BISHOP
DUNNE
CATHOLIC SCHOOL

Math Department Summer Assignment
2020-21

Background

The goals of the math department summer assignment program are as follows:

1. Provide extra practice to keep math skills sharp over the summer break to improve retention. According to the Review of Educational Research, students who do not do math "lose about 2.6 months' worth of grade level equivalency in mathematical computation skills during their summer break."
2. Inform new students and families of the content knowledge that students are expected to have upon entering a specific math course
3. Identify students who need extra support in math immediately and provide support so that students may have a positive experience at the beginning of the school year
4. Ensure that students are placed in the correct level (College Prep, Honors, or AP) based on their ability and desire to learn

Students will be using the online mathematics resource Khan Academy to review and practice core concepts used in their upcoming math course. Khan Academy is chosen because of its alignment with our curriculum and the support that it offers to students. If a student is stuck on a topic, they can access step-by-step solutions as well as detailed videos that explain the concept and work example problems.

Support

If students have questions about their assignment, they should reach out to Mr. Pinkerton (gpinkerton@bdcs.org) via email. Mr. Pinkerton will be checking email regularly Monday-Friday and students should expect a response within 48 hours. In their email, students should include specific information such as the skill they are working on and the issues they are having. When possible, include a screenshot so that we can be of more assistance. If the question is about the math material being assessed, students should also take advantage of the videos and resources available on Khan Academy.

Important Dates

All skills should be practiced and the study guide completed before the first day of school (Monday, August 10, 2020). On that day, a diagnostic assessment will be completed in class. This assessment is used for diagnostic purposes only and does not carry weight in the grade book. A student who shows deficiencies in their assessment results will be assigned mandatory tutoring during the week of August 10-14. A second assessment over the summer assignment topics will be given no later than Monday, August 24. This assessment will count as the first MAJOR grade of the class.

Steps to Complete your Summer Work

1. Set up an account on KhanAcademy.org. Create a username and password. Use your full first and last name as your display name. Returning students will use the same account they used during the school year.

2. Enter the appropriate class code (see below) to be placed in the correct group. This allows your teacher to assign the recommended skills and monitor your progress. (See the following page for more detailed instructions about entering a class)

3. Skills will be assigned to students registered on Khan Academy by **Monday, June 1, 2020**. If you join a class after June 1, the skills will appear as Assignments within 1 week. **Class registration is NOT required to access the skills**.

4. Practice the assigned skills. While earning 100% for each skill is preferred, any score above 70% is acceptable.

5. Complete the practice problems on the study guide posted to bdcs.org/read. Check your work using the attached answers. The study guide will help you summarize the steps used in each skill and give you a study resource to refer to throughout the summer.

6. Come prepared for a diagnostic quiz over these skills on your first day of class.

Reference Guide for Class Codes

Class you are Entering	Class Code
Math 6	HNVQ3E63
Math 7	NYYUYEC9
Pre Algebra	PPHS9U6B
Algebra I (All Levels)	BKRSB74T
Geometry (All Levels)	NT8XPQWG
Algebra II (All Levels)	BTZKXDY5
Precalculus (All Levels)	A7E9G4P9
Calculus (All Levels)	ABDB5HT2

Note:
*   If you are taking 2 math classes (for example: Geometry and Algebra II) you would enter both classes.
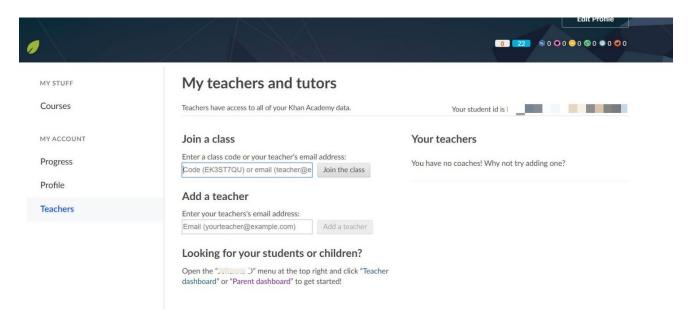
Khan Academy How-To

The following steps will allow you to enter the correct class for your summer work.

When you add someone as a teacher, you give them access to your progress information so that they can better support your learning. If you have an email address attached to your account, your teacher will also be able to see the primary email account.

Follow the instructions below if you are a student who wants to add a teacher. **You will need to enter the teacher's class code.**

Once logged into your Khan Academy account, you'll be taken to your logged-in home page. Click on **Teachers** in the left navigation menu.

Follow the prompts under **My teachers and tutors** to **Join a class** and type in the class code for your class from page 2.

Assignments will populate on June 1. If you register after June 1, please allow 48 hours for your assignments to appear.

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Skills Lists

(NOTE: Khan Academy may make slight changes to the skill names over the summer)

Math 6 Skills List
1. Comparing Decimals through Thousandths
2. Order Decimals
3. Round Decimals
4. Multiply and Divide by Powers of 10
5. Add decimals like 47.75 + 11.98
6. Subtract decimals like 56.8 - 17.9
7. Multiply decimals like 1.7 x 0.12
8. Divide whole numbers like 63 ÷ 12 to get a decimal
9. Add and Subtract Mixed Numbers with Unlike Denominators (No Regrouping)
10. Multiply mixed numbers

Math 7 Skills List
1. Round decimals
2. Adding & Subtracting Decimals Word Problems
3. Multiplying decimals like 0.847 x 3.54 (standard algorithm)
4. Dividing decimals: thousandths
5. Multiplying and dividing with powers of 10
6. Order of operations
7. Add and subtract fractions word problems
8. Multiply fractions word problems
9. Dividing fractions word problems
10. Relate fractions, decimals, and percents

Pre Algebra Skills List
1. Round Decimals
2. Round decimals challenge
3. Multiplying decimals like 2.45x3.6 (standard algorithm)
4. Identify factors and multiples
5. Add and subtract fractions word problems
6. Multiply fractions word problems
7. Dividing fractions word problems
8. Relate fractions, decimals, and percents
9. One-step addition & subtraction equations
10. One-step multiplication & division equations

Algebra I Skills List
1. Add Fractions with Unlike Denominators
2. Subtracting Fractions with Unlike Denominators
3. Multiplying Fractions
4. Dividing Fractions
5. Combining Like Terms with Negative Coefficients
6. One-Step Addition & Subtraction Equations
7. One-Step Multiplication & Division Equations
8. One-Step Equations with Negatives (Add & Subtract)
9. One-Step Equations with Negatives (Multiply & Divide)
10. Two-step equations

Geometry Skills List
1. One-Step Addition & Subtraction Equations: Fractions & Decimals
2. One-Step Multiplication & Division Equations: Fractions & Decimals
3. Two-Step Equations
4. Equations with Parentheses
5. Equations with Variables on Both Sides
6. Solving Proportions
7. Factoring Quadratics Intro
8. Multiply Binomials Intro
9. Simplify Square Roots
10. Parallel & Perpendicular Lines from Equation

Algebra II Skills List
1. Equivalent Expressions
2. Combining Like Terms with Negative Coefficients & Distribution
3. Equations with Variables on Both Sides: Decimals & Fractions
4. Equations with Parentheses: Decimals & Fractions
5. Graph from Slope-Intercept Form
6. Graph from Linear Standard Form
7. Slope-Intercept from Two Points
8. Intercepts from an Equation
9. Quadratics by Factoring (Intro)
10. Simplify Square Roots

Precalculus Skills List
1. Quadratics by Factoring (Intro)
2. Quadratics by Factoring
3. Factor Quadratics by Grouping
4. Quadratics by Taking Square Roots: Strategy
5. Quadratic Formula
6. Solve Quadratic Equations: Complex Solutions
7. Graph Quadratics: Vertex Form
8. Shift Parabolas
9. Features of Quadratic Functions
10. Features of Quadratic Functions: Strategy

Calculus Skills List
(NOTE: *The last 5 skills listed are only required for students entering AP Calculus AB. However, due to possible changes in schedule during the summer, these will be assigned to all Calculus students. Students in College Prep Calculus may ignore those 5 recommendations.*)

1. Find Inverse Functions
2. Transforming Functions
3. Evaluate Composite Functions
4. Evaluate Composite Functions: Graphs & Tables
5. Find Composite Functions
6. Positive and Negative Intervals
7. Increasing and Decreasing Intervals
8. Trig Unit Circle Review
9. Trig Ratios of Special Angles
10. Reciprocal trig ratios
11. Solve for a side in right triangles
12. Find trig ratios using Pythagorean Theorem
13. Right triangle word problems
14. Evaluating expressions using basic trigonometric identities
15. Graph sinusoidal functions
16. Estimating Limit Values from Graphs (** AP only **)
17. One-Sided Limits from Graphs (** AP only **)
18. Limits at Infinity of Quotients (** AP only **)
19. Limits by Factoring (** AP only **)
20. Differentiate Polynomials (** AP only **)