FRASSATI
CATHOLIC HIGH SCHOOL

From the Math and Science Departments:
Summer Suggestions to Build Up Sophomore Math and Science Skills

Students interested in refining math skills over the summer have several options:

- Course related skill reviews have been uploaded to a Frassati Google Classroom webpage and may be accessed in the same way you obtain course material during the school year. To access the documents, join the class titled *Mathematics Summer Review* using the class code, **41n9pya**.

- Tri-C Publications have prepared inexpensive summer study workbooks for various levels of math. They are designed for use by the student at home three or four times a week for ten weeks. Workbooks are available to order at http://www.summerskills.com/summerskillsbooks/math_books.

- Online mathematics review is readily available. The sites below are organized by course and topic.

  https://www.khanacademy.org/math
  Select your most recent math course to review important concepts and complete practice problems.

  http://www.coolmath.com/algebra/index.html
  Review key concepts related to a chosen topic and then complete self-checking online problems.

  https://www.kutasoftware.com/
  Select your most recent math course under the *Free Worksheet* tab to choose among problem practice sets organized by concept.

- A TI-84 Plus CE or TI-84 Plus C Silver Edition calculator is required for both math and science courses. If you see a good deal on one early in the summer, you may want to purchase it right away. Although you will learn how to use it in class, you may want to familiarize yourself with it over the summer. For information on this calculator, go to http://education.ti.com/en/us/products/calculators/graphing-calculators. Calculator tutorials can be accessed at www.atomiclearning.com/k12/en/ti_84c.

Overall preparation for Chemistry is very simple. As you go through the summer, be aware of how you use your senses to gain knowledge. Think about how things, living or nonliving, change. Here are some questions to consider:

- ✓ How reliable are my senses?
- ✓ How do I know things smaller than my eyes can directly see exist? Think about atoms and molecules
- ✓ What role do you think math plays in chemistry?
- ✓ How do you explain the properties of some every day substance in terms of the molecules that make it up? For example, why can soap clean? What makes baking soda useful in baking?
- ✓ How can you be made up of a whole lot of molecules but still be just one person, one organism?

These questions are really not so simple but are very profound. Gaining practice in thinking about these kinds of questions is the key to really thinking deeply in chemistry, in science and in general. They will prepare you for studying chemistry concepts successfully. You may also want to read the Science Department Philosophy and Mission as listed in the *Curriculum Guide* to see how these questions are relevant for all science courses.

- Are you interested in seeing what chemistry is all about? Perhaps you might enjoy some simulations or a youtube video. Try these sites:
  https://phet.colorado.edu
  http://www.bozemanscience.com/chemistry/

- How are your significant figures skills? How about dimensional analysis? These concepts are important not only in physics but in chemistry and all sciences. If you want to gain a little more experience over the summer, there are a lot of sites on the internet to help you. For a start, try these sites:
  http://www.alysion.org/dimensional/fun.htm
  http://www.chem.tamu.edu/class/fyp/mathrev/mr-da.html