MATH, SCIENCE, COMPUTER SCIENCE PROGRAM
UPCOUNTY CENTER PROGRAM

Roberto Clemente Middle School
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Dear Students and Parents:

We are excited that you will once again be joining us in the Math/Science/Computer Science Center Program at Roberto Clemente Middle School. We look forward to an exciting year in the SEVENTH Grade!

As we look ahead to continuing the pathway of rigor and enlightenment that began last year, please take a moment to get acquainted with your new teachers by reading their biographies.

Yours in learning,

The 7th Grade Upcounty Center Team

MATHEMATICS

Algebra I is offered to students who have demonstrated mastery of enriched Magnet Math 6. The units of study include sets, relations and operations, irrational expressions and equations, mathematical systems, functions, probability and statistics, polynomial functions, functions and relations of the second degree, solving systems of equations and inequalities, and exponential functions.

Geometry is offered to students who have demonstrated mastery of enriched Algebra 1 concepts. The units of study include geometry, exploring geometric relations and properties, logic and geometric proofs, right triangle relationships and coordinate geometry, similarity and trigonometry, measurement, circles, and patterns in geometry and algebra. The concepts of Algebra 1 are integrated throughout the course, as their use is appropriate. The first unit of the course is The Foundation of Geometry, and it covers The Building Block of Geometry, Measuring Length, Measuring Angles, Geometry Using Paper Folding, Special Points in Triangles, Motion in Geometry and Motion in the Coordinate Plane.

Students should complete a preparatory math packet over the summer. You can download the packet from the web at www.robertoclementems.org. The summer packet is due the first day of school.

A graphing calculator is required for Algebra I courses. Our teachers use the TI-83+ calculator in the classroom, however, any graphing calculator which has a table of values function will be fine. Your teacher will be sending out forms at the beginning of the year if you need assistance with obtaining a graphing calculator.

COMPUTER SCIENCE

Mr. Sascha Simkanich – Sascha_J_Simkanich@mcpsmd.org

Mr. Simkanich graduated from The Pennsylvania State University with a Bachelors of Science degree in Elementary Education (K-6). Mr. Simkanich has a Masters degree from Johns Hopkins University in Technology for educators and his Administration and Supervision Certificate 1 certification from McDaniel University.

Mr. Simkanich has been teaching since 2001 and taught computer science at the Argyle Middle School technology magnet program and recently at Sligo Middle School. Mr. Simkanich took a leave of absence for two years to teach at Escuela Campo Alegre International School in Caracas, Venezuela and brings a global perspective to RCMS. He is excited to join the Clemente staff this year as the 7th grade team leader and be a part of the Math/Science/Computer Science Center Program.

Getting Ready for Computer Science 7 Programming Class

Most students find it useful to have a USB storage device for school-to-home data transportation. If you rely on such a storage device, I strongly recommend that you frequently backup your files so that you will be able to restore your work immediately should your device malfunction or become lost. You do not want to miss a due date or deadline as a result of a storage device snafu.

Things To Do Over The Summer: Think, Explore, and Consider!

I am not assigning a specific summer assignment. Also, please do not begin programming before we start class in late August.

CENTER SCIENCE

Mr. Gregory A. Young – Gregory_Young@mcpsmd.org

Mr. Young holds a Bachelor of Science degree in Middle School Science Education from the University of Kentucky. Mr. Young also holds a Masters of Arts in Education Leadership from Eastern Kentucky University.

Mr. Young has taught middle school science since 1996. Mr. Young joined the Clemente science team in 2002 and has taught various middle school science courses including 6th, 7th, and 8th grade science as well as Astronomy and Engineering.

The seventh grade center science course features a connected curriculum primarily in life sciences, but will also include a heavy emphasis in physical science and astronomy. Some topics we will be studying include biological patterns and systems, a more in depth look (from 6th grade) into genetics, disease, and the dynamics between the Sun and the Earth -- highlighting the analysis of the electromagnetic spectrum from deep space..

The assignment is the initial research for the students' "traditional" science fair project which will be completed by January. The ability to take a testable question and perform an experiment using superior methodology is the key to success.

If you would like to look ahead at the required Montgomery County Science Fair Rules and Regulations, please check out the following website: **http://www.sciencemontgomery.org**.

All students will be required to participate in a traditional science fair later on in the spring, but research for such a project should begin over the summer. So those students who may already have an idea for a science fair project will have a "leg up" on the year with this summer assignment. The categories for the science fair include:

- **Behavioral and Social Sciences**
  Human and animal behavior, social and community relationships—psychology, sociology, anthropology, archaeology, ethology, ethnology, linguistics, learning, perception, urban problems, reading problems, public opinion surveys, educational testing, etc.
- **Biochemistry**
  Chemistry of life processes—molecular biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry, hormones, etc.
- **Biology**
  Study of plant and animal life—agriculture, agronomy, horticulture, forestry, plant taxonomy, plant physiology, plant pathology, plant genetics, hydroponics, algae, etc. , and animal genetics, ornithology, ichthyology, herpetology, entomology, animal ecology, paleontology, cellular physiology, circadian rhythms, animal husbandry, cytology, histology, animal physiology, invertebrate neurophysiology, studies of invertebrates, etc.
- **Chemistry**
  Study of nature and composition of matter and laws governing it—physical chemistry, organic chemistry (other than biochemistry), inorganic chemistry, materials, plastics, fuels, pesticides, metallurgy, soil chemistry, etc.
- **Computer Science**
  Study and development of computer hardware, software engineering, internet networking and communications, graphics (including human interface), simulations / virtual reality or computational science (including data structures, encryption, coding and information theory).
- **Earth and Space Science**
  Geology, minerology, physiography, oceanography, meteorology, climatology, speleology, seismology, geography, astronomy, planetary science, etc.
- **Engineering**
  Technology; projects that directly apply scientific principles to manufacturing and practical uses—civil, mechanical, aeronautical, chemical, electrical, photographic, sound, automotive, marine, heating and refrigerating, transportation, environmental engineering, etc.
- **Environmental Science**
  Study of pollution (air, water, and land) sources and their control; ecology.
- **Mathematics**
  Development of formal logical systems or various numerical and algebraic computations, and the application of these principles—calculus, geometry, abstract algebra, number theory, statistics, complex analysis, probability.
- **Medicine and Health**
  Study of diseases and health of humans and animals—dentistry, pharmacology, pathology, ophthalmology, nutrition, sanitation, dermatology, allergies, speech and hearing, etc.
- **Microbiology**
  Biology of microorganisms—bacteriology, virology, protozoology, fungi, bacterial genetics, yeast, etc.

- **Physics**
  Theories, principles, and laws governing energy and the effect of energy on matter—solid state, optics, acoustics, particle, nuclear, atomic, plasma, superconductivity, fluid and gas dynamics, thermodynamics, semiconductors, magnetism, quantum mechanics, biophysics, etc.

From these twelve possible categories, students are to choose **four** that interest them the most. Students are to write a research plan for four possible experiments they might consider for their spring science fair project. Each research plan should be one paragraph only and include the following:

1. Testable Question or Problem
2. Hypothesis/Engineering Goals
3. Description in detail of method or procedures
   • Procedures: Detail all procedures and experimental design to be used for data collection
4. Data Analysis: Describe the procedures you will use to analyze the data that answers your testable question or problem

This assignment is due the first week of school.

If you have any questions please email Mr. Young at the above email.