



## Course Syllabus

| Franklin High School   |  | 2020-2021 |
|--|--|-----------|
| <b>Course Overview</b>   |  |           |
| <b>NOTE:</b> For core classes, all elements of this section (except for name and contact information) are the same.  |  |           |
| Course Title: Algebra $\frac{3}{4}$  |  |           |
| Instructor Name: Dr. Marla Baber   | Contact Info: <a href="mailto:mbaber@pps.net">mbaber@pps.net</a> |           |
| Grade Level(s): 9-12th   |  |           |
| Credit Type: (i.e. "science", "elective") Mathematics  | # of credits per semester: 1                                     |           |
| Prerequisites (if applicable): Algebra $\frac{1}{2}$ , Geometry  |  |           |
| <b>General Course Description:</b><br>Our math Algebra $\frac{3}{4}$ program uses multiple resources to best help students gain understanding of the Common Core State Standards in high school Algebra & Functions. They include <i>Illustrative Mathematics</i> , <i>Mathematics Assessment Project</i> , <i>Desmos</i> , and <i>Khan Academy</i> to name a few. Students will experience mathematics through explorations and practice. The area of study is mainly Algebra with connections to Geometry and Statistics and Probability through Problem Solving. We will incorporate Organizational and Communication Skills through the Common Core State Standards Mathematical Practices.  |  |           |
| <b>Prioritized National/State Standards:</b><br><b>Module 0: Being a mathematician</b><br>Becoming a confident learner and doer of mathematics begins first with believing we are capable, that mistakes are essential to developing depth of understanding, and that most often our highest-level work happens through collaboration with others.<br><b>Module 1: Equations &amp; Inequalities</b><br>Create equations and inequalities with one variable.<br>Create equations with two or more variables.<br><b>Module 2: Parent Functions &amp; Transformations</b><br>Use the set of transformations (a, h, and k) by applying to each parent function to create its family of functions.<br>Graph functions by translating the parent graphs horizontally (h) and vertically (k) and dilating the parent graph by a factor of a.<br>Explain the similarities between domains of parent graphs (linear, cubic, quadratic and absolute value).<br><b>Module 3: Inverse Functions</b><br>Define an inverse function and know their graphs.<br>Solve inverse functions algebraically.<br><b>Module 4: Log &amp; Exponential Functions</b><br>Convert an exponent to a logarithm and vice versa. Check your work using technology.<br>Interpret exponential and logarithmic functions to show their relationship to one another.<br><b>Module 5: Complex Numbers</b><br>Applying properties of real numbers to situations involving complex numbers.<br>Perform arithmetic operations with complex numbers.<br>Solve quadratic equations with real coefficients that have complex solutions.<br><b>Module 6: Polynomials</b><br>Use the idea that polynomials can be manipulated in much the same way as numbers.<br>Understand the relationship between zeros and factors of polynomials.<br>Make connections between the zeros, the x - intercepts, and the factors of a function within its graph.<br><b>Module 7: Rational Expressions</b><br>Add, subtract, multiply, and divide rational expressions (with unlike denominators, if time).<br><b>Module 8: Trig Functions &amp; Unit Circle</b><br>Extend the understanding of trigonometric functions using the unit circle in degrees and radians.<br>Periodic functions explain differences in amplitude, midlines, and frequencies. |  |           |



Interpret, model, and graph periodic phenomena with trigonometric function.

**Module 9: Statistics**

Use mean and standard deviation of a data set to fit it to a normal distribution to estimate percentages and the area under the curve.

**Course Details**

*Learning Expectations*

**Materials/Texts:**

Math Journal, Canvas, Zoom, Khan Academy & Desmos

**Course Content and Schedule:**

We are using a new model of teaching in PPS this year. We are embarking on an adventure in online learning this year. I will be using two platforms this year, **Canvas & Zoom**.

**Canvas** is a learning management system that allows me to post all work and resources in one place. This is where students need to go during their **asynchronous** (or independent) learning time in the afternoons. Students can log on to their Canvas account through the PPS student portal at <https://sites.google.com/apps4pps.net/portal/pps-student-portal>

**Zoom** is the video conferencing platform I will be using to have **synchronous** (or live) class meetings in the mornings. We have one Zoom classroom location (just like a classroom) so students always know where I am on the web. This is also the location I will have my office hours on Wednesday afternoon from 12:23 to 1:45. The address to my Zoom classroom is <https://pps-net.zoom.us/my/drhabersclass>

**The Flipped Class** model is what we are using this year. That means that the instruction time will come during student **asynchronous** (or independent) learning time. This will happen in Canvas through videos and investigations followed by practice with the daily quiz. This next **synchronous** (or live) class meeting time we will work problems together and field questions. The idea is to **flip** the lesson to homework time and the practice is together with has been traditionally for students to do on their own. This allows more student interaction and more teacher availability during practice.

**Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):**

Students have opportunities to experience algebra through differentiation of curriculum both for enrichment and reconstruction of concepts. Students are given access to concepts through different means. This is done automatically for students who are on an IEP's, TAG and in ELL. If you believe you (or your child) would benefit from differentiation, please let me know. Honors credit is available through contract and will be posted on Wednesday asynchronous class time.

**Safety issues and requirements (if applicable): NA**

**Classroom norms and expectations:**

Students are required to maintain and bring to class regularly the following:

- Mathematics Journal, which will include: Vocabulary, notes, and practice for both **asynchronous & synchronous** class time,
- Active listening skills as shown by note taking during live or **synchronous** participation in class,
- A willingness to learn and explore during **asynchronous** class time,
- A willingness to work as a responsible group member both during both **asynchronous & synchronous** class time,
- A positive attitude about learning in our online setting, and
- A growth mindset of "YET!"

Cell phones are always to be away during learning as per Franklin High expectations, even during online learning. Please use it as a learning tool and not a distraction.

Communicating mathematical ideas is a big part of learning mathematics. Taking notes and writing about your thinking is an important part of math class and prepares students for future in college and career. Class notes are a snapshot of what is covered in class and is to be used alongside activities & online resources. Journals serve as the textbook for this class and will be used for studying for assessments and to reflect on learning.

Attendance is important to the learning process. Students are responsible for **all** missed content knowledge due to absences, either excused or not. This may mean having to spend time on math class during asynchronous time. Class video will be posted on my school YouTube channel for students who miss synchronous class time and the link can be requested.. Asynchronous (on own) class attendance is done by work assessed and completed in Canvas or by check in with me. If your student can not attend a class time, please have them email me at mbaber@pps.net You can still call and excuse your student when absent at 503-916-5140 ext. 81269.

### *Evidence of Course Completion*

#### Assessment of Progress and Achievement:

Students will earn a grade on quizzes, projects, and tests in Canvas. Grades will be assessed both Formatively (daily Module Quizzes) and Summatively (End of Module tests & Projects). The journal, which includes all assignments & notes, will be used to help in taking quizzes and assessments.

Formative Assessments are designed to inform students on their progress towards showing understanding on standards and will be 20% of the grade. Summative Assessments are designed to evaluate understanding of standards for each Module and are 80% of grade.

#### Progress Reports/Report Cards (what a grade means):

|   |    |          |     |
|---|----|----------|-----|
| Advanced understanding of standards:<br><b>Highly Proficient</b>                              | HP | 4 - 3.5  | A   |
| Proficient understanding of standards:<br><b>Proficient</b>                                   | PR | 3.49 - 3 | B   |
| Some understanding of standards, but <b>NOT YET</b> Proficient:<br><b>Close to Proficient</b> | CP | 2.99 - 2 | C   |
| Does <b>NOT YET</b> understand or standards:<br><b>Developing Proficiency</b>                 | DP | 1.99 - 1 | D/F |

**NOTE:** All learning targets or standards that are **NOT YET** will need to be revisited to earn Proficiency or better.

#### Career Related Learning Experience (CRLEs) and Essential Skills:

Students will use the **Mathematical Practices** of:

1. Making sense of problems and persevere in solving them.
2. Reasoning abstractly and quantitatively.
3. Constructing viable arguments and critique the reasoning of others.
4. Modeling with mathematics.
5. Using appropriate tools strategically.
6. Attending to precision.
7. Looking for and make use of structure.
8. Looking for and express regularity in repeated reasoning.

### **Communication with Parent/Guardian**

What methods are used to communicate curriculum, successes, concerns, etc.?

Regular Email, Emails from Canvas & Synergy, Daily Reminds on what's going on, Monthly Parent/Student Newsletter & Baber's Math World Site at <https://sites.google.com/site/babersmathworld/>

### **Personal Statement and other needed info**

*I believe that everyone can be successful in mathematics, including Algebra 3/4. This is going to be a fast paced experience and staying caught up is going to be really important. If you are lost or fall behind it is of the utmost importance (that means it really, really, really matters ) that you let me know so I can help you get back on track. **I can not see the confusion on your face when we are doing the online format, so you need to tell me. This can be done in synchronous class, with a chat, email, or yelling really loud (just kidding, well maybe).***