The Power of Black Girl Mathgic: An Exploration of Black Women in STEM

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This curriculum unit is recommended for:
6th Grade Standard Math and 6th Grade Honors Math

Keywords: Black, girl, magic, math, mathgic, STEM

Teaching Standards: See Appendix 1 for teaching standards addressed in this unit.

Synopsis: This unit will highlight Black women in STEM, emphasize the importance of increasing the percentage of Black women working in STEM careers, and explore the many ways math connects to African American culture especially related to Black women. The ultimate goal is for students to see themselves in STEM positions in the future. This will be accomplished through learning various stories of Black women in STEM while simultaneously gaining a stronger understanding of math concepts. This unit plan will be rigorous, culturally appropriate, and culturally responsive. I believe engaging students in this unit will entice them and create greater investment in future math courses. When students are invested, they put forth stronger efforts in the course. This leads to stronger end of grade results. More importantly, students will develop self-awareness, self-confidence, and cultural pride that will stick with them throughout the duration of their educational career and perhaps their lifetime.

I plan to teach this unit during the coming year to 90 students in 6th Grade Standard Math and 6th Grade Honors Math.

Introduction

Rationale

This unit plan heavily incorporates topics related to Black Girl Magic. Black Girl Magic is a term and movement coined by CaShawn Thomas that refers to the "beauty, power and resilience of black women."[1] Black Girl Magic is vital because it creates a space for Black women to "express solidarity with each other and affirm our worth by celebrating the moments of Black female excellence that go unnoticed every day."[2] The culmination of math excellence and Black Girl Magic creates the term Black Girl Mathgic. Black Girl Mathgic is a term I believe emphasizes Black women's strong connection to math and refers to the dynamic feats Black women can reach when incorporating their magic into the math realm.

School Demographics

Wilson STEM Academy is a middle school serving grades six through eight on the west side of Charlotte, North Carolina. Wilson is a part of the Northwest learning community in Charlotte Mecklenburg Schools. Wilson just entered its' third year after reopening as a STEM school. Wilson is a fully inclusive computer science and engineering immersion school. Wilson is also partially magnet. Students at Wilson are grouped into cohorts. Students are typically grouped into cohorts based on academic need. There are eight cohorts in each grade level. There are also two gender-based classes in each grade level. Currently, I teach four 6th grade math classes that are each 70 minutes long. I teach two standard classes, one inclusion class, and one honors class. One of my standard classes is a gender-based class of all female students.

There are currently 474 students enrolled at Wilson. There are 144 sixth graders, 167 seventh graders, and 163 eighth graders. At Wilson, 47.7% of students identify as female and 52.3% of students identify as male. Our population is 70.7% African American, 20.3% Hispanic, 5.1% Asian, and 2.7% White. There is 1.1% of our population that identify as mixed race. There are 12.4% of students living with a disability. There are 2.5% of students who have tested as academically gifted. There are 11.6% of students who are English language learners. There are 2.1% students who are experiencing homelessness.

Implementation at Wilson

Black Girl Magic should be discussed and celebrated throughout the school year at Wilson. It is something that should be implemented throughout the curriculum and consistently taught to students. I believe this unit will be especially impactful for the all- female cohorts we have at Wilson. These cohorts all consist of Black girls. This unit can directly connect them.

As a STEM school, it is also important to highlight people who are or were in the STEM field. Almost half of our population at Wilson are Black females. Many of the people they learn about in STEM should look like them. Students will see representation of people who look like

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[1] Wilson, "The Meaning of Black"

[2] Smith, "The Meaning of Black"

them and develop the confidence to pursue a career in STEM. Additionally, students will understand and take advantage of the benefits of attending a STEM school that can better prepare them for a STEM career.

Unit Goals

This unit has eight learning targets with an emphasis on targets one through three.

Learning target one aims for students see the importance of Black Girl Magic. Students will understand the powerful role Black women have played throughout history. Students will understand why Black women should be respected, loved, and celebrated.

Learning target two pushes students to envision themselves in STEM. Students will read profiles of Black women in STEM. Some profiles will be shared of Black women who have careers related directly or inadvertently to STEM. Some profiles will highlight well-known Black women in STEM. Most profiles will highlight the lesser known stories of Black women in STEM. Students need to see representation of people who look like them in STEM careers. In this case, representation matters because it can influence how students view themselves and how they potentially view themselves in the STEM field.

Learning target three urges students see the value of math. Students will learn how math shapes the world around them. Students will understand how valuable math is to modern society. Learning target five is closely related to learning target four. Learning target 4 pushes students to make real world connections. Students recognize the many ways they use math daily.

Learning target five promotes students' math confidence development. Students who do not have math confidence often are reluctant to participate in class and less likely to perform well on assessments. Students should know that they are capable of understanding grade level math concepts. Additionally, students should know they have the ability to excel on assessments. Students will gain this understanding through developing math confidence. Each lesson will contain a quote that is geared toward encouraging students to persevere in the learning environment.

Learning target six encourages Students take pride in African American history and culture. Students will see examples of the many ways Black women have contributed to the development and progression of western society. Learning target seven presses students make meaningful connections between math, history, science, and ELA. Students will understand that all subjects are interconnected.

Students will gain a stronger understanding of math concepts through target 8. The lessons within this unit have a primary focus on Black Girl Magic. However, this unit also aims to review major concepts from the sixth-grade math curriculum. The unit is not intended to introduce new mathematical topics. All standards in this unit should be taught prior to implementing a lesson.

Content Research

Black Girl Magic Changes the Narrative

For decades, Black women have not been inaccurately portrayed through media outlets. Black women are often presented as having a monolithic narrative, which creates preposterous stereotypes. There are five leading stereotypes that have been highly popularized and are inevitably dangerous to the Black woman's psyche.

The first stereotype being the demonization of the Black woman.[3] This is often demonstrated as Black women being aggressive and mean spirited. The second stereotype presents Black women as hypersexualized beings. Black women are frequently portrayed as promiscuous and inviting of sexual objectification.[4] The third stereotype positions Black women as animalistic. This influences the idea that Black women are intellectually primitive and undeserving of positions of authority or power. The fourth stereotype gives a criminalized portrayal of Black motherhood. This creates the notorious welfare queen rhetoric. The fifth stereotype hyper-masculinizes Black women[5]. This leads to the belief that Black women are emasculating and less feminine than their counterparts of other races.[6].

Toni Morrison addresses the issue of providing a very narrow and often false view of Black women in her collection of essays titled *Playing in the Dark.* Morrison asserts that Black characters have very distinct and even repetitive roles in literature. This creates a limited societal view of Black people where their humanity is rarely considered. Morrison asserts that if an author does not see a need for a very particular role to be filled then there is no need for the Black narrative.[7]

Black Girl Magic aims to broaden the outlook of Black women while celebrating Black female excellence. The Black Girl Magic movement is revealing counter-stories of the Black female experience. These counter- stories serve as a steppingstone to dismantle the false narratives of Black women. It brings clarity to the diversified Black female experience while simultaneously uplifting those who are often underappreciated and forgotten.

More importantly, Black Girl Magic shares the stories of Black women through the lens of Black women. This movement allows Black women to be the writers of their own stories. Black women control their own narrative. Black Girl Magic gained momentum as a hashtag on social media but has since grown to be so much more. It is a dynamic movement that empowers Black women and Black girls throughout the nation.

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[3] Gammage, "Representations of Black Women"
[4] Matthews, "Hyper-sexualization of Black"
[5] Gammage, "Representations of Black Women"
[6] Eko, "As a Black Woman"
[7] Morrison, "Playing in the Dark"

The Need for Curriculum that centers Black People and Culture

Currently, the k-12 common core curriculum provides little to no insight into Black culture. The curriculum does not stretch beyond snippets of the transatlantic slave trade and a glamorized glimpse of the civil rights movement. Explaining the importance of cultural studies to those who have become accustomed to the normative of whiteness is a difficult task. To see this change, institutions of learning must advocate for a curriculum that synthesizes individual experiences. Additionally, the curriculum must identify racial and socio-economic issues deeply rooted in our society that are often masked by systematically taught over generalizations.[8]

In higher education, where many professional writers get their footing, there is limited representation of Black faculty. When a significant section of the population is not present in the academic world, then the knowledge produced is exclusionary at its conception. Having both Black course material and Black professors absent from general studies can create a lack of knowledge about Black people and their culture.[9]

Additionally, this exclusion sets a precedent for all facets of society. A precedent is set that it is acceptable to exclude a group's narrative if they do not fit into the white majority; thus, this precedent trickles down into even the smallest facets of society. This exclusion can either be intentional or unintentional but nevertheless there is the same outcome: an exclusion or skewed view of the Black narrative.

Black Girl Magic as a facet of Black Feminism

There have been several arguments posed by white feminist that Black Girl Magic is exclusionary and places an unnecessary emphasis on race.[10] Black Girl Magic is not intended to exclude but is rather a movement to uplift those who are not always positively highlighted. The disconnect between feminist of color and white feminist is not a new concept. The division of feminism based on race has existed for decades. This separation exists because of the different experiences and interactions of each group which are influenced by factors such as race, class, and positionality.

A historic example of this phenomenon is the struggle of understanding between civil rights leader, Ida B. Wells, and women suffragists leader, Frances Willard. Both Wells and Willard were feminist who had great influence over their respective communities. Wells wanted Willard to recognize the problem of lynching in the south. However, Willard asserted that the lynching of Black men was necessary. Willard believed the false claim that Black men were heavy drinkers who were responsible for the rape of white women and should be lynched consequently. Willard's privileged position and racist perspective kept her from understanding the issues that were important to Wells. Willard's unwillingness to assess the issue from Well's standpoint prevented any future collaborations between the two women. A collaboration which had the potential to significantly impact the feminist movement for women of all races.[11]

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[8] Young, "The Struggle and Dream"
[9] Asare, "Why are there so"
[10] BBC, "Why are People Arguing"
[11] Fields, "The Root: How Racism"

The disconnect between feminist factions did not begin or end there. Throughout time, popular feminist pieces excluded the perspective and experiences of feminist of color. There is often little to no recognition of the intersectionality of race and gender. White feminists' position in society does not require them to address race or consider how race might affect how they are perceived in the world. Some white feminist neglect to address these issues simply because the issues do not directly impact them. This idealization is not true for all white feminist; however, historically, this has been the narrative of the majority. Feminists of color must constantly consider their intersectionality as women and as people of color.[12]

The missing perspective of women of color helped to birth Black feminism. Patricia Hill Collins describes Black feminism as "a process of self-conscious struggle that empowers women and men to actualize a humanist vision of community."[13] Collins concludes that Black feminism is composed of four major ideals: self- actualization, dismantling of racist systems, intellectual politicism, and recognition of heritage.[14]

The first ideal suggests Black women must empower themselves through self-definitions that influence positive outlooks of the Black women. The second ideal poses the challenge to constantly work towards dismantling the racist and oppressive systems that exist within western society. The third ideal stresses the importance of using Black intellectualism for political gain and activism. The last ideal recognizes the powerful heritage that Black women share. The Black Girl Magic movement is a manifestation of ideal one. The movement strives to redefine the narrative of how Black women are perceived and acknowledged. It is not exclusionary; rather, it is revolutionary. It is the embodiment of Black feminism.

Instructional Implementation

Unit Logistics

Sequencing

The unit will contain eight lessons and one culminating research project. The lessons included in this unit plan can be taught on a schedule created at discretion of the teacher: consecutively, bi-weekly, monthly, etc.

Lessons are sequenced in a way that reflects the Charlotte Mecklenburg Schools (CMS) middle school math curriculum sequencing. I will teach one lesson from the unit the last Friday of each month: beginning in September and ending in May. The rationale behind this placement is for the unit to not interrupt the pacing of the CMS 6th grade math curriculum. The CMS 6th grade math pacing schedule allows for a few days of optional review at the end of each unit. The end of each unit generally occurs towards the end of the month. I will use one of the optional review days to engage students in Black Girl Mathgic lessons.

[12]Breines, "What's Love Got to"
[13] Collins, "Black Feminist Thought"
[14]Collins, "Black Feminist Thought"

Lesson Components

To maintain consistency throughout the unit, each lesson will contain 5 main components: words of the day, profile reading, student activity, class discussion, and reflection. Some lessons may contain more than the five components, but no lesson will have less than the five components. The word of the day will include a quote, affirmation, excerpt, or video that helps students build math confidence.

The profile reading requires students to read the profile of a Black woman in STEM. The profile highlighted will directly connect to real world lesson. The profile reading allows students to see people who look like them in STEM careers. It is vital for students to see this representation. By seeing this representation, students begin to develop the confidence to pursue a particular career field.

The mini math lesson and activity will connect to real world topics such as: hair, cooking, sports, entrepreneurship, and coding. These activities will show students math is relevant is many facets of their lives. The activity will also allow students to practice skills that increase their math fluency.

Lessons will be followed by a class discussion. The topic of the discussion will be based on the lesson focus, quote of the day, profile heighted, and the real-world connection activities. The discussion is built into each lesson to encourage respectful dialogue between students.

Each lesson will conclude with a reflection. Reflections are important because they help students process what they learned. They also provide insight for the teacher to understand what students gained from the lesson.

Teaching Strategies

Student Centered Learning

Learning should be student driven. The teacher should act as a guide while students provide most of the cognitive lift. As a result, students act as drivers of their educational experience while teachers serve as a supporting navigator. Students feel a deeper responsibility for the work they produce. This approach also allows for students to focus on individualized areas of growth. This in turn allows the teacher to provide students with scaffolding and differentiation to support a variety of student academic needs.

WICOR

WICOR stands for writing, inquiry, collaboration, organization, and reading daily. Wilson STEM Academy incorporates WICOR through our AVID program. Teachers are also required to have students demonstrate at least one WICOR component when they complete learning tasks. This unit will emphasize writing, inquiry, collaboration, and reading.

Students will write their responses to prompts in the *reflection* section of each lesson. Writing allows students to demonstrate their thinking and support their ideas verbally.

Students will demonstrate inquiry in the *discussion* section of lesson. This gives students the opportunity to analyze ideas, clarify their thinking, and build oral communication skills. Students will have opportunities to collaborate during the *activity* section of the lesson. Collaboration requires shared responsibility which helps students develop positive interdependence. This unit will not place a heavy emphasis on organization. However, students will keep all documents for this unit in a specific folder in their virtual notebook organizer in OneNote. Students will read during the *profile reading* section of the lesson. Reading allows students to gain meaning, understanding, and knowledge. This leads to students making connections and interpreting information.

Technology Integration

As a STEM school, teachers must frequently integrate technology into lessons. When properly implemented, technology integration can deepen student learning and enhance their educational experience. The use of technology can also help teachers differentiate their lessons to help support all learning styles. A list of tools used can be found in Appendix 10.

Classroom Lessons and Activities

All handouts for the student activities can be found in the appendix. Additional materials that correspond with the lessons such as google slideshows and electronic copies of the handouts can be found at

Lesson 1	*BGM: Let's talk about Black Girl Magic*
Standards	NA
Student task statements	I can explain Black Girl Magic in my own words.
Key Vocabulary	Black Girl Magic

Time	Lesson Component	Description
8 minutes	Words of the day/opening activity	Students will respond the following prompt: "What do you think Black Girl Magic means?" - Students should post their answers in Jam Board. - Give students 4 minutes to submit their post Spend 4 minutes having a few students share out their definitions. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
5 minutes	Video that introduces today's topic	Play the video for students that explains the term Black Girl Magic. The YouTube video can be found at https://bit.ly/BGMBGM

10 minutes	Profile Reading	To gain a deeper understanding of Black Girl Magic, have students read the online article *Unravelling the Mystery Behind #BlackGirlMagic*. The article can be found at https://bit.ly/bgminto - Students can read independently or have students take turns reading aloud.
15 minutes	Class Discussion	Discuss the following questions whole group: 1. After watching the video and reading the article, has your definition of Black Girl Magic changed? If so, how would you define it. - Allow students to share their responses then state, *BGM is a term and movement coined by CaShawn Thomas that refers to the "beauty, power and resilience of black women."* 2. Why do you think there was a need to create such a movement? In other words, why is it important to celebrate women of color? 3. Have you seen Black Girl Magic in action before? Can you explain what that person did?
25 minutes	Student Activity	Students will work independently to create a digital collage that depicts Black Girl Magic. - Collages may include images, words, or both. - Students should work on their collages for 15 minutes Place students in groups of 4-5. - Students should take turns explaining the meaning of their collage to the group.
5 minutes	Reflection	Students should respond to the following prompt independently: - Write a letter to a younger sibling or cousin explaining what Black Girl Magic means and the significance of the term. Your letter should be at least 4 sentences.

Lesson 2	My Hair, Your Hair, Her Hair, Our Hair is Beautiful. Period: Let's Talk about Hair in the Black Community
Standards	NC.6.G.1
Student task statements	I can find the area of a square. I can find the area of a triangle
Key Vocabulary	Area Square

	Triangle

Time	Lesson Component	Description
7 minutes	Words of the day/opening activity	1. Say to students**,** *Naomi Johnson used her Black Girl Magic to become an educator, writer, and poet. Read the poem written by Naomi Johnson then answer the questions on the Jam Board page***.** 2. Students will read the poem *My Black is Beautiful* by Naomi Johnson. Students will then reflect on poem by answering the following questions on a JamBoard: - What message was the poet trying to convey to the reader? - Why is your black beautiful? Or what makes you a beautiful person? Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
5 minutes	Video that introduces today's topic	Show students a video that briefly describes the history and significance of African American hair. The YouTube video can be found at https://bit.ly/bgmhair2
10 minutes	Profile Reading	Say to students: "*As shared in the video, there was great power and history in Black hair. This stands true today. In fact, Black hair care products are a billion dollar industry. That's right billions with a B. Let's read through some profiles of Black women entrepreneurs who made great power moves in the hair care industry."* - Students should pick one highlighted profile to read independently. Students should highlight key information with a highlighter. - After reading, students should type two things they learned on the Jam Board. Every student's submission should be unique (no repeat submissions). - Students should spend no more than 7 minutes reading the article and typing their posts on Jam Board. - The remaining 3 minutes should be used to share some student responses from the Jam Board. This allows students to learn a

		bit about each profile spotlight even if they did not read the article. - Profile one can be found at https://bit.ly/madamecj (scroll to the section on Madame CJ Walker) - Profile two can be found at https://bit.ly/madamecj (scroll to the section on Annie Malone) - Profile three can be found at https://bit.ly/pricelisa Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
20 minutes	Math Activity	Say to students: *"Now that we have read about some amazing entrepreneurs, let's imagine you are one too!"* - Call on three students to read the directions on the Lesson 1: Student Activity. Students can work independently or in partners on this task. Students will create squares and triangles on a grid. They will then find the area of these shapes. Students will also be challenged to make connections between the formulas of area for triangles and squares. Note: The Lesson 1: Student Activity worksheet can be found in Appendix 2. An electronic version can be found in the google curriculum folder: https://bit.ly/ctibgm2020
15 minutes	Class Discussion	1. Why do some people choose to use the term "good hair?" What does that mean? 2. What if I told you all hair is good hair?" What do you think that means? 3. What did you learn from the video about the power of Black hair? 4. What connections can we make between Black hair, Black hair care, and STEM?
5 minutes	Reflection/ Formative Assessment	Students should answer the following questions independently: 1. How do you find the area of a square? 2. How do you find the area of a triangle? 3. What did you learn about Black hair today? 4. What did you enjoy most about today's class? 5. What questions do you still have?

Lesson 3	*Food for the Soul: Let's talk about food in the Black community*

Standards	NC.6.NS.1
Student task statements	I can solve real- world problems involving division of fractions
Key Vocabulary	Divide Fraction

Time	Lesson Component	Description
7 minutes	Words of the day/opening activity	Say to students: *Harriet Tubman used her Black Girl Magic to become an abolitionist and political activist. Read this quote by Harriet Tubman then answer these questions on our Jam Board*. - Quote: "Always remember you have within you the strength the patience and the passion to reach for the stars" - Questions 1. What does this quote mean to you? 2. How can you apply these words in your own life? Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
5 minutes	Video that introduces today's topic	Students will view a video that briefly explains the history of soul food. The YouTube video can be found at https://bit.ly/bgmsoul Note: the video is also embedded in the google slide located in Lesson 3: Slideshow https://bit.ly/ctibgm2020
10 minutes	Profile Reading	Say to students*: Now that we have learned a little bit about the history of soul food, let's take a look at a woman who is using her Black Girl Magic to make big impacts in the food and restaurant industries.* - Students should explore Chef Babette's website: https://www.chefbabette.com/ - After reading, students should type one things they learned on the JamBoard. - Students should spend no more than 7 minutes exploring the website and typing their posts on JamBoard. - The remaining 3 minutes should be used to share some student responses from the Jam Board. This allows students to learn a

		bit about each profile spotlight even if they did not read the article. Note: If technology is unavailable for students, print out Chef Babette's biography for students to read. Chef Babette's biography can be found at https://bit.ly/chefbabette
20 minutes	Math Activity	Students can work independently or in pairs to complete this activity. Students will use fractional division to yield recipes for different serving sizes. Student supports: Post three division of fraction examples for students to refer to while completing their activity. Each example should show a different method: keep change flip, butterfly method, and fraction models. If using the slideshow from the google folder, this support has already been made for you (slide 6 of Lesson 3: Slideshow). Activity Goals: Reinforce skills needed to divide fractions. Additionally, the activity helps student see how math is used by everyday people and not just in the math classroom. Note: The activity worksheet can be found in Appendix 3 of this document. It can also be found in the google curriculum folder: https://bit.ly/ctibgm2020
15 minutes	Class Discussion	1. What did you learn about the history of soul food today? 2. We learned about Babette Davis's vegan soul food restaurant. Why do you think it is important to make healthy food choices? 3. We used math to help us create recipes. Can you think of other ways me use math when making food? Are there other everyday activities that require us to use math?
5 minutes	Reflection	Students should answer the following questions independently: 1. Pick one method for dividing fractions. Explain how you would solve 3/4 divided by 1/3 2. Today we completed an activity where we needed to use math for a real- world scenario. Name two other ways we use math in everyday life.

Lesson 4	*She shoots, she scores: Let's talk about Black women is sports.*
Standards	NC.6.RP.1B NC.6.RP.4
Student task statements	I can Model a ratio relationship using a variety of representations

	I can find equivalent ratios I can find a percent of a quantity as a ratio per 100
Key Vocabulary	Ratio Equivalent Percentage
Materials Needed	Blank sheets of paper 10- 15 buckets or boxes

Time	Lesson Component	Description
8 minutes	Words of the day/opening activity	Say to students: *Simone Biles is an American gymnast who used her Black Girl Magic to win several Olympic medals. Read the tweet by Simone Biles then answer the discussion questions on our Jam Board.* - Quote*: "I'd rather regret the risks that didn't work out than the chances I didn't take at all."* - Questions 1. What is the message of this quote? 2. What do you think Simone means by the words "regret, risks, and chances? Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
5 minutes	Video that introduces today's topic	Have students view a video that details some of the struggles Black female athletes face. Start the video at minute 16 and play until the end. The ESPN video can be found at https://bit.ly/espnbgm Note: the video is also embedded in the google slide located in Lesson 3: Slideshow https://bit.ly/ctibgm2020
10 minutes	Profile Reading	Say to students: *Now that we have learned about some of the struggles Black female athletes face, let's read more about some particular athletes' stories.* - Students should visit the website: https://bit.ly/bgmsports and pick one person to read more about by selecting their name under contents. - On the Jam Board, students should share who they read about and two things you learned about them.

		- Students should spend no more than 7 minutes reading the article and typing their posts on JamBoard. - The remaining 3 minutes should be used to share some student responses from the JamBoard. This allows students to learn a bit about each profile spotlight even if they did not read the article. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom. Paper copies of the articles can be printed from https://bit.ly/bgmsports
20 minutes	Math Activity	- Students will work in pairs to complete this activity. - Each student should be given 6 pieces of paper. - Students need to make 6 paper balls with their sheets of paper. - Students should take turns trying to throw each of their paper balls in the bucket. - Partner number one will go first. Then partner number two. If a ball makes it into the bucket the student should say "bucket!" - Students record whether their paper ball makes it in the bucket or not. - Students will use this information to answer questions about ratios, equivalent ratios, and percentages. Activity Goals: The activity helps student build ratio reasoning skills. Additionally, students see another capacity in which math is useful. Student supports: Post the following information of the board. - A ratio is the comparison of two values - We can represent ratios in different forms such as… 1 to 2 1:2 ½ - A percentage is a comparison of a number to 100 - We can find the percentage of any number by using the formula part/whole=%/100 If using the slideshow from the google folder, this support has already been made for you (slide 6 of Lesson 4: Slideshow).

		Note: A printable version of the activity can be found in Appendix 4 of this document. The activity worksheet can be found in the Lesson 4 folder of the curriculum google folder: https://bit.ly/ctibgm2020
15 minutes	Class Discussion	1. Why is it important for female athletes to earn the same pay as male athletes? 2. Why are female athlete being underpaid? Why are they not highlighted as frequently as their male counterparts? 3. What added pressures do Black female athletes face? 4. Do Black women who are not athletes face some of these same pressures? 5. What can we do as a society or individually to support Black women to alleviate these pressures?
5 minutes	Reflection	Students should answer the following questions independently: 1. Explain how you could find 60% of 40. 2. How could the questions we answered in our Buckets activity be applied in a real sports game? 3. What did you learn about Black women in sports today?

Lesson 5	*Boss Girl Magic: Let's Talk About Entrepreneurship and Black Owned Business*
Standards	NC.6.NS.3
Student task statements	I can add, subtract, multiply, and divide with decimals.
Key Vocabulary	Decimal Entrepreneurship
Materials Needed	Numbered popsicle sticks (one stick per student) Note: All handouts for this lesson can be found in the appendix. All supplemental materials such as JamBoards, profile readings, and slide show presentations can be found in the linked google folder.

Time	Lesson Component	Description
8 minutes		Have students view a video that discusses the importance of launching and supporting black businesses. The YouTube video can be found at https://bit.ly/bizzbgm

		Note: the video is also embedded in the google slide located in Lesson 5: Slideshow (slide 2): https://bit.ly/ctibgm2020
8 minutes	Words of the day/opening activity	Say to students: *Marian Wright Elderman was a Yale graduate who exemplified her Black Girl Magic through activism for children's rights. Mariam once said, "We must not, in trying to think about how we can make a big difference, ignore the small daily differences we can make which, over time, add up to big differences that we often cannot foresee."* Students should write their response to the following questions on their Jam Board: 1. What does this quote mean? 2. What could this quote mean to someone starting their own business? 3. How can the message of this quote be applied in a math classroom? Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
10 minutes	Profile Reading	Each student should have a popsicle stick with a number 1-33 written on it. Then give students the following directions: - Today we are putting the spotlight on Black female entrepreneurs - Go to the website https://bit.ly/bossbgm - Look at the number on your popsicle stick. That is your assigned number. Scroll down to the number you were assigned - Read the article next to your assigned number - Write three things the article talks about on our Jam Board Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom. Paper copies of the articles can be printed from https://bit.ly/bossbgm
20 minutes	Math Activity	Students can work independently, in pairs, or in groups. Students should pick three items on the worksheet and write down the prices of

		these items. Students will be tasked with adding, subtracting, multiply, and dividing the prices of the items. Activity Goals: Students gain fluency in decimal computation. Students see how decimal computation can be useful in real-word scenarios. Students are exposed to black businesses. Student supports: Post basic decimal computation rules. If using the slideshow from the google folder, this support has already been made for you (slide 6 of Lesson 5: Slideshow). Note: A printable version of the activity can be found in Appendix 5 of this document. The activity worksheet can also be found in the Lesson 4 folder of the curriculum google folder: https://bit.ly/ctibgm2020
15 minutes	Class Discussion	1. What does it mean to support Black businesses? Why is it important? 2. What does it mean to create Black businesses? Why is it important? 3. What kind of math do you think is involved in opening a business? What about in supporting a business? 4. What kind of businesses did you read about today? How were they impactful?
5 minutes	Reflection	Students should answer the following questions independently: 1. How did you use math to complete a real-world activity today? 2. In what situations do you think you could use this type of math again? 3. What was your biggest takeaway from today's lesson?

Lesson 6	Black Girls Unite: Let's talk about the power of unity
Standards	NC.6.EE.1 NC.6.EE.7
Student task statements	I can evaluate numerical expressions I can write and solve real-world mathematical problems by solving equations I can reason about inequalities
Key Vocabulary	Numerical Expressions PEMDAS Equation Inequality

Time	Lesson Component	Description
10 minutes	Article Reading	-The article reading can be found at https://bit.ly/bgmunity -As a class, students should take turns reading paragraphs from the article aloud.
10 minutes	Profile Spotlight	Have students view a video about Maggie Lena Walker. The video can be found at https://bit.ly/maggielw Ask students to keep this quote in mind by Maggie Lena Walker while viewing the video: "We can do anything as soon as we learn the lesson of unity."
15 minutes	Class Discussion	-Display the following quote on the board: "We can do anything as soon as we learn the lesson of unity." -Then discuss the following questions whole group: 1. After watching the video, what do you think this quote means? 2. How did Maggie Lena Walker unite with others? What were they able to accomplish? 3. Why is unity important? Why is it particularly important for women of color to unite?
20 minutes	Math Activity	Students should work in groups of three or more to complete a Who Dunnit activity. Students are tasked with solving clues to figure out a mystery supply donor. Algebraic questions serve as the clues. Activity Goals:. Students practice solving algebraic equations. Students experience unity with others. Students see the value of working with others. Note: A printable version of the activity can be found in Appendix 6 of this document. The activity worksheet can also be found in the Lesson 4 folder of the curriculum google folder: https://bit.ly/ctibgm2020
5 minutes	Reflection	Students should respond to the following questions independently: 1. Today you work in groups to complete an activity. Why is it sometimes beneficial to work in groups instead of by yourself? 2. What can make working in groups difficult? 3. Why is it important to push through these difficulties and work with others?

Lesson 7	*Science, Technology, Engineering, and Math: Let's talk about STEM*
Standards	NC.6.SP.4

Student task statements	I can interpret data I can create graphs to display data
Key Vocabulary	STEM Data Histogram
Materials Needed	Popsicle sticks

Time	Lesson Component	Description
8 minutes	Words of the day/opening activity	Say to students: *Mae Jemison exemplified her Black Girl Magic working as a engineer, physician, and NASA astronaut. Mae once said, "Never be limited by other people's limited imaginations." On the Jam Board, explain what this quote means to you.* Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
3 minutes	Video that introduces today's topic	Have students view a video that explains the meaning of STEM and it's importance. The YouTube video can be found at https://bit.ly/bgmstem Note: the video is also embedded in the google slide located in Lesson 3: Slideshow https://bit.ly/ctibgm2020
15 minutes	Profile Reading	Say to students: *The names listed below are Black women that made great leaps and bounds in the STEM field. Find the person next to your assigned number. Research their significant contribution to the STEM field. Post your findings in the Jam Board.* - Each student should be a popsicle stick with a number 1- 20. - Students should find the person that corresponds with their popsicle stick number. - Students should briefly research what significant contributions that person made in the STEM field. Students should post their answers on the Jam Board. - Students should spend no more than 10 minutes researching and recording their findings. - The remaining 5 minutes should be used to complete a gallery walk where they view other student's responses. This allows students to learn about other profiles they did not research.

		Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
20 minutes	Math Activity	- Students can work on this activity independently or in pairs. - Students will analyze a graph and draw conclusions. - Students will use data to create a histogram. Activity Goals: Students practice interpreting and displaying data. Students also learn significant demographics about the STEM field. Note: A printable version of the activity can be found in Appendix 7 of this document. The activity worksheet can be found in the Lesson 7 folder of the curriculum google folder: https://bit.ly/ctibgm2020
15 minutes	Class Discussion	1. Why is STEM important? 2. What did you notice about the data in today's activity? 3. Why do you think it is important for more women of color to work in the STEM field? 4. What can we do as individuals or as a society to help increase the number of women of color in STEM?
5 minutes	Reflection	Students should answer the following questions: 1. Explain the difference between a dot plot, histogram, and box plot? 2. List at least three things you learned about STEM today?

Lesson 8	*Black Girls Code: Let's Talk About the Power of Code*
Standards	NC.6.NS.6B
Student task statements	I can identify points on a graph. I can find the distance between two points. I can reflect points across the x-axis and y-axis.
Key Vocabulary	Coordinate Plane Reflection X-axis Y-axis

Time	Lesson Component	Description

8 minutes	Words of the day/opening activity	Say to students: *Dr. Ayanna Howard works in robotics and serves as the chair for several technology programs. She believes, women have a unique power of being able to look at the world's problems and discover solutions that transform lives and make the world a better place" Answer the following questions about today's quote on your Jam Board:* 1. What is the meaning of this quote? 2. How does this relate to Black Girl Magic? 3. How can the message of this quote be applied in math class? Students should spend 5 minutes writing their answers. An additional three minutes should be spent reading a few student answers aloud. Alternatively, students can use the additional 3 minutes to complete a gallery walk where they view other student's responses. Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
3 minutes	Video that introduces today's topic	Have students view a video that explains the power of code. The YouTube video can be found at https://bit.ly/codebgm Note: the video is also embedded in the google slide located in Lesson 8: Slideshow https://bit.ly/ctibgm2020
15 minutes	Profile Reading	Students will read one article to gain a deeper understanding of the importance of women of color learning to code. Have students take turns reading the article aloud. The article can be found at this link: https://bit.ly/bgmcode Note: If technology is not available, have students write their responses on a sticky note. Sticky notes can be placed on a blank piece of chart paper displayed at the front of the classroom.
20 minutes	Math Activity	- Students can work on this activity independently or in pairs. - Students are acting as video game programmers. They must identify points on a graph, find distances between points, and make reflections. - Activity Goals: Students understand how to find and reflect points on a coordinate plane. Students see how the math they are learning now can help them in a STEM career later. Note: A printable version of the activity can be found in Appendix 8 of this document. The activity worksheet can be found in the Lesson 7 folder of the curriculum google folder: https://bit.ly/ctibgm2020

15 minutes	Class Discussion	1. What is coding and why is it so useful? 2. Why is it beneficial to learn how to code? 3. Why is it important to increase the number of women of color who code?
5 minutes	Reflection	Students should answer the following questions independently: 1. How would you reflect the point (2,-5) across the x-axis? 2. How do programmers use coordinate planes to help create video games? 3. In what ways has coding impacted our society?

Final Project: At the end of the unit students will complete a research project. Each student will choose a Black woman who has worked in the STEM field that they would like to research. Students will be provided with questions to guide their research. Students may choose from three options to present their research: 1 page paper, google slides presentation, or flip-grid video. A handout detailing the project can be found in Appendix 9.

Appendix 1: Teaching Standards

The following 6th Grade Mathematics North Carolina Standard Course of Study standards will be utilized throughout this unit plan:

NC.6.G.1 Find the area of triangles by composing rectangles. Find the area of rectangles by decomposing into right triangles.

NC.6.NS.1 Use visual models or common denominators to solve real-world and mathematical problems involving division of fractions

NC.6.RP.1B Demonstrate knowledge of ratio relationships by using a variety of representations

NC.6.RP.4 Use ratio reasoning to solve real-world percentage problems

NC.6.NS.3 Use standard algorithm for addition, subtraction, multiplication, and division of decimals

NC.6.EE.1 Evaluate numerical expressions

NC.6.EE.7 Solve real-world equations of the form a+ b = c

NC.6.SP.4 Use dot plots, box plots, and histograms to represent data

NC.6.NS.6B Locate and plot ordered on a coordinate plane.

Appendix 2: Lesson 2 Student Activity

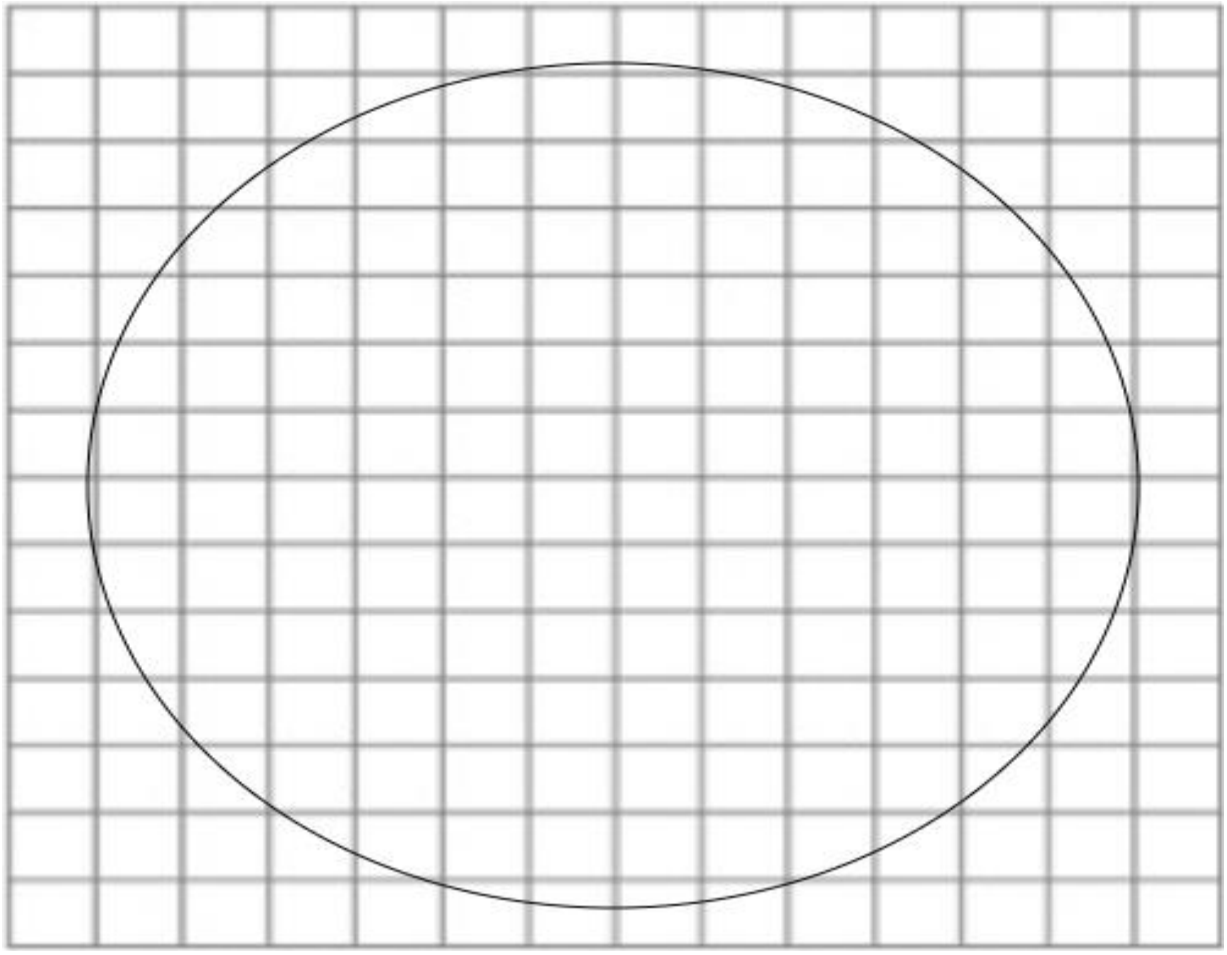
LaBlack Girl Magicc Hair Salon

Imagine you are the owner of LaBlack Girl Magicc Hair Salon. One of your hairstylists is sick and needs the day off. As a business owner, it is your responsibility to step up and take their clients (customers) for the day.

You now have 2 clients coming in today to get box braids. Box braids are a protective hairstyle that is particularly popular in Black hair care. Extensions are often used to help prolong the style's longevity (the amount of time the style can stay in the head). Box braids are named after their boxy hair divisions.

Your first client would like box braids with square parts. The usage of parts is how you will create a section for each braid. You are using the grid on page 2 to plan out your parting space. Imagine the circle on page 2 is your client's head.

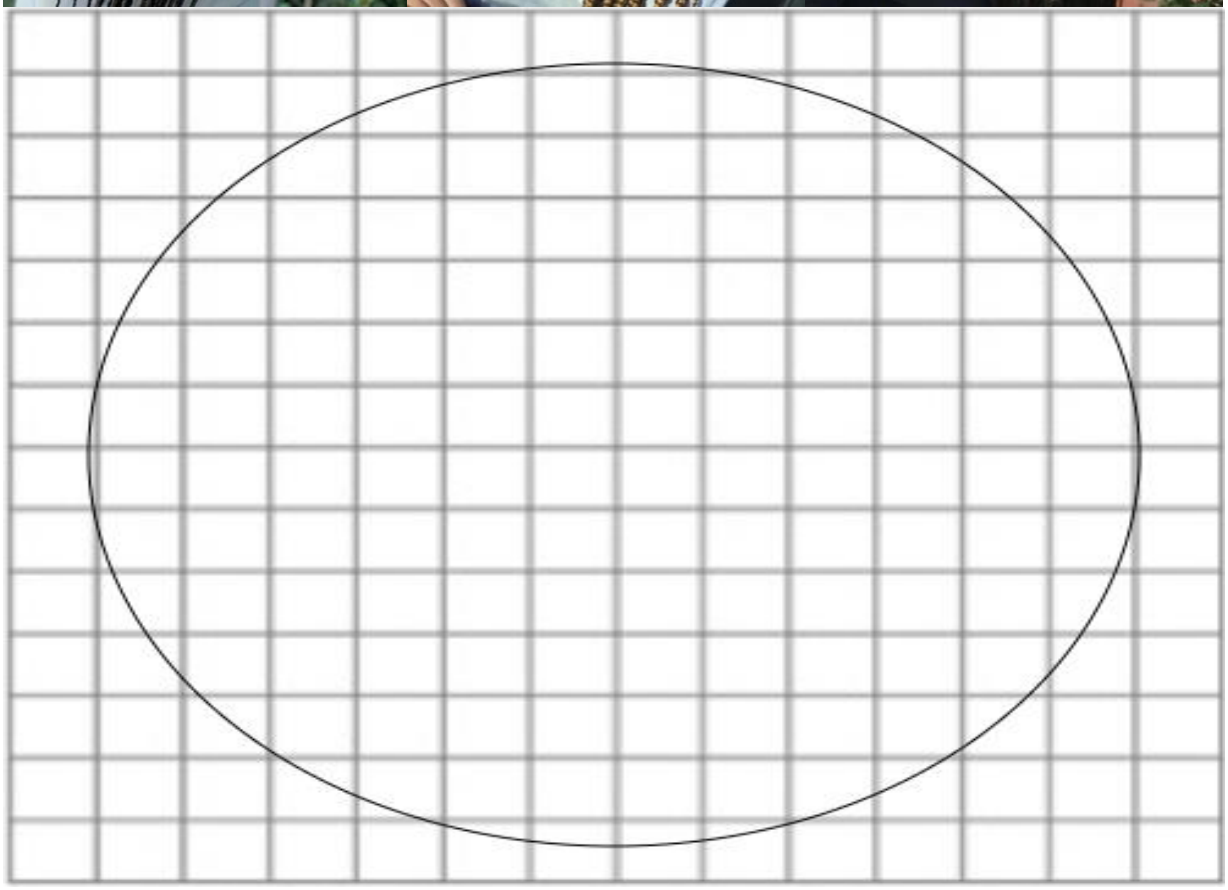
1. Draw square parts in the circle on the grid.
2. Find the area of each part you created.
3. Explain the steps you took to find the area of each part.
4. What is another way you could have found the area of each part?



Your next client would like box braids as well. However, they would like triangle parts. The circle below represents your space for parting. Complete the following tasks.

1. Make triangle parts for your client on the grid.
2. Find the area of each of these triangle parts.

3. Explain the steps you took to find the area of each part.
4. Look back at the planning grid for your first client's hairstyle (page 2). How could you easily turn your square parts into triangle parts? How does this relate to the formula for area of a square and area of a triangle?



Appendix 3: Lesson 3 Student Activity

You are the owner of *House of Soul*.
You serve healthy soul food alternatives.
Your motto is: "Same great taste, made a healthier way."

Your most popular dish is your vegan macaroni and cheese. Below are the ingredients used in your dish.

Dish	Vegan Macaroni
Servings	8 servings- Feeds 8 people
Ingredients	• 18 oz elbow macconi • 1/2 cup Vegan Butter 6 Tbsp All Purpose Flour • 42 oz Coconut Milk • 1 cup Vegetable Stock • 3 Tbsp Dijon Mustard • 1 cup Nutritional Yeast • 3 tsp Onion Powder • 3 tsp Garlic Powder • 1 and 1/2 tsp Smoked Paprika • 1 and 1/2 tsp Salt • 1 and 1/2 tsp Ground Black Pepper

Now answer the following questions about your recipe. SHOW YOUR WORK.

1. If 4 people order your macaroni, how much of each ingredient do you need to make sure the recipe tastes the same.

2. If 2 people order your macaroni, how much of each ingredient do you need to make sure the recipe tastes the same.

Appendix 4: Lesson 4 Student Activity

You and your partner are going to play a game of Buckets!

You each have 6 pieces of paper. Make a paper ball with each piece of paper. This means each of you should have 6 paper balls.

Take turns trying to throw your paper ball in the bucket. Partner number one will go first. Then partner number two. If your ball makes it into the bucket say “bucket!”

Write down whether your paper makes it in the bucket or not. Record your data below.

Use your data to answer the questions on the next page with your partner.

	Partner 1	Partner 2
Ball 1	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No
Ball 2	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No
Ball 3	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No
Ball 4	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No
Ball 5	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No
Ball 6	Did you make a “Bucket”? Yes No	Did you make a “Bucket”? Yes No

Use your data to answer the questions below.

1. How many buckets did partner ONE make?

1. How many buckets did partner TWO make?

1. What is the ratio of attempts to buckets for partner ONE? Write an equivalent ratio.

1. What is the ratio of attempts to buckets for partner TWO? Write an equivalent ratio.

1. What is the ratio of buckets made by partner one to buckets made by partner two?

1. What is the ratio of **total** attempts to **total** buckets? Write the ratio in 3 different forms.

1. What percentage of partner one's paper balls made it into the bucket?

1. What percentage of partner two's paper balls made it into the bucket?

Appendix 5: Lesson 5 Student Activity[15][16]

[15] Aliedra Allen, "Apparel"

[16] Aliedra, Allen "Our Goals."

PIE (purpose in everything) Movement is an LLC owned by entrepreneur Aliedra Allen. CLICK HE[1]RE to read about PIE's mission. You are doing some PIE Movement's online store for Black Friday. PIE is having a blow out sale and you cannot pass on these awesome deals and the opportunity to support a Black female owned business. Below are some products that are available. Look through the products. Then answer the questions on the next page.

 Price: $18.82	 Price: $9.81	 Price: $11.27
 Price: $8.64	 Price: 12.22	 Price: $13.43

1. Pick 3 items you would like to buy. Write down the letter of the product you would like and it's price.

Product	Price

2. What is the total of your 3 items?

3. You originally had a $40 budget for your online shopping. Did you go over or under your budget? By how much?

4. Two of your friends decide to help you pay for the items. How much would you each need to pay if you split the price evenly amongst all of you?

5. You decided you want two of everything in your shopping cart. What is your new total?

Appendix 6: Lesson 6 Student Activity

While the teachers were on their planning period, a mystery person dropped off a sizable donation of school supplies and snacks to the school this morning. This was a very kind act and the students want to send the mystery donator a thank you card.

Today you are going to act as a detective to find out WHO DUNNIT! Detectives often work in teams to solve a mystery quicker.

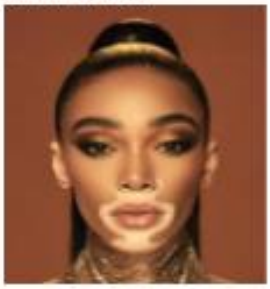
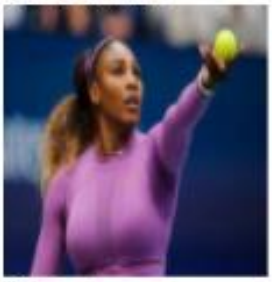
Work together with your team of detectives. The math problems will give you the clues you need to find the mystery donator. Get started the clock is ticking!

There are some people who witnessed the mystery donor drive away. They each witnessed a detail about the car they were driving but they did not see the

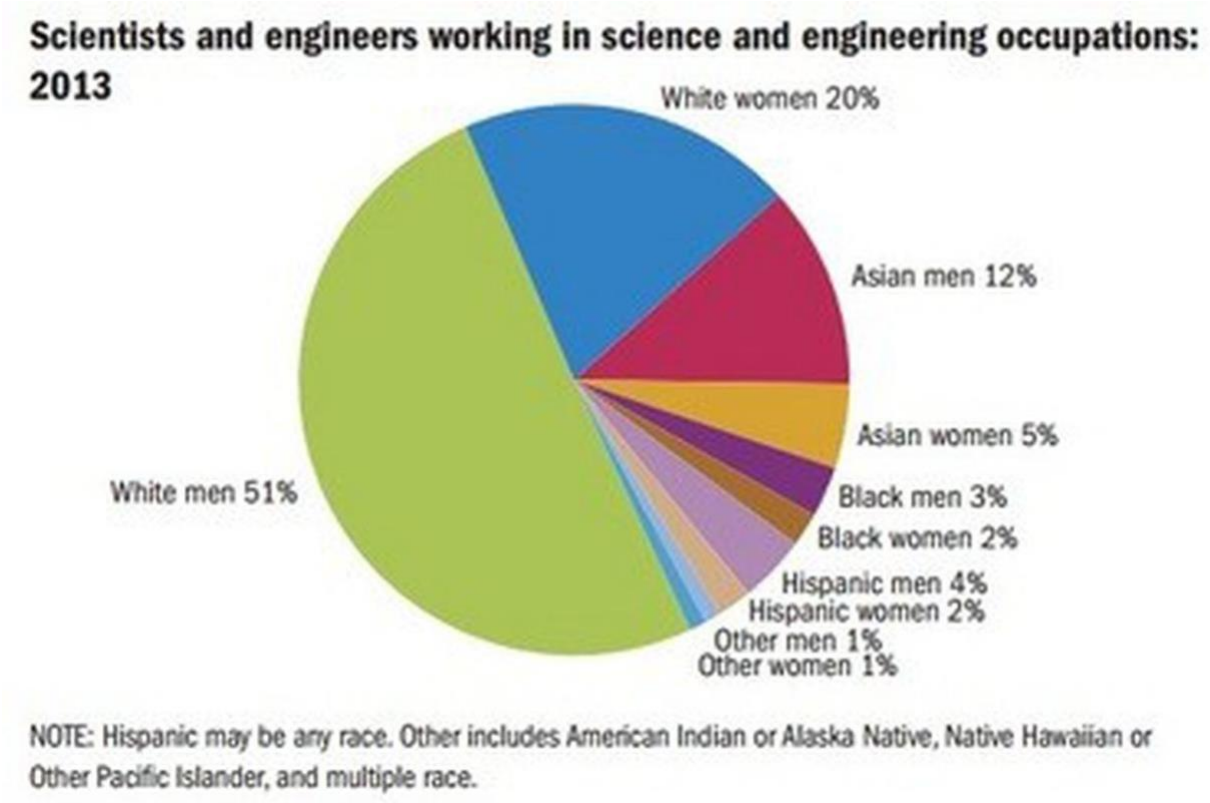
mystery donor's face. The witnesses will each give you a clue to help you solve the mystery but you must solve their math problem first!

Clue #1: Car Type	Clue #2: Car Color	Clue #3: License #	Clue #4: Car speed
			
Oprah is simplifying the expression $3 \times (3+7) - 4^2 \div 2$ Which answer is equivalent to the expression? • 24= Toyota • 16= Lexus • 32= Jeep	Beyonce and Jay-Z have 84 photos of their family vacation. Beyonce has three times as many photos on her phone as Jay-Z. How many photos does Beyonce have? • 252 photos= blue • 42 photos = red • 21 photos= black • 63 photos=white	Former first lady Michelle Obama wrote an equation to see how many books can fit on her bookshelf where b represents the total number of books. $b/\ 8=12$ • Divide both sides by 12. License Plate # J15TL0 • Multiply both sides by 12. = License Plate #45U988 • Multiply both sides by 8. License Plate # 718YT5 • Divide both sides by 8 License Plate # KY34TQ	Clue #4: Vice President Kamala Harris is out shopping for a bike. She accidentally left her debit card at the white house and only has cash. Kamala has $119 cash which is $35 less than what she needs to buy the bike. Which equation or inequality represents the cost of the bike (b)? • $119 - 35 = b$ 25mi/ hr • $119 > 35b$ 35 mi/hr • $119 + 35 = b$ 40 mi/hr • $119 < b + 35$ 50 mi/hr

Who is the mystery donor???????

Zendaya  Car Type:Jeep Car Color: red License Plate #: 45U988 Speed: 35 mi/hr	Rihanna  Car Type:Toyota Car Color: blue License Plate #: 45U988 Speed: 50 mi/hr	Issa Rae  Car Type:Toyota Car Color: red License Plate #: J15TL0 Speed: 35mi/ hr	Marsai Martin  Car Type:Lexus Car Color: blue License Plate #:45U988 Speed: 25 mi/hr
Winnie Harlow  Car Type:Toyota Car Color: blue License Plate #: J15TL0 Speed: 25 mi/hr	Taraji P. Henson  Car Type:Lexus Car Color: White License Plate #: J15TL0 Speed: 50 mi/hr	Megan Markle  Car Type: Toyota Car Color: black License Plate #: 718YT5 Speed: 50 mi/hr	Serena Williams  Car Type:Lexus Car Color: white License Plate #: J15TL0 Speed: 40 mi/ hr
Nicki Minaj  Car Type:Lexus Car Color: white License Plate #: 718YT5 Speed: 50 mi/hr	KeKe Palmer  Car Type:Jeep Car Color: red License Plate #: J15TL0 Speed: 25 mi/hr	Yara Shahidi  Car Type:Jeep Car Color: black License Plate #: KY34TO	Lizzo  Car Type:Lexus Car Color: blue License Plate #: 718YT5 Speed: 50 mi/hr

Appendix 7: Lesson 7 Student Activity



[17]

1. What is this graph showing?

1. What do the categories represent?

1. What conclusions can you draw from this data? What trends do you see.

1. Use this data to create a histogram.

2. Use this data to create a dot plot.

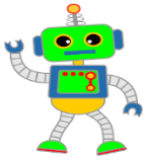
[17] Blackmer, Jane. "Women in STEM"

Appendix 8: Lesson 8 Student Activity

Video game creators use coding and coordinate planes to create virtual worlds.

Today you are going to look at the beginning stages of the new video game called *Cynthia's Big Adventure.* The game is centered around a character named Cynthia. Cynthia is a middle school student who is also a secret spy. Each day after school, Cynthia must complete her secret spy tasks. Cynthia must complete her tasks before it's time to go home for dinner time. While completing these tasks Cynthia must avoid or defeat rogue robots who are trying stop Cynthia from completing her tasks.

Below is a coordinate plane with several objects inside of it. The coordinate plane serves as a virtual world. The numbers on the coordinate plane help us identify particular locations within the game. The items on the plane represent characters and places within the game. **Answer the questions on the next page to help finish the creating the code for the game.**

Key	
Cynthia	
Robots	
Home	
Task 1	
Task 2	

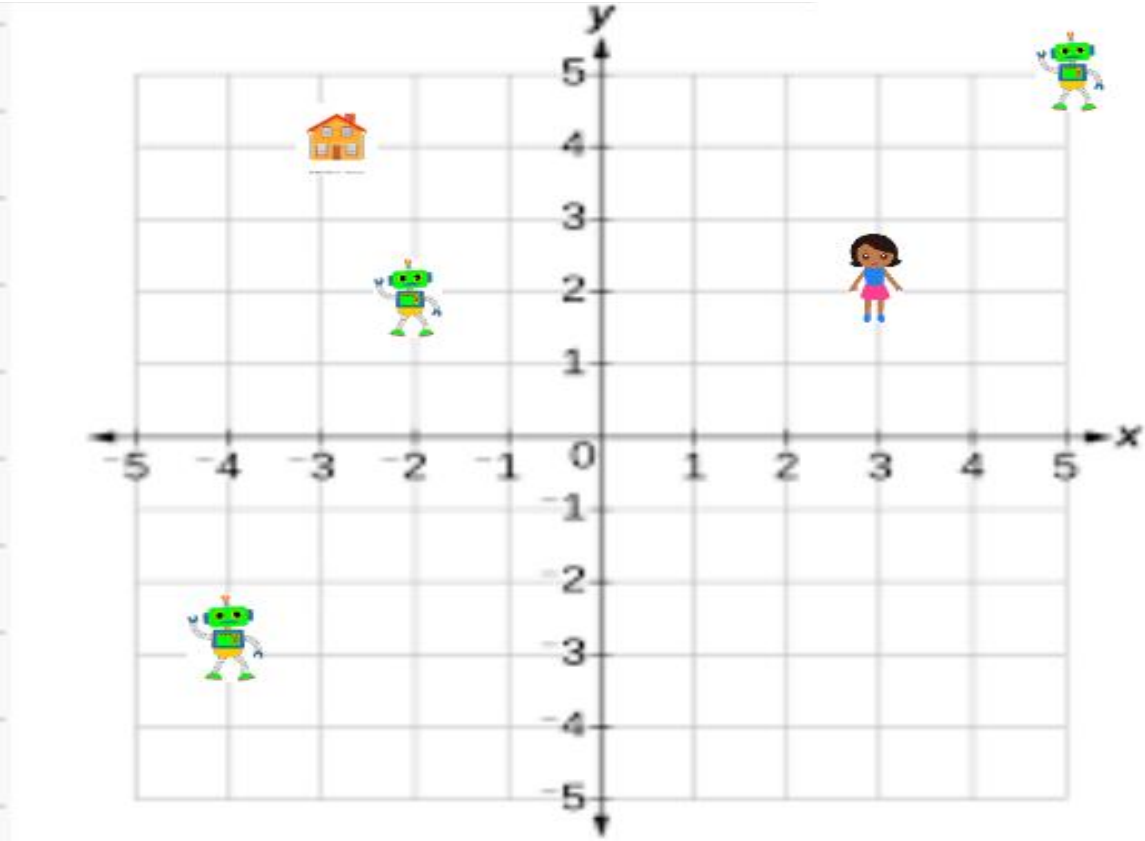
1. Where is Cynthia currently located (coordinate)?

2. While completing her tasks, Cynthia needs to avoid any visible robots. What locations on the grid should she avoid?

3. Cynthia needs to reflect across the x- axis to complete her first task of the day. Write the coordinates that represent this reflection. Then draw a circle on the grid that represents this location.

4. To complete the next task, Cynthia must leave the circle and reflect across the y-axis. Write the coordinates that represent this reflection. Then draw a triangle on the grid that represents this location.

5. It is almost dinner time and Cynthia needs to get home. Write directions for Cynthia so she can find her way home from her current location.



Appendix 9: Final Project Instructions Hand Out

1st: Choose a Black woman who has worked in the STEM field that you would like to research. Below is a list of some Black women who made amazing strides in the STEM world. You may choose one of them or someone who is not listed.

1. SusanMcKinney-Steward 2. Rebecca Lee Crumpler 3. Mary Eliza Mahoney 4. Sarah Boone 5. Lydia O. Newman 6. Madame C.J. Walker 7. May Edward Chinn	8. Dorothy McClendon 9. Mabel K. Staupers 10. Jewel Plummer Cobb 11. Bessie Blount 12. Jocelyn Elders 13. Jane Cooke Wright 14. Alexa Canady	15.. Roger Arliner Young 16. Helen Octavia Dickens 17. Dorothy Lavinia Brown 18. Patricia Bath 19. Dale Emeagwali 20. Ruth Ella Moore 21. Mae Jemison

2nd: Choose how you would like to turn in your research.

Option 1: Type a paper at least 1 page long. Then record a flip-grid video of yourself explaining what you found in your research. OR Use screencast-o-matic.com to present your paper and read it aloud. Video should be between 3-6 minutes long	Option 2: Create a google slides presentation. Then use screencast-o-matic.com to present your google slides. Viewers will be able to see your powerpoint and hear your explanations. Video should be between 3-6 minutes long	Option 3: Create a poster with all of the necessary information. Then use flip-grid to record yourself explaining the information on your poster. Be sure your poster can be seen in the video. Video should be between 3-6 minutes long

3rd: Your research should include the answers to the following questions:

Who are you researching? When and where were they born? What specific STEM field are they in? What do people do in this field? What were some of their accomplishments in this field?	How do you think math helped them in their field? How did they show their Black Girl Magic? What is STEM and why is it important? What is Black Girl Magic and why is it important?

Appendix 10: Materials List

Electronic device such as an I-Pad or computer: As a STEM school, Wilson encourages frequent use of technology in the classroom. Therefore, many of the activities in this unit plan require students to read articles online and post on digital discussion boards. If technology is unavailable for your students, modifications can be made to the lesson. Articles can be printed for student reading. Additionally, students can post their responses to questions on sticky notes. The sticky notes can then be posted on an anchor chart paper at the front of the classroom.

Google Slides: A google slides presentation has been created to correspond with each lesson within the unit. Lessons can be taught with or without the slideshow. Presentations can be accessed at: https://bit.ly/ctibgm2020

Jam Board: Jam Board is a google extension that allows students to collaborate on a piece of work. For this unit, Jam Board will as a discussion board platform for students.

Flipgrid: Students will have the option to create a flip-grid video for their final project. Flipgrid allows students to create and post videos. Teachers and peers can respond to video with a comment or with a reply video.

Screencast-O-Matic: Students will have the option to use Screencast-O-Matic for their final project. Screencast-O-Matic allows students to screen record while providing a voice over. This is a good option for students who would like to present their research through a slideshow. They are able to record a video of their slideshow while providing commentary.

Popsicle sticks: Numbered popsicle sticks are need for lessons 5 and 7. The numbers on the stick will direct students to which profile they are reading. Popsicle sticks can also be used to group students together for classroom activities.

Paper: Each student will need 6 pieced of paper for the student activity in lesson 4. Students will create 1 ball per sheet of paper.

Buckets, baskets, or boxes: In lesson 4, students will work in pairs to throw papers balls in a bucket. A bucket or a similar mechanism should be provided for each pair.

Anchor chart paper and sticky notes: If technology is unavailable for students, allow students to write their responses to questions on a sticky note. The sticky notes can be placed on an anchor chart at the front of the classroom.

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