

**MATH 8 (Core Connections 3) COURSE SYLLABUS**  
**NORTHLAND PINES MIDDLE SCHOOL**  
**2017-2018**

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Welcome to the start of a new school year! Core Connections, Course 3 is the third of a three-year sequence of courses designed to prepare students for a rigorous college preparatory algebra course. On a daily basis, students in Core Connections, Course 3 use problem-solving strategies, questioning, investigating, analyzing critically, gathering and constructing evidence, and communicating rigorous arguments justifying their thinking. Students learn in collaboration with others while sharing information, expertise, and ideas. The course helps students to develop multiple strategies to solve problems and to recognize the connections between concepts. I am excited about this curriculum and its potential for helping students develop strong mathematical knowledge and skills. I am looking forward to a successful year for all students.

**Course Description and Objectives**

The following is an **overview** of the curriculum for this year

**1<sup>st</sup> Semester**

**Chapter 1- Problem Solving**

This chapter is designed to accomplish several objectives: to introduce students to several of the mathematical concepts on which this course is based, to establish class norms that will continue throughout the course, and to establish good teamwork. Several different mathematical topics are introduced in Chapter 1, including interpreting graphs, collecting data, using a trendline to make predictions, plotting points and linear equations, finding and generalizing patterns, and using problem-solving strategies.

**Chapter 2- Simplifying with Variables**

This chapter lays a solid foundation for solving equations. A heavy emphasis is placed on using algebra tiles daily so that all students can access abstract understanding through the use of concrete manipulatives. Students' work with an expression mat will help them gain a deeper understanding of "minus" and will address common errors that occur with simplifying expressions.

**Chapter 3- Graphs and Equations**

This chapter has students learning how to graph lines and parabolas from a table and learning how to find a rule from a table. Students will continue to develop their equation-solving strategies and will begin to understand that a solution is the value (or values) of the variable that makes the rule (equation) true. Students will also continue to develop their understanding of what it means for an equation to have no solution or a solution of "all numbers."

**Chapter 4- Multiple Representations**

This chapter is designed to have students find connections between the four representations: graphs, tables, patterns, and rules. To challenge teams with difficult problems that require them to think deeply about the relationships between the different representations. To begin a focus on writing equations from word problems, which is continued in Chapter 5. To introduce students to solving systems of equations where both equations are in  $y = mx + b$  form.

### Chapter 5- Systems of Equations

This chapter is designed to continue a focus on writing equations from word problems and to introduce students to solving systems of equations where both equations are in  $y = mx + b$  form. They are introduced to the Equal Values Method, which is a strategy to symbolically solve equations by setting them equal to each other when both are written in the form  $y = \dots$ . This is a simplified version of the Substitution Method.

### 2<sup>nd</sup> Semester

#### Chapter 6- Transformations and Similarity

Students will begin to perform basic transformations (translation, rotation, and reflection) on a coordinate plane that they create on graph paper. The focus on naming points using coordinates is important as students examine how the coordinates change as shapes are translated about the plane. Students will also investigate what happens when the coordinates of vertices of a shape are multiplied, which introduces the idea of dilation. Students will then look at ways to do and to "undo" dilations.

#### Chapter 7- Slope and Association

This chapter builds on the single-variable data displays from previous coursework and the coordinate graphing skills students began developing in Chapter 3. Students will analyze two-variable data with scatter plots and look for patterns. Different types of associations are introduced, and students learn how to place a trend line and use it to make predictions. Positive and negative slope will be explored through slope triangles on graphical representations, and later in equations.

#### Chapter 8- Exponents and Functions

In this chapter, students will analyze graphs and tables of values for simple interest alongside those for compound interest in order to describe the characteristics that distinguish linear growth (found in situations involving simple interest) and exponential growth (found in situations involving compound interest). Students will then use the patterns in their tables and graphs of compound interest situations to generate expressions that can be written most simply with exponents. Students will also interpret, rewrite and perform operations with numbers that are given in scientific notation. Students will be introduced to the concept of a function and how to identify a function from a table and a graph.

#### Chapter 9- Angles and Pythagorean Theorem

This chapter builds several core geometry concepts related to parallel lines and triangles. Students will learn about three angle relationships for parallel lines intersected by a transversal - corresponding, alternate interior and same side interior angles. Then using the Pythagorean Theorem and the square root operation, students will solve for the length of the unknown third side of a right triangle.

#### Chapter 10- Surface Area and Volume

In this last chapter, students will study three-dimensional shapes. They will work on developing strategies to find the surface area and volume of several non-rectangular based prisms, pyramids, cylinders, cones, and spheres.

## **Classroom Expectations**

- \* Be Respectful
- \* Use good manners
- \* Use classroom voices.
- \* Raise your hand. Don't shout out answers/comments.
- \* Get homework and other assignments in on time.

## Supplies Needed

- **Textbook:** Students will be issued an eBook (Web-based book.) We will use hardcover books in class.
  - If a student needs a math book, one can be checked out to them. This then needs to stay in binder.
- **Binder:** Blue 1½ to 2-inch **hard cover** binder that will be used for math only. (*A 1 inch binder is too small.*)
- **Scientific Calculator** is recommended.
- **Pencils:** Students are expected to do math work in pencil only.
- **3- Blue 1 subject notebooks** (One notebook at a time must easily fit into math binder.)
- **Graph Paper:** A small amount of work will be completed on graphing paper.
- **Paper:** A large supply of loose-leaf notebook paper.

## Grading Summary

Students will be allowed to demonstrate how well they are making sense of the mathematics in many ways. Below is a grading summary.

### Participation (Points vary)

Because participating in discussions and teamwork is so important in helping the students make sense of the mathematics, this is one part of the student's grade.

### Homework (4 points possible for each homework assignment-See Grading Rubric)

Homework assignments offer students opportunity to think about problems more in depth. Homework assignments are very important. Students will have the opportunity to revise their answers after we discuss problems. On page 4 is a rubric for grading homework.

### Vocabulary (Not graded, but checked as an assignment)

Understanding mathematical terminology is necessary for developing mathematical understanding. Students will periodically be given vocabulary words to list and define. At the end of each chapter, students will be quizzed on these words.

### Quizzes & Team Quizzes (Will be graded on a test rubric)

Quizzes are taken individually, except team quizzes, which are done within a team. Team Quizzes- students are assessed on "putting their heads together" since a lot of what we do in class is explored with others. Quiz re-takes are allowed, after student has had a conference with the teacher.

### Tests / Projects (Will be graded on a test rubric)

At the end of each chapter an individual test is given. This serves as an opportunity for students to show what they, as individuals, have learned. Test re-takes are allowed, after student has had a conference with the teacher.

Students may also be assigned a project at the end of a chapter or unit, which will be graded based on the amount of work asked for each project.

## Participation Grading

I will look for the following throughout the week for participation:

- Did you participate in discussions?
- Did you come prepared to class, having done your homework, so that you could ask questions?
- Did you ask questions when you didn't understand?
- Did you listen to others?

# Grading Rubric

## Grading Homework

- 4 This grade indicates that the student has completed all of their work and that all of it was correct.
- 3 This grade indicates that the student has completed **all** of their work, but there are some areas that are in need of correction. Students can make the necessary corrections and if this is done, they may receive more credit.
- 2 This grade indicates that the student completed **most** of their work, but there are several areas that are in need of correction. Students can make the necessary corrections and if this is done, they may receive more credit.
- 1 This grade indicates that the student did not complete the entire assignment, but started. Students can make the necessary corrections and if this is done, they may receive more credit.

## Grading Quizzes/Tests

- 4 **Excellent (Mastery) Understanding**
  - Student work shows excellent understanding of mathematical concepts, principles, and their inter-relationships.
  - Performance shows mastery of the use of mathematics to solve problems.
  - Data analyses and explanations demonstrate a high level of reasoning.
  - Models, principles, or theories are used creatively to analyze problems, draw analogies, and make insightful inferences and appropriate applications to daily life.
- 3 **Good (Proficient) Understanding**
  - Student work shows good understanding of mathematical concepts, principles and their inter-relationships.
  - Performance shows good understanding of the use of mathematics to solve problems.
  - Data analyses and explanations demonstrate sound reasoning.
  - Models, principles, or theories are used correctly to analyze problems and draw analogies.
- 2 **Developing Understanding**
  - Student work shows basic understanding of mathematical concepts principles and their inter-relationships.
  - Performance shows some use of methods of mathematics to solve problems.
  - Work states facts, draws conclusions, or makes assertions that are incompletely substantiated.
- 1 **Basic Knowledge**
  - Student work shows limited knowledge of mathematical concepts principles and their inter-relationships.
  - Performance shows limited use of mathematics to solve problems.
  - Some mathematics may be correctly demonstrated, but evidence of an understanding of broad concepts is lacking.

(Continued on next page)

## 0 OR NP Minimal (Not Present) Knowledge

- Student work shows minimal knowledge of mathematical concepts and does not provide evidence of an understanding of individual facts, concepts, or their interrelationships.
- Performance shows little or no correct use of mathematics to solve problems.
- The standard has been assessed, but the student's work does not indicate knowledge of the concept or is not an appropriate method to lead to the conclusion.

## Attendance

If an absence is needed, students will have 2 days for everyday absent to turn in any missed assignments. Students need to check the absent file folder for missed assignments. Students also need to check Haiku for the classwork/assignment they missed.

## Grades

A	93-100%	C	73-76%		
A-	90-92%	C-	70-72%	5%	Homework
B+	87-89%	D+	67-69%	15%	Team Review/Work
B	83-86%	D	63-66%	20%	Quizzes
B-	80-82%	D-	60-62%	60%	Chapter Tests
C+	77-79%	F	< 60%		

### Remind

Here is another way to get **math** updates or important reminders from Mrs. Petreikis. (Example: Reminder chapter test is tomorrow.) Follow the instructions on the right.

Remind is a website that provides a safe way for teachers to text message or email students and parents. Once subscribed, remind will ask for the students/parents name so that the teacher can identify them. Remind never shows the teacher that person's number, which means they never see student/parent numbers and students/parents never see theirs. Standard messaging do rates apply.

Mrs. Petreikis created Math 8 on Remind.  
Follow these steps to join!

1. Download the Remind app. It's free!

If you don't have a smartphone, get text notifications.

Text the message @gb6f47 to the number 81010.

If you're having trouble with 81010, try texting @gb6f47 to (442) 333-4399.

\* Standard text message rates apply.



2. Or visit this link: [rmd.at/gb6f47](http://rmd.at/gb6f47) and follow instructions.
3. Or join via SMS!  
Enter this number: (442) 333-4399 with this message @gb6f47

**Math Binder:** Students will be required to have a separate 3-ring binder for math, 1½ to 2-inches.

Your binder should include:

- Your math book (Students will be issued an eBook with their chromebook. They will use a hardcover book in the classroom. Should a student need a book to take home, one can be checked out.)
- Your notebook
- This syllabus
- Vocabulary
- Notes

(We will create dividers for the binder in class when needed, unless you want to buy your own.)

(Assignments and tests should be stored in the classroom.)

Please review the above with your child. Students should have their math binder organized and ready to use by **Monday, September 11.** Please put these papers in your binder.

**PLEASE DO NOT CUT PAPER**

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Parent / Guardian      Signature

Student Signature

Email address: \_\_\_\_\_

Thank you for sharing your child with me this year. I look forward to an awesome year of learning! If you have any questions or concerns at any time during the year, please feel free to contact me before or after school.

Mrs. Petreikis

e-mail: [tpetreikis@npsd.k12.wi.us](mailto:tpetreikis@npsd.k12.wi.us)

Phone: 479-4473 ext. 2112

One last note:

There will be some topics that your child understands quickly and some concepts that may take longer to master. The big ideas of the course take time to learn. This means that students are not necessarily expected to master a concept when it is first introduced. When a topic is first introduced in the textbook, there will be several problems to do for practice. Succeeding lessons and homework assignments will continue to practice the concept or skill over weeks and months so that mastery will develop over time.