

# Honors Algebra 2

## 2005–2006 Course Guide

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Class web site: <http://lhs.lexingtonma.org/Teachers/Kelly/alg2/>

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Information and policies in this guide are subject to change; see the class web site for the latest version.

### From the LHS Program of Studies

#### Description of Algebra 2

“These courses will focus on the extension of the number system to a complex field, elementary functions using multiple representations (graphical, numerical, algebraic and verbal) including linear, quadratic, polynomial, rational, exponential, and logarithmic functions, linear systems and matrices, and the study of probability and of sequences and series. Honors classes will have an introduction to statistics. Problem solving will be emphasized throughout the course.”

#### Description of Honors level courses

“Honors courses progress at a very fast pace, covering the greatest breadth and depth of topics. Students are expected to have mastered the skills and thoroughly understood the concepts covered in prior courses. They are expected to have retained this past knowledge, which will generally not be reviewed in the course. Mathematical concepts are often introduced at an abstract and theoretical level. New ideas are often developed through student investigation with minimal guidance from the teacher. Students will be expected to apply their knowledge to open-ended and non-routine problems. Students will sometimes be expected to learn material by reading the textbook and/or solving problems on their own. Typical classes include minimal review of homework and previously covered material. Students are expected to be highly self-motivated, taking the fullest responsibility for their own learning and seeking help when needed. The course is designed to meet the needs of a student who thrives in a more independent learning environment.”

#### How to succeed in this course

It is essential to develop habits of mind and a work ethic that fit the description of honors-level learning that appears above. This class is tailored to a certain type of learning, and might not fit the needs of students looking for a different kind of class. If you realize early in the year that your

needs and preferences are different, you may be able to switch to a different level.

The following is a list of things that you can do to get the most out of this course.

- Participate actively in class discussions.
- Participate actively in group work.
- Learn by doing, not just watching.
- Learn by listening and talking, not just listening.
- Work on understanding the concepts and ideas in the course, not just learning skills and procedures. Rote learning (memorizing the steps) won't be enough to succeed in this course.
- Expect that there will be things you don't get immediately. Learn to be persistent in your thinking and your problem solving.
- Before coming to class, think about what your questions are. Ask questions during class discussions, in your group, and outside class.
- Seek help from your teacher, classmates, and other sources such as the Math Help Room.
- Do homework everyday. Don't get in a cycle of falling behind and catching up.
- Pay attention to what work is expected. Don't skip anything. When absent, catch up promptly.

#### Behavior expectations

A productive and respectful classroom atmosphere is essential for learning. Individual behavior can support or undermine the learning environment.

To make our classroom work well, here is what is expected of you:

- Be ready to begin class when the period starts. (Lengthy or frequent tardiness is unacceptable.)
- Listen silently when it is someone else's turn to talk. (This is especially important in a large class.)
- Bring your notebook and homework to class daily, and your textbook whenever you are asked to.
- Stay focused on the current learning activity.
- Follow all school rules.

In general, these expectations will be upheld by consequences that begin with verbal warnings, and progress to detentions or school-level discipline for serious or repeated offenses.

**Curriculum, textbook, and materials**

The LHS core curriculum for Algebra 2 is represented by a topic outline which can be found from the class web site. We will cover all of these core topics and selected additional topics.

Our textbook is *Algebra 2* by Schultz et al. (HRW, 2001). We will cover most of Chapters 1–12, and use other materials for enrichment.

Graphing calculators will be used daily for class activities and homework. They help students develop a strong understanding of relationships between algebraic and graphical representations, and enable graphical solutions to problems that may not be solvable by any other means. The Mathematics Department strongly recommends owning a graphing calculator. Students who do not already own a graphing calculator are encouraged to buy a calculator in the TI-83 or TI-84 family. Students who do not buy a calculator may borrow one from the school.

For homework, you will need a supply of graph paper or a graph paper notebook. In class, graph paper will be supplied.

**Assignments and tests**

Homework will be assigned daily in class, and a list of assignments will be kept on the class web site. Unless otherwise stated, all assignments are due at the next class. Completing homework on time is vital because most assignments serve as a basis for the next class topic. Occasionally there may be homework completion checks in class. The frequency of such checks will depend on the class's homework habits and other factors. Since the purpose of these checks is to encourage on-time completion of homework, late homework will not be accepted. Also, an assignment may occasionally be collected and graded for correctness, but only if announced in advance.

Full-period tests will generally be given every 2-3 weeks and will always be announced in advance. There may be some shorter tests and (possibly unannounced) short quizzes.

Toward the end of Quarters 1, 2, and 3, there will be an optional additional test to give students with lower grades an opportunity to show improvement and earn an increased grade. This test will be given only on a specific day after school. Rules for this grade-improvement test will be published before the first such test in early November.

Calculators will be allowed during all tests unless otherwise announced. However, certain advanced calculators with symbolic algebra features (such as the TI-89 and TI-92) will not be permitted, as they would provide an unfair advantage.

Students entitled to extended testing time under an IEP or 504 Plan will receive 50% additional time, unless a different amount is established either by the Plan or through a Special Education team meeting. This extended time should generally be completed no later than after school the same day.

**Scoring system**

For most test problems and graded assignments, you will be asked to provide a fully explained and justified solution. Problems of this kind will be marked on a 0-to-5 numerical scale. Here is a brief description of each level of the scale.

- 5:** a correct solution that is presented well or shows exceptional understanding
- 4:** a solution that is correct, complete, and adequately presented
- 3:** a mostly satisfactory solution with a few missing details or minor errors
- 2:** a partial solution with at least one major step or idea missing
- 1:** a minimal start toward a correct solution
- 0:** no progress toward a correct solution

Sometimes, questions that require only a short response may just be scored right-or-wrong.

Test grades will be computed by taking a weighted average of problem scores. Then, a letter grade will be assigned using the closest number on this scale:

4.3	4.0	3.7	3.3	3.0	2.7	2.3	2.0	1.7	less than 1.5	less than 1.0
A+	A	A-	B+	B	B-	C+	C	C-	D	F

**Report card grades**

The makeup of the quarter grade will be as follows. Homework completion checks, if any, will count 1% each. The rest of the grade (which will be between 85% and 100%) will be a weighted average of scores earned on tests, quizzes, and any other graded assignments that may have been given. All full-period tests will carry equal weight in the average. The weights of quizzes and other assignments will be specified individually based on size and importance (for example, a half-period quiz may count with one-half the weight of a test).

Repeatedly neglecting to bring your textbook to class would have a negative impact on your learning, so there is a negative grade consequence: beginning with the second time in a quarter that you are recorded as not having your book, your quarter grade would be reduced by 0.1 each time.

Your numerical quarter average will be converted to a letter grade for your report card. The scale shown above will be used, but rounding of in-between grades (for example, whether a 2.9 is a B or a B-) will be at the teacher's discretion.

The year grade will be based on the four quarters (22% each) and a departmental final exam (12%).

### Absences and makeup tests

Whenever you are absent, it is your responsibility to find out what you missed, and then I will provide reasonable support to help you catch up. Following the usual practice at LHS, the time allowed for completing missed work is usually one day for each day missed, with the following exceptions. If there is a test or an assignment due on the first day of your absence, you are responsible for it on the day you return. Also, if you miss class because of a field trip, you must be prepared for the next class just as if you had been in class.

To ensure that makeup tests are prompt and fair, you are required to take the test during a regularly scheduled class meeting within the time frame described above, unless we mutually agree to an alternate time and place. Students who have been absent repeatedly should expect that makeup deadlines will be rigidly enforced. Moreover, at my discretion, I may require additional documentation validating your excuse (such as a doctor's note for a doctor's appointment) before administering or grading a makeup test.

If an absence is unexcused or not satisfactorily documented, you will receive a zero for any missed work, with no makeup.

### Getting help

I encourage you to seek my assistance with your math learning outside of class time. This support can benefit anyone, not just students who are struggling. I am available nearly every day after school, and sometimes during school. To be sure that I will be available to help you at a particular time, you may make an appointment. If you do not have an appointment, you are welcome to look for

me anyway (try our classroom 819 or my office 713), but I might or might not be available.

Feel free to send me e-mail at this address:

[kkelly@sch.ci.lexington.ma.us](mailto:kkelly@sch.ci.lexington.ma.us) .

I check my mail often. It's usually not feasible to give math help over e-mail, but it's a good way to make an appointment or clarify an assignment.

Other sources of help include the Math Help Room (room 830, staffed by math teachers during most blocks of the day) and student tutoring offered by the LHS Peer Tutoring Organization. Also, many students find it very helpful to work on math with their classmates. Try many or all of these sources of support to find out which are most beneficial to you.

### Information for parents

Parents should feel free to contact the teacher with any questions or concerns about the course. The best way is by sending e-mail to [kkelly@sch.ci.lexington.ma.us](mailto:kkelly@sch.ci.lexington.ma.us) .

Alternatively, leave a message with the secretary at 781-861-2320 x7020 and I will return the call.

Parents may wish to consult the class web site <http://lhs.lexingtonma.org/Teachers/Kelly/alg2/> which has a topic outline for the course, a running list of homework assignments, and other information related to the course.

Parents are invited to attend Back-to-School Night (October 6, 2005) and Parent Conference Day (January 3, 2006). Conferences are also available by appointment if needed at other times in the school year.

### About the teacher

Kevin Kelly has been teaching math at LHS since 1994. A New Jersey native who moved to Massachusetts in 1990, Mr. Kelly received his education at Rutgers, MIT, and Harvard. He is a Massachusetts Master Teacher and a National Board Certified Teacher, qualifications held by only a few dozen math teachers statewide. He is most honored to be a two-time recipient of the Mathematical Association of America's Sliffe Award for Distinguished High School Teaching in 2001 and 2004, since he was nominated for it by LHS students. Mr. Kelly lives in Arlington with his spouse Amy, who teaches in Bedford.