essential skill, but it cannot be the [only] option that teachers introduce to their classroom. (Miller, n.d., para. 25).

To go along with the point of anonymity is cyberbullying. Students are able to hide behind their screen and say mean and hurtful things to others. They are able to find ways to message each other not only at home, but during the school day.

Conclusion

Technology in the classroom can be extremely positive. Through gamification, teachers are able to add games into their teaching to make their curriculum more engaging for the students in their classes. In order to successfully incorporate technology, teachers need a strong support system from a technology department to help not only them, but the students as well, when something goes wrong or stops working with the technology. Teachers also need the proper training on how to use the technology. Technology is changing every day and sometimes seems like it is difficult to keep up. If school districts want teachers to implement lessons with technology incorporated, they need to provide the support.

While the positives can outweigh the negatives, we cannot forget that disadvantages with technology do exist. Teachers need to be actively monitoring their students and also teaching content that does not involve the technology. They need to monitor students to make sure that they are on task, completing the work they are giving, and not straying off to go on sites that they do not have permission to be on. If teachers are able to monitor and work around the disadvantages, they can successfully implement it in the classroom.

Chapter 3

Methodology

In a technology driven society where school districts are moving (if not already have moved) to give each student their own device, teachers need to harness the power that is in their hands and guide their students through the ins and outs of technology. One particular secondary education subject that is so hands-on, yet struggling to find space for technology, is the Family and Consumer Science classroom. This is the problem that was found, namely that Family and Consumer Sciences (FCS) classrooms need to find ways to use technology more. Because the class is so hands on, the use of technology in the classrooms seems to not be incorporated as much as it should be in the technology-forward world that has evolved. The purpose of this study is to find the best and most meaningful ways to incorporate technology into the FCS classroom while not missing out on the valuable life experiences being taught.

This chapter will begin with the investigation process for the literature review. It will then move on to describe how and what data was collected during the review. From there this chapter moves on to discuss how the literature review is organized and then the analysis of the data. Finally, a summary concludes this chapter.

Investigation

When choosing exactly what needed to be investigated for the literature review, many different ideas were written down and then narrowed into what was believed to be the most relevant ideas to the problem of the lack of technology in the FCS classroom. The topics that were chosen to be of most importance were games/gamification, Kahoot!, FCS technology, technology department/support, and advantages/disadvantages of technology.

Games and incorporating gamification were chosen to be a topic because they allow students to learn and review material while having fun. There are so many different types of games for students to play and it is something different than a traditional lecture lesson. One of these games is Kahoot!. Kahoot! has become increasingly popular throughout the past few years. It can be used as a great review tool while creating some friendly competition amongst players. Students have fun trying to pick the correct answer while also getting the answer in the fastest.

Moving from games, the focus on specific technology that relates to the FCS classroom was something that was necessary to aid in the main point of the project. Teachers can connect through Facebook and other internet sites to obtain the opinion of others that they wouldn't necessarily be able to talk to without technology. Many teachers, especially in this technology lacking classroom, may think of technology as being projectors and power point presentations, but the technology resources go far beyond that ideology.

With any school, there needs to be a support system to make things run smoothly. In this case, it was chosen to point out how the support from a technology department can make or break the incorporation of technology in a classroom. Without proper support, teachers are left to fend for themselves and navigate something that they may not be familiar with. With a helpful technology department, professionals can fix problems or issues and may even be able to stop them from happening.

Finally, are the advantages/disadvantages of technology. This was chosen as a topic to investigate because anything that can be used for good can also be used in a negative way. From causing more distractions for the students, to the maintenance required to keep technology working at its full potential. There is no hiding that when used improperly, technology can be more of a nuisance than a helpful learning tool. This project takes those disadvantages

in stride, but focuses on the positive aspects of incorporating technology into the classroom setting.

Collection

The data collection came solely from articles and resources found on the internet. The online library at Messiah University was used along with scholarly articles that were found by using Google. Supplementing these journals were also articles that came up on the internet in relation to technology in the FCS classroom. Many websites and articles were considered when collecting the information, but the metadata analysis grid helped to narrow down exactly what were the most relevant articles, journals, and websites to the project.

When writing the lesson plan chapter of this project, some other technology was put into play which then sparked a curiosity of research for these technology tools. This information was collected after the initial draft of the literature review and contributes to the study as a secondary part of the project.

Organization

All of the information that was collected was organized in a metadata analysis grid. There were six different columns. The fist column on the farthest left was the literature studies. In that column were the different authors or articles each in their own box. In the next columns over were the different criteria for the review. The criteria were broken up in to five major aspects of this project: games/gamification, Kahoot!, FCS technology, technology departments/support, and technology advantages/disadvantages.

By organizing all of the information in a metadata analysis grid it put all of the information in an easily accessible organizer. From there the research was able to be easily transferred into the literature review and separated into the different categories. The

literature review is divided into different sections that each have a specific relation to technology in the FCS classroom.

Analysis

After organizing the data and information in the metadata analysis grid, the information was then looked over and the most important points were picked out and elaborated on. The other parts that were deemed less important were used as support to the main ideas. When the analysis was taking place, these main points were written down in a document of the literature review and then pieced together with the supporting ideas to form the rough draft. After further analysis and more ideas being added throughout, the final draft was completed.

From analyzing the information that was found, I was able to find similar themes and patterns in the views of people supporting an idea. This is how the main points were chosen. When multiple people talked about the same concept, a main point was found. The metadata analysis grid made finding these overlapping ideas possible in an organized manor.

Summarization

From the research that was conducted, it was found that there are many creative ways to incorporate technology into the FCS classroom. Through gamification concepts such as resources like Kahoot!, the classroom can become a very interactive and technologically focused place. Along with these ideas is the need for support when using the technology. Teachers are not able to fix technology on top of everything else on their plates. That is where a technology department comes in and are deeply appreciated by building staff, faculty and administration. After looking at the advantages of technology, the decision was also made to make sure that both sides were well represented; meaning conducting research about the disadvantages. There are disadvantages that come with technology, some more obvious than

others and some more preventable than others. In the end, the advantages and rewards of incorporating technology in the FCS classroom outweighed the disadvantages.

Chapter 4

Discussion

Technology is one of the fastest growing pieces of today's society. As schools are giving each student their own device, teachers need to make sure that they are methodically incorporating these into daily lessons. The purpose of this project is to find technology resources that can be incorporated into lessons to keep students actively engaged while also teaching them the technology skills that they may need in their future. Family and Consumer Sciences is not a popular core subject so sometimes it can get overlooked. There is a lot of research out there on incorporating technology into a classroom setting so this project took that research and applied it to FCS classrooms.

This chapter will begin with a discussion on the implications to theory. This section will focus on gamification and support from technology departments. Next will come the implications to practice. This section highlights the lesson plans that were written for this project and their use in the classroom. After that this chapter will talk about the implications of future research and how teachers can take the ideas in these lesson plans and expound on them in the future. Finally, to end this chapter is the epilogue and closing thoughts on the research.

Implications to Theory

The most prominent part of this project was to give other family and consumer sciences teachers a unit of lesson plans that incorporate technology into the classroom. After researching many different ways of keeping students engaged in the classroom, the notion of gamification was found to be an excellent addition to any lesson. Kahoot! is a very popular choice for including games into the classroom. Though some data argues that technology is not always beneficial, the notion among some educators is that it can be used as a positive tool

for review and gives students a competition activity to keep them motivated to participate. It is conclusive that while competitiveness in the classroom has been argued to hinder some from learning, the notion gathered from this study is that other students have fun trying to answer questions quickly and correctly so as to get their name on the leaderboard. Regardless, those notions supporting either side, gamification in the classroom is highly respected by many educators as research continues to be in progress.

The next major implication from this project is the need for a supportive technology department. Without a support system from people who are professionals, teachers will become frustrated and shy away from using technology in their lessons. In theory, there needs to be proper training on how to properly use the devices and programs the schools require teachers to use. Without this training, teachers will not be able to use their technology to their best ability which will then hinder the learning of the students. It is commendable, in theory, if a technology department is available to assist faculty, administration and staff technologically in any given school district. However, often it is likely not to happen in school districts where funds are readily not available. Technology is so important to the classroom and to be able to meaningfully incorporate it, there needs to be a supportive technology department that will guide the teachers through the troubles they may encounter.

Implications to Practice

This set of lesson plans has a number of implications to practice. While the lesson plans are written for an 8th grade cooking unit, they can be used for other grades as well or modified for a higher or lower grade level. These lesson plans are made to be used so that other educators have a starting point of how to incorporate technology into the classroom. For teachers who

do not teach FCS, they can use these lesson plans as a starting point for ideas of different games and platforms that can enhance their lessons.

This project gives reasoning on how to successfully incorporate technology into the classroom and the tools and supports needed to make this meaningful. It is important for educators to have these tools and use them to make the most engaging classroom for their students while also teaching them 21st century skills. Teachers should advocate for a supportive technology department if one is not already established and should request training on platforms that schools make mandatory for all teachers to use.

Along with mentioning the positives of technology, this project also explores the negatives. This way teachers can be prepared of things that could go wrong or be a hinderance to their students' learning. With anything good, comes some bad, but by being proactive and anticipating what could happen, teachers are able to put a stop to it before it becomes a problem.

Implications to Future Research

From here, lesson plans can be written on different units to incorporate technology. Units such as child development, financial resource management, sewing, and many more. Other platforms can also be found to supplement the ones in this unit of lesson plans. As new sites, games, and resources are developed, they can replace some older resources that are used. Since technology is still growing quickly, there are going to be endless resources that can be used and added to these and other lesson plans.

As technology keeps improving and becoming even more prominent in classrooms, more problems with students misusing the technology may unfold. It would be helpful to dive deeper into solutions with moderating how the students use their devices. As time moves on, there will

be more resources out there to help manage student technology use. These platforms can be added to the lesson plans to help other teachers with their classroom management strategies in FCS and other classes.

By implementing these plans into the classroom or using gamification strategies, classroom behavior will go down. When students are not engaged, they are more likely to cause problems or cause distractions. These plans have been tested in the classroom and have proven that students are more engaged when they are participating or having fun.

Epilogue

This research has truly impacted my classroom for the better. Throughout conducting this research, I have made changes to how I teach making sure the technology I am incorporating into my lessons is meaningful. I have incorporated the lesson plans I have written into my class and see the engagement with my students improve. I feel blessed that FCS class is one of the more engaging classes to begin with, but that doesn't come without the lecture days. After researching and finding exciting and engaging platforms to improve my teaching, these lecture days have been improved for the better.

I am now more aware of the negatives with incorporating this technology. I have anticipated the distractions and have limited them in my classroom by making sure my students are engaged during the entire class period. By changing out my lecture style lessons and using Pear Deck so the students are able to use their iPads to answer questions, I have seen student engagement improve first hand.

While my faith has always been strong, this research has proved to me that God has truly blessed me in my career. I am so thankful that I had the opportunity to conduct this research to make my classroom better. My faith and my love for the students in my classroom has truly

improved through this research. I teach because I want my students to live a life as successful as I believe mine is: filled with love and support. I want them to have the necessary life skills to live meaningful and productive lives. This research has given me the opportunity to show my love to my students by making my classroom a space that fosters meaningful and productive learning for all.

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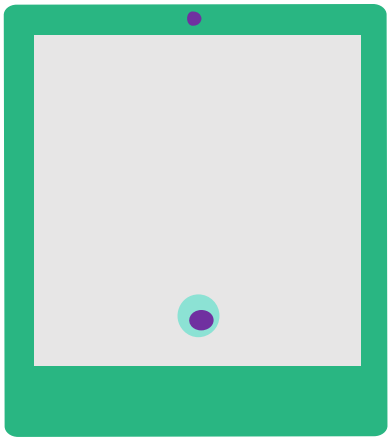
Family and Consumer Science on the Cutting Edge of Learning: Whipping Up a Dish of Technology



By Brynne Barth

6 Hands-On Lesson Plans Incorporating Engaging Technology Strategies and Skills in the FCS Classroom

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Introduction

This unit of lesson plans were designed for an 8th grade family and consumer sciences class. The focus of this unit is cooking. This set of lesson plans maps out the basics of beginning to cook. From measuring to equipment to food safety, these lesson plans are perfect for classes of students who are just starting to learn how to cook. The cooking unit can be daunting to try and figure out what pieces of technology to use. Because this unit is so hands-on, teachers might not know where to start. This unit of lesson plans gives a starting point for teaching with technology in the classroom.

Teachers are able to use these lesson plans in their entirety or take pieces from each to incorporate into their own lessons. These lesson plans give links and specific details to sources so they can easily be implemented. Each lesson plan has a different piece of technology added in so teachers can start incorporating technology into the classroom. The technology sources keep the students engaged so problem behaviors are minimized.

The goal of these lesson plans is to help teachers who want to incorporate technology into their family and consumer sciences classes but don't know where to start or are looking for new and exciting ways to spruce up their technology lacking lessons. These plans are not just limited to family and consumer sciences teachers. Teachers of any subject can use the ideas of incorporating technology and the different resources used and incorporate them into their own classes.

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	Family and Consumer Sciences
Date:	10/07/2021	**Topic:**	Measuring ingredients
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome
Learners will be able to correctly measure ingredients and accurately execute their new knowledge in their upcoming cooking labs (procedural)

B. Pennsylvania Academic Standards/ PA Core
11.3.6.F-Analyze basic food preparation techniques and food-handling procedures.
11.3.6.B- Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).

C. Essential Content
When measuring liquid ingredients, you need to put the liquid measuring cup on a flat surface and look at eye level.
When measuring ingredients with measuring spoons you scoop the ingredients and level off
When measuring brown sugar, you scoop into dry measuring cup, pack down, and level off.
When measuring flour, you scoop into dry measuring cup, check for air pockets, and level off
When measuring sugar, you scoop into measuring cup, and level off
For any other dry ingredients, you scoop into cup and level off

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will make pancakes.**

Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will be asked introductory questions about cooking and measuring:

1) When have you ever had to measure anything?
2) How many of you have measured ingredients in the kitchen before?
3) Can you describe the process you used to measure?
4) How many of you have eaten at a restaurant where the food was really good?
5) Why do you think it tastes so good?

2. Instructional Phase (engagement)

Demonstrate measuring ingredients

Flour- spoon into dry measuring cup, check for air pockets, and level off
White Sugar- spoon into measuring cup, and level off
Brown Sugar- spoon into dry measuring cup, pack down, and level off.
Salt/spices- scoop the ingredients with the measuring spoon and level off
Water- fill to correct amount and put the liquid measuring cup on a flat surface and look at eye level to check that the measurement is correct
Butter- Measurements are on the wrapper

Demonstrate that liquid and dry measuring cups look like they would be the same but they are not

Students practice measuring at their stations
They will rotate between flour, white sugar, brown sugar, salt, and water. We will do butter as a class.

3. Post-instructional Phase (strengthening)
Think Pair Share- On Canvas
Students will open their iPads to navigate Canvas. They will be able to access their assignment and complete it on that app. Then when they are finished, they can submit it back to me on Canvas.
"Assess the steps you took to measure brown sugar," "compare and contrast measuring flour and measuring sugar," and "predict what could happen if you use a dry measuring cup for a liquid ingredient.
End of class questions

F. Daily Lessons (repeat for each daily lesson)

1. **Time Estimate**
   50 Minutes
2. **Expectancy, Motivation, Interest, Attention (Anticipatory Set)**
   "Today we are going to talk about something we have been doing out whole lives but it is such an important part of this unit that we need to learn the acceptable way to do it. We will be talking about hand washing. Why is this so important to learn about?"

   "When have you ever had to measure anything?" "How many of you have measured ingredients in the kitchen before?" "Can you describe to me the process you used?"

   "How many of you have eaten at a restaurant where the food is really good? Why do you think that it tastes so good" The answer I am looking for is precise measurements and consistency.
3. **Specific Learning Activities (list from Part E)**
   measuring demo, measuring practice
4. **Review, Wrap-up (Closure)**
   Think-pair-share
   "Please open your iPads and go to the Canvas app. Under the introduction to cooking module, you will find your think pair share measuring questions to complete. First, you will complete the questions by yourself. I will give you about 5 minutes to do this. After the 5 minutes you can share your answers with the person sitting next to you. You will have 5 more minutes to do that. When those 10 minutes are up, we will go over them as a class to make sure everyone has the correct answers. You will then

submit the paper to me through Canvas.

Think-Pair-Share

1. Assess the steps you took to measure brown sugar.
2. Compare and contrast measuring flour and measuring sugar.
3. Predict what could happen if you use a dry measuring cup for a liquid ingredient?
4. When measuring liquids, to get an accurate measurement it is important to use a _____ measuring cup.
5. It is different from a dry measuring cup in what three ways?
6. Read liquid at _____ _____ on a _____ _____
7. Measure brown sugar or flour in what type of measuring cup?
8. What is important to remember when measuring brown sugar?
9. Spices, salt, baking soda, and baking powder are measured using what measuring device?
10. Measuring spoons can be used for both_____ and _____ ingredients
11. Lightly spoon dry ingredients until the cup is _____ and then _____ with a flat edge
12. What do you have to do when measuring flour?

G. Summative Assessment (Consistent with Instructional Objective)

Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment by completing a foods lab where they will cook pancakes. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

H. Modifications and Accommodations

English Language learners will be able to use their iPads to translate review papers.

Learning support students will be seated in the front of the room.

Both ELL and learning support students will be put in teacher assigned groups that incorporate mixed ability of students.

A knowledgeable teacher's aide will be in the room to assist any students that may be having trouble.

I. Resources

1. Materials

Dry Measuring cups, liquid measuring spoons, butter, flour, sugar, brown sugar, salt, leveler, dish towels, dishes, spoons,

2. **Advance Preparations**
   I need to go out and buy the flour, butter, sugar, brown sugar, and salt.
   All equipment will be out for demo
   Run off review papers
3. **References**

Lesson from Mrs. deGruchy's file revised by Brynne Barth

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	FCS
Date:	10/07/2021	**Topic:**	Kitchen Equipment
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome

Learners will be able to correctly identify the different tools and equipment that we will be using in class.

B. Pennsylvania Academic Standards/ PA Core

11.3.6.F-Analyze basic food preparation techniques and food-handling procedures.

C. Essential Content

1. Baking Sheets - used to make cookies, quesadillas, etc.
2. Cooling Rack - transfer muffins or cookies to this to help cool it down
3. Custard Cup - used to crack eggs into or to transport ingredients
4. Cutting Board - use when using the sharp knives
5. Dish Towels - used to wash/dry dishes
6. Dry Measuring Cup - used to measure dry ingredients
7. Electric Mixer - mixes up ingredients at a higher speed
8. Grater - shreds or cuts different vegetables or cheese
9. Hot Pads - to keep hands safe when carrying hot pans
10. Leveler - level off dry ingredients
11. Liquid Measuring Cup - measures liquids like oil, milk, or water
12. Measuring Spoons - used to measure small amounts of ingredients (spices)
13. Mixing Bowls - mix ingredients in the bowls
14. Muffin Tin - used to make muffins or cupcakes

15. Rolling Pin - roll out dough
16. Rubber Scrapper - used to get scrape batter, do not use with hot ingredients
17. Sifter - used to get clumps out of dry ingredients, do not wash in sink
18. Spatula - flip foods like pancakes or French toast
19. Whisk - mix together different ingredients

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will make pancakes**
Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will come into class and take a seat. I will tell them that today, they will be completing a kitchen equipment escape room and then a review game for the equipment. I will ask them if any of them have done an escape room before. Students will then be put into groups of 2 or 3. Students will be given the option to choose their groups if they would like. Once everyone is in a group, I will hand out their envelopes to them with all of the information that they need. I will go over a few pointers with them. First, in order to move on to the next activity, they must get the activity they just completed checked by me. Second, they should be very thorough with reading the instructions. They have to complete the activity exactly how the instructions say or they cannot move on. I will then ask if anyone has any questions. Once all of the questions are answered, we will start.

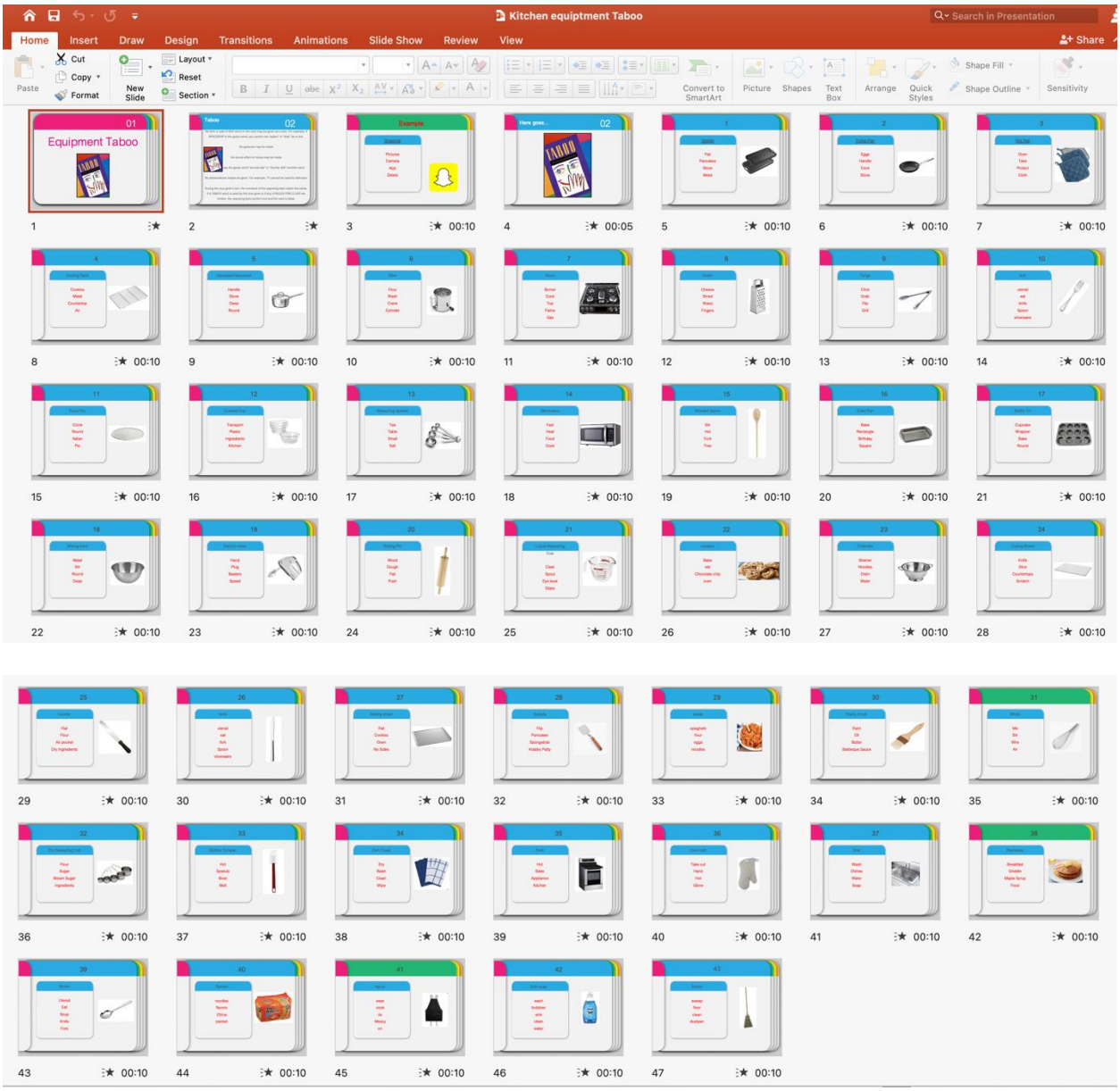
2. Instructional Phase (engagement)

Students will open their envelopes. Their first activity is to match the name of the piece of equipment with the explanation of what it is used for and the picture. They must also put these in alphabetical order. In a Ziploc bag they will find all of the slips of paper to be matched. When they think they have completed this challenge, they will get me to check. If it is correct, I will give them permission to move on to the next task. If it is incorrect, I will let them know and they will try again until their challenge is completed correctly. Challenge number two is to go into the kitchens and find where the piece of equipment is located. They will then stick the picture of that piece of equipment on the drawer or cabinet that it is used for. Once they are finished, I will check their work and ask them what the equipment is used for. In order to move on, they have to have all of the equipment pieces taped to the correct drawer or cabinet and correctly identify what it is used for. If they pass, they move on. The third challenge is to write where the pieces of equipment are located. These pieces of equipment are different than the last challenge. For example, if they are locating a dish towel they must write that you can find it in the drawer to the left of the oven. Once I have checked that their comments are specific enough, they will move on to the final challenge. The final challenge is all about doubling and halving a recipe. This is a preview for what is to come in the next few weeks. Students will have to double and halve one recipe. When they are finished and think they are correct I will check it. If they are wrong they will try again. If they are correct they will be finished.

https://docs.google.com/document/d/1VMcAoLIfVU2J0hDgllgnqfV3hLzilTU_-JwcLk--NQM/edit?usp=sharing

3. Post-instructional Phase (strengthening)

As a class, students will be playing a game of kitchen equipment Taboo. This will be on a PowerPoint presentation. Students will be divided up into two teams. Every round, students will pick a team member to be the “describer” this person will have to describe the guess word without using any of the buzz words. The guess word is a piece of equipment and the buzz words relate to the guess word. The rest of the team will be turned around not looking at the card. The other team will be looking at the screen listening to make sure that the “describer” does not say any of the taboo words. For every correct answer from the guessing team they get one point. If the “describer” says any of the buzz words. The other team gets one point. Each team will have 30 seconds to guess as many words as possible.



F. Daily Lessons (repeat for each daily lesson)

5. **Time Estimate**
   50 minutes
6. **Expectancy, Motivation, Interest, Attention (Anticipatory Set)**
   "Today I have a kitchen equipment escape room for you to complete! You are going to be in groups of 2 or 3 to complete this. I will allow you to choose your own group. Once you have a group, sit down at a table and I will hand you an envelope. I want to point out 2 things to you for this activity. First, read the directions carefully. In order to pass the challenge, everything has to be correct and the directions have to be followed exactly. Second, after you think your challenge is correctly completed, come and get me and I will check. Only after I check and hand you a blender piece can you move on to the next challenge."
7. **Specific Learning Activities (list from Part E)**

Kitchen equipment escape room

8. **Review, Wrap-up (Closure)**
   We are now going to play a game of kitchen equipment taboo. Right now I would like you to split into two teams. (Students will split into teams.) Here are the instructions for the game. There will be a word on the screen. Team A will be the describing team. One person of that team will be the describer. The rest of the team will be turned around not looking at the screen. The describer will have to describe the piece of equipment without saying any of the buzz words. If they say any buzz words, team B gets the point. A point is earned for every correct guess. At this time, team B is watching the screen and listening to make sure team A does not say any of the buzz words. Each team gets 30 seconds to guess. When the 30 seconds is finished, team B then is the guessing team. We will play this until we run out of words.

G. Summative Assessment (Consistent with Instructional Objective)

Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment By completing a foods lab where they will make smoothies. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

H. Modifications and Accommodations

English Language learners will be able to use their iPads to translate the escape room

All students will be put in groups for teamwork and collaboration.

I. Resources

4. **Materials**
   Escape room envelopes and Taboo PowerPoint
5. **Advance Preparations**
   Escape room envelopes must be packed and ready for students.
   Answer key must be printed out
   Taboo must be up and ready to go
6. **References**
   Inspiration for escape room from FCS fork and knife FCS on Teachers Pay Teachers
   Escape room made by Brynne Barth
   Taboo template from https://www.tes.com/teaching-resource/taboo-template-11010502

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	FCS
Date:	10/15/2021	**Topic:**	Food Safety
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome

Learners will be able to identify was to prevent food borne illnesses

B. Pennsylvania Academic Standards/ PA Core

11.3.6.B Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).
11.3.6. F. Analyze basic food preparation techniques and food-handling procedures.
11.3.3.B Describe personal hygiene techniques in food handling (e.g., handwashing, sneeze control, signs of food spoilage).

C. Essential Content

Ways to prevent food borne illnesses:

- Washing hands
- Rinsing vegetables and fruits
- Preventing cross-contamination
- Cooking foods to safe internal temperatures
- Storing foods safely in the home

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will make pancakes.**

Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will watch a short introductory video on the 4 steps of food safety: Clean, Separate, Cook, and Chill. This video is titled *SafeConsume Food Safety – User Journey Animation.*

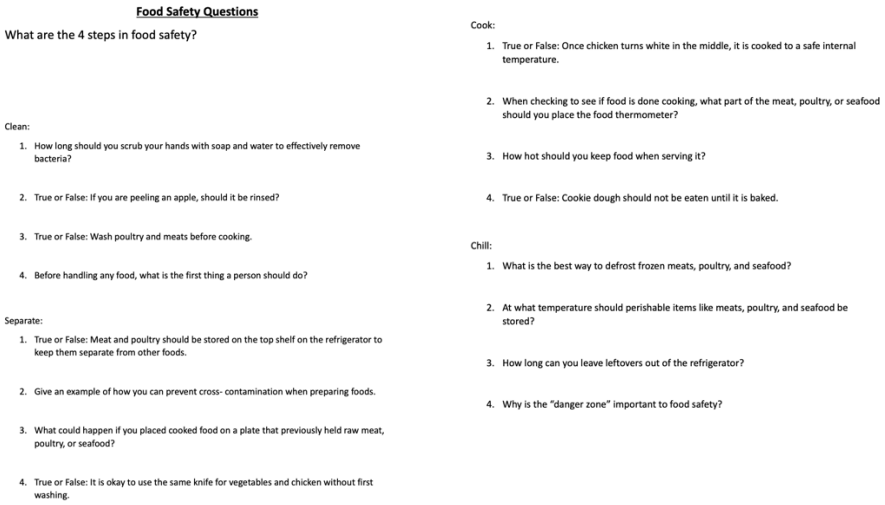
The teacher will then ask the students if they have ever experienced a food borne illness- We will discuss as a class

2. Instructional Phase (engagement)

The teacher will be presenting a Google Slides/ Pear Deck presentation to the students. This presentation will include:

- Definition of a food borne illness
- How to prevent food borne illnesses
- Clean- wash hands-wash cutting boards-rinse vegetables-cross contamination
- Separate- separate raw meat, poultry, and seafood from other foods in cart, on counter, in fridge-use different cutting boards if possible- wash all utensils after use
- Cook- insert thermometer into thickest part of meat- steaks, roasts, chops: 145 degrees-beef, pork, veal, lamb- 160 degrees- poultry- 165 degrees –Temperature danger zone-40-140
- Chill- keep food below 40 degrees, refrigerate/freeze perishables, prepared foods, and leftovers within two hours- Never thaw food on the counter.
- Students will fill out a note sheet to go along with the lesson
- Once the lesson is finished we will review as a class

https://docs.google.com/presentation/d/1uW2TMb9U6V8tM3bRvSxS72bxwb24A0JU5y0m1zf32jU/edit?usp=sharing



Food Safety Questions

What are the 4 steps in food safety?

Clean:

1. How long should you scrub your hands with soap and water to effectively remove bacteria?
2. True or False: If you are peeling an apple, should it be rinsed?
3. True or False: Wash poultry and meats before cooking.
4. Before handling any food, what is the first thing a person should do?

Separate:

1. True or False: Meat and poultry should be stored on the top shelf on the refrigerator to keep them separate from other foods.
2. Give an example of how you can prevent cross- contamination when preparing foods.
3. What could happen if you placed cooked food on a plate that previously held raw meat, poultry, or seafood?
4. True or False: It is okay to use the same knife for vegetables and chicken without first washing.

Cook:

1. True or False: Once chicken turns white in the middle, it is cooked to a safe internal temperature.
2. When checking to see if food is done cooking, what part of the meat, poultry, or seafood should you place the food thermometer?
3. How hot should you keep food when serving it?
4. True or False: Cookie dough should not be eaten until it is baked.

Chill:

1. What is the best way to defrost frozen meats, poultry, and seafood?
2. At what temperature should perishable items like meats, poultry, and seafood be stored?
3. How long can you leave leftovers out of the refrigerator?
4. Why is the "danger zone" important to food safety?

-

3. Post-instructional Phase (strengthening)

Glo Germ- Each student will get a squirt of the Glo Germ liquid on their hands. The students will rub the liquid all over their hands. They will take their nails and scrape their palms to get the liquid under their nails. They will then wash their hands like normal. After hand washing the teacher will put a black light over their hands and They will see all of the spots they missed while washing their hands.

F. Summative Assessment (Consistent with Instructional Objective)

Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment by completing a foods lab where they will cook pancakes. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

G. Modifications and Accommodations

ELLs will be able to use their iPads to translate the note sheet
Students will be able to take notes on their iPad or paper

H. Resources

7. Materials

iPads, food safety presentation, note sheet, Glo Germ, intro video.

8. Advance Preparations

- Print off copies of the note sheet.
- Get out Glo Germ
- Make Presentation

9. References

eBug Website (2020, April 16). *SafeConsume Food Safety – User Journey Animation* [Video] YouTube. https://www.youtube.com/watch?v=nf4R6XHCU4Q&vl=pt

GloGerm
https://www.glogerm.com/#:~:text=The%20liquid%20or%20gel%20and,onto%20one's%20hands%20like%20lotion.&text=Then%20wash%20your%20hands%20or%20clean%20the%20area%20as%20normal.

Presentation from the library of Mrs. DeGruchy, modified by Brynne Barth

I. Daily Lessons (repeat for each daily lesson)

9. Time Estimate

This lesson will take one class period or 50 minutes

10. Expectancy, Motivation, Interest, Attention (Anticipatory Set)

The teacher will ask the students "Has anyone ever experienced a food borne illness, and if so would you like to share it with the class?"

The teacher will show the video *SafeConsume Food Safety – User Journey Animation.*

11. Specific Learning Activities (list from Part E)

Presentation on Food borne illness prevention and note sheet

12. Review, Wrap-up (Closure)

"To end class today we are going to do a hand washing activity. I will be coming around with a bottle of Glo Germ liquid that will simulate germs. I will put a little bit on your hand and you will rub it all over your hands. Also, take you nails and scrape your palms. Once the liquid is all over your hands, wash and dry them and sit down. I will be coming around with a black light to see how well you did washing your hands."

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	Family and Consumer Sciences
Date:	10/15/2021	**Topic:**	Review
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome
Learners will be able to identify correct measuring techniques and food safety procedures.
B. Pennsylvania Academic Standards/ PA Core
11.3.6.F-Analyze basic food preparation techniques and food-handling procedures.
11.3.6.B- Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).
11.3.3.B Describe personal hygiene techniques in food handling (e.g., handwashing, sneeze control, signs of food spoilage).
11.3.6.B Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).

C. Essential Content
Three things you do when you get into the lab- Put on apron, tie hair back, wash hands
It is not okay to leave drawers or cabinets open
If you are a hazard in the kitchen you will be removed from the lab
Pot and pan handles should face towards the back or side
You are not allowed to visit other kitchens to check the progress on their lab
Put equipment back when you are finished using it
You should immediately clean up a spill so no one slips and falls and so the countertops are not sticky
A jelly roll pan has 4 sides, a baking sheet is flat
Spices, salt, baking soda, and baking powder are measured using measuring spoons
A liquid measuring cup is clear, has headspace, and has a spout
Pack down brown sugar
You need to check for air pockets when measuring flour
Put your liquid measuring cup on a flat surface and get down on eye level
Yield means how much/how many the recipe serves
You use a wooden spoon for stirring hot liquids
The temperature danger zone is 40 degrees F to 140 degrees F
Cross contamination can happen when you place cooked food on a plate that previously held raw meat
The four steps in food safety are clean, separate, cook, and chill
Stick the food thermometer in the thickest part
Scrub your hands with soap and hot water for 20 seconds

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will make pancakes.**
Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will be welcomed into the classroom. On the board will be written that they only need their iPad for the class period. Students will come in, put everything away in the cubbies except for their iPads.

2. Instructional Phase (engagement)

Students will be playing a review game of Kahoot!. Students will open the Kahoot! app on their iPads. The teacher will have the code broadcasting on the projector screen. There are 26 questions. The questions will be projected and the students have to pick the correct answer on their iPad. The winner is the person who answered the most questions correct in the fastest time.

https://play.kahoot.it/v2/?quizId=af724628-5de7-47a8-993f-8e06c231369e

3. Post-instructional Phase (strengthening)
Students will be asked if anyone has additional questions about the quiz they will be taking the next class day. We will discuss the answers to their questions as a class.

F. Daily Lessons (repeat for each daily lesson)

13. Time Estimate
50 Minutes

14. Expectancy, Motivation, Interest, Attention (Anticipatory Set)
"Today we are going to be playing a Kahoot! review game. Please make sure the only thing you have out in front of you is your iPads.

Specific Learning Activities (list from Part E)
Kahoot!

15. Review, Wrap-up (Closure)
"Does anyone have any additional questions about the quiz tomorrow? (or Monday if it is a Friday)." We will discuss any questions they may have as a class.

G. Summative Assessment (Consistent with Instructional Objective)
Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment by completing a foods lab where they will cook pancakes. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

H. Modifications and Accommodations

Learning support students will be seated in the front of the room.

Students who having trouble seeing the board will sit in the front of the room.

I. Resources

10. Materials
iPads, Kahoot!

11. Advance Preparations
Teacher will have the projector set up and the Kahoot! up on the projector screen.

12. References
Kahoot! made by Brynne Barth

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	Family and Consumer Sciences
Date:	10/21/2021	**Topic:**	Cooking Quiz
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome
Learners will be able to identify correct measuring techniques and food safety procedures.
B. Pennsylvania Academic Standards/ PA Core
11.3.6.F-Analyze basic food preparation techniques and food-handling procedures.
11.3.6.B- Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).
11.3.3.B Describe personal hygiene techniques in food handling (e.g., handwashing, sneeze control, signs of food spoilage).
11.3.6.B Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).

C. Essential Content
Three things you do when you get into the lab- Put on apron, tie hair back, wash hands
It is not okay to leave drawers or cabinets open
Pot and pan handles should face towards the back or side
You are not allowed to visit other kitchens to check the progress on their lab
Put equipment back when you are finished using it
Use a colander to strain liquids
Measuring spoons measure both liquid and dry ingredients.
Spices, salt, baking soda, and baking powder are measured using measuring spoons
A liquid measuring cup is clear, has headspace, and has a spout
Pack down brown sugar
You need to check for air pockets when measuring flour
Put your liquid measuring cup on a flat surface and get down on eye level
One stick of butter equals ½ cup
You use a wooden spoon for stirring hot liquids
The temperature danger zone is 40 degrees F to 140 degrees F
Cross contamination can happen when you place cooked food on a plate that previously held raw meat
Do not rinse off meat before cooking it
The four steps in food safety are clean, separate, cook, and chill
Never leave leftovers out for more than 20 minutes
Meat should be stored on the bottom shelf in the refrigerator

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will make pancakes.**
Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will be welcomed into the classroom. Students will be given the first 5 minutes of class time to look over their notes in preparation for the quiz today. Once the five minutes is up, the teacher will ask the students if they have any additional questions before they begin. The teacher will answer the questions that are asked.

2. Instructional Phase (engagement)

Students will be taking their quiz on the Quizizz app. This app makes their quiz into a game with power ups and redemption questions. The teacher will log onto Quizizz and start a live quiz. Next, the teacher will click on “classic” so the students can all take the test at their own pace. After that, the teacher will click “classic” again and then “continue. A join code will the come up that the teacher will write on the board in the front of the classroom. Students will put in the code on their app and their names will appear on the teacher’s computer.

When everyone has their name in, the teacher will begin. As the students are playing, the teacher is able to monitor the progress of the students.

https://quizizz.com/admin/quiz/5f6a1b165d8be3001b60e4b0

3. Post-instructional Phase (strengthening)

When everyone is finished with the quiz, they will fill out their work plan for their pancake lab the next class day. They will write down the name of the recipe and who has what job (head chef, assistant chef, organization chef, and sanitation chef.) They will then write down any abbreviations that are on their recipe and what they stand for. They will write down the yield of the recipe and lastly, they will list all of the utensils that are needed for the lab. When they have finished filling out their workplan, they will call the teacher over. The teacher will check it, and then they will put it in the turn in bin.

TABLE _____

Foods Lab Work Plan

Recipe _____

Job Titles:

Head Chef _____

Assistant Chef _____

Organization Chef _____

Serving Chef _____

Sanitation Chef _____

Abbreviations used and what they stand for:

What is the yield of this recipe?

List utensils needed:

F. Daily Lessons (repeat for each daily lesson)

16. Time Estimate

50 Minutes

17. Expectancy, Motivation, Interest, Attention (Anticipatory Set)

"Today we are going to be a taking the quiz. I will give you five minutes to review your notes. Once that time is up, you can ask any remaining questions and then we will begin."

18. Review, Wrap-up (Closure)

"I will be coming around with your work plans and recipes." Students will fill out their food lab work plan and answer write down the recipe name, what job each person has, abbreviations and what they stand for, yield of the recipe, and utensils needed for the lab. "When you are finished, please call me over to check it. After it is checked you may put it in the turn in bin."

G. Summative Assessment (Consistent with Instructional Objective)

Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment by completing

a foods lab where they will cook pancakes. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

H. Modifications and Accommodations

Quiz on Quizizz is adapted for multiple choice

ELL can you their iPad and Google Translate to translate the quiz.

Learning support students may take the quiz as many times as needed to pass

I. Resources

13. Materials

iPads, Quizizz

14. Advance Preparations

Teacher will have the quiz on Quizizz ready for the students.

15. References

Quizizz made by Brynne Barth

Messiah University
Instructional Plan Template for
Elementary, Early Childhood, and Secondary Education

Name:	Brynne Barth	**Subject:**	FCS
Date:	10/21/2021	**Topic:**	Food Lab
Grade:	8	**School:**	MAMS

A. Instructional Goal and Learning Outcome
Learners will be able to execute their knowledge and skills of measuring, food safety, time management, and equipment in a cooking lab.

B. Pennsylvania Academic Standards/ PA Core

11.3.6. B. Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).

11.3.6. F. Analyze basic food preparation techniques and food-handling procedures.

11.2.6. B. Deduce the importance of time management skills (e.g. home, school, recreational activities).

11.2.6.C. Classify the components of effective teamwork and leadership.

C. Essential Content
To get an accurate measurement when measuring liquids, use a liquid measuring cup, put it on a flat surface, and get down at eye level to read the measurements.
When measuring flour, scoop it into the dry measuring cup with a spoon, check for air pockets with a leveler, and then level off.
Level off ingredients in your measuring spoons
To turn on gas stove, press in knob, turn to light (you should hear clicking,) once burner is lit, turn to temperature you need.
Identify and properly use the following pieces of equipment:
Griddle
Frying pan/skillet
Liquid measuring cup
Spatula
Mixing bowl
Measuring spoons
Leveler
Whisk
Recognize the following abbreviations:
C=cup

tsp=teaspoon
Tbsp=tablespoon
Job tasks are assigned by group so everyone has something to do. If everyone does their jobs and works with a purpose, students will be done on time.

D. Instructional Objective (description of Summative Assessment Strategy)

Context	**Given measuring tools, ingredients, and kitchen equipment**
Performance Capability	**LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment**
Performance Action	**By completing a foods lab where they will cook pancakes.**
Quality	**Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.**

LABORATORY SCORE SHEET

LAB: _____

DATE: _____

	1. Preparation/Recipe Review	2. Safety & Sanitation	3. Equipment Usage	4. Tool Usage	5. Measurement Technique	6. Participation & Cooperation	7. Teamwork	8. Time Management	9. Kitchen Clean-up	10. Finished Product	COMMENTS:	SCORE
Kitchen 1												
Kitchen 2												
Kitchen 3												
Kitchen 4												

ADDITIONAL NOTES:

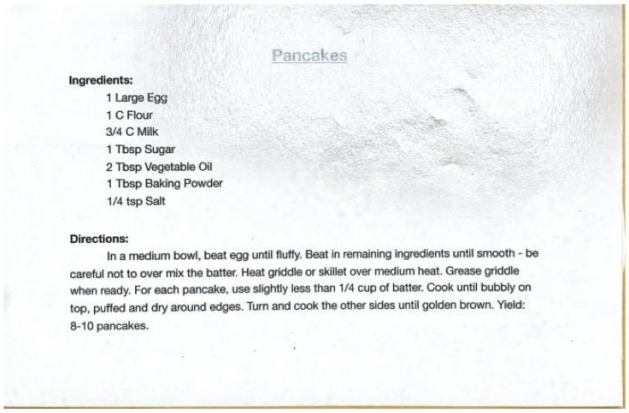
E. Instructional Sequence

1. Pre-instructional Phase (preparation)

Students will come into class, sit down with their groups, and the teacher will pass out their recipes. Students will be making pancakes. Students will then be told to get their work plan from the turn in bin. If they did not complete it from the class day before, they will finish it. Students will also be watching a short YouTube video that will show them when to flip a pancake so they have a visual example of what a pancake looks like when it is ready to flip. https://www.youtube.com/watch?v=4oBbXuizwdI

2. Instructional Phase (engagement)

When students are dismissed from their seats to their labs, they will tie their hair back, put on an apron, and wash their hands. The organization chef will get out all of the equipment and tools that are needed. The head chef will look at the recipe and start measuring out the bigger ingredients. The assistant chef will measure out the smaller ingredients (like spices, salt, etc.) The sanitation chef will fill the sink with hot soapy water. When all of the ingredients are measured out, the head chef will then start cooking. During this time, the organization chef will get out plates and start to set the table. They will fill up water cups for everyone. The sanitation chef will start washing the dishes as they come. Once the food is made, the assistant chef will serve it and everyone will start to eat. Once the students are finished eating, the sanitation chef will go back to washing dishes, the assistant chef will dry the dishes, the organization chef will put away all the dishes, and the head chef will wipe down the counter and table. Once all of the dishes are done, the assistant chef will sweep the floor and the sanitation chef will dry out the sink. Students should be marking on their checklist as things get completed. Students will then call the teacher over to check that they have cleaned up thoroughly from their lab. If they have, they will go back to their seats and fill out their evaluation of the lab. If their kitchen is not fully cleaned, the teacher will point out what needs to be done and they will continue cleaning until their kitchen is fully cleaned.



Pancakes

Ingredients:

1 Large Egg
1 C Flour
3/4 C Milk
1 Tbsp Sugar
2 Tbsp Vegetable Oil
1 Tbsp Baking Powder
1/4 tsp Salt

Directions:

In a medium bowl, beat egg until fluffy. Beat in remaining ingredients until smooth - be careful not to over mix the batter. Heat griddle or skillet over medium heat. Grease griddle when ready. For each pancake, use slightly less than 1/4 cup of batter. Cook until bubbly on top, puffed and dry around edges. Turn and cook the other sides until golden brown. Yield: 8-10 pancakes.

3. Post-instructional Phase (strengthening)

Students will be completing an evaluation of their lab. They will answer the questions: “How was your final product?” “Did your food turn out as planned? Why or why not?” and “What would you do differently next time?” When the students have finished answering their questions they will turn in their paper to the teacher.

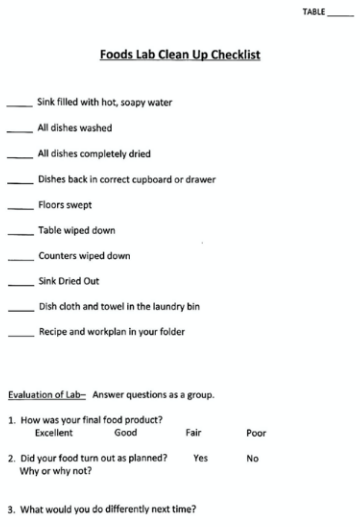


TABLE _____

Foods Lab Clean Up Checklist

_____ Sink filled with hot, soapy water
_____ All dishes washed
_____ All dishes completely dried
_____ Dishes back in correct cupboard or drawer
_____ Floors swept
_____ Table wiped down
_____ Counters wiped down
_____ Sink Dried Out
_____ Dish cloth and towel in the laundry bin
_____ Recipe and workplan in your folder

Evaluation of Lab– Answer questions as a group.

1. How was your final food product?
   Excellent Good Fair Poor
2. Did your food turn out as planned? Yes No
   Why or why not?
3. What would you do differently next time?

F. Summative Assessment (Consistent with Instructional Objective)

Given measuring tools, ingredients, and kitchen equipment, LWBAT demonstrate their knowledge and skills of measuring, food safety, time management, and equipment by completing a foods lab where they will cook pancakes. Students must earn a passing grade on this lab (60% or higher.) A rubric will be used to grade this.

G. Modifications and Accommodations

ELLs will be able to use their iPad to translate the recipe, workplan, check list, and lab evaluation.

Learning support students will be grouped with knowledgeable peers.

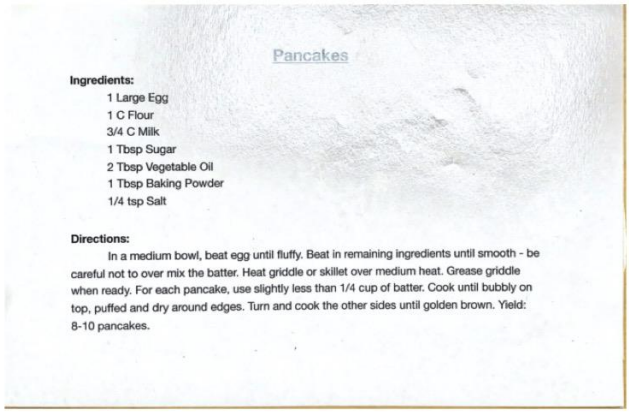
Students with food allergies will be accommodated for.

H. Resources

16. Materials

Griddle
Frying pan/skillet
Liquid measuring cup
Spatula
Mixing bowl
Leveler
Measuring spoons
Whisk
Eggs
Flour
Milk

Sugar
Vegetable Oil
Baking Powder
Salt



Pancakes

Ingredients:

1 Large Egg
1 C Flour
3/4 C Milk
1 Tbsp Sugar
2 Tbsp Vegetable Oil
1 Tbsp Baking Powder
1/4 tsp Salt

Directions:

In a medium bowl, beat egg until fluffy. Beat in remaining ingredients until smooth - be careful not to over mix the batter. Heat griddle or skillet over medium heat. Grease griddle when ready. For each pancake, use slightly less than 1/4 cup of batter. Cook until bubbly on top, puffed and dry around edges. Turn and cook the other sides until golden brown. Yield: 8-10 pancakes.

17. Advance Preparations

Go shopping for ingredients
Print out food lab work plan paper

18. References

Steiber, H. (n.d.). Culinary Lab Evaluation Sheet. Retrieved October 29, 2020, from https://www.teacherspayteachers.com/Product/Culinary-Lab-Evaluation-Sheet-651670?st=b347d5857370f02ff0e77d407d649c25

Pancake recipe came from the library of Megan DeGruchy (previous teacher)

I. Daily Lessons (repeat for each daily lesson)

19. Time Estimate

This lab will take one class period or 50 minutes.

20. Expectancy, Motivation, Interest, Attention (Anticipatory Set)

"Please come into class and take a seat with your cooking group. I will be coming around with your recipes. Please get your workplan from the turn in bin. If you have not finished your workplan, please finish that now. When you are done, there is a YouTube video on Canvas to watch. This is a short video that will show you the correct time to flip a pancake."

21. Specific Learning Activities (list from Part E)

Pancake Lab

22. Review, Wrap-up (Closure)

"When your lab is finished, you have checked everything off your list, and I have checked that your kitchen is clean, you will sit down with your group and together, fill out your lab evaluation." The students will reflect on their lab and write how their product turned out, if it turned out as planned and why or why not, and what they would do differently next time.

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