Course Name: Math Explorations 6
Course Code: M2612

Course Description:

This course broadens the foundation of algebraic and geometric ideas through exploratory and inquiry-based learning activities. Interdisciplinary units centered on 21st Century themes guide students through real-life scenarios. The students construct visual representations to demonstrate their understanding of mathematics and its relevance to their world. The course includes topics such as use of variables, writing expressions and equations, interpreting and modeling data, measurement, area, the coordinate system, and probability.

Course Proficiencies: The following is a list of the proficiencies that describe what students are expected to know and be able to do as a result of successful completion of the course. The proficiencies are the basis of the assessment of student achievement. The learner will demonstrate the ability to:

1. Demonstrate an understanding of the concept of a ratio and use it to describe a relationship between two quantities. **6.RP.1**
2. Demonstrate an understanding of the concept of a unit rate. **6.RP.2**
3. Use ratio and rate to solve real-world problems. **6.RP.3**
4. Find the greatest common factor and least common multiple of whole numbers. **6.NS.4**
5. Solve real-world problems by graphing points in all four quadrants of the coordinate plane. **6.NS.8**
6. Write, read, and evaluate expressions in which letters stand for numbers. **6.EE.2**
7. Apply the properties of operations to generate equivalent expressions. **6.EE.3**
8. Use variables to represent numbers and write expressions when solving real-world problems. **6.EE.6**
9. Find the area of various shapes in the context of solving real-world problems. **6.G.1**
10. Explore the volume of 3-D shapes.
11. Convert units of measurement.
12. Recognize that a measure of center for a numerical data set summarizes all of its values. **6.SP.3**
13. Display numerical data in various forms. **6.SP.4**
14. Summarize numerical data sets in relation to their context. **6.SP.5**
15. Apply mathematics in practical situations and in other disciplines.
16. Use critical thinking skills to make sense of problems, solve them, and communicate processes. ***CRP 2, 4 & 8.***
17. Use technology to gather, analyze, and communicate mathematical information. ***8.1.8.A.1, 8.1.8.A.2, 8.1.8.A.4, 8.1.8.F.1***

Math Explorations 6 Proficiencies – *cont'd.*

18. Evaluate the relationship of cultural traditions and historical influences on financial practice. ***9.1.8.B.6***
19. Develop a system for keeping and using financial records. ***9.1.8.B.8***
20. Explain the economic principle of supply and demand. ***9.1.8.D.5***
21. Compare and contrast product facts versus advertising claims. ***9.1.8.E.3***
22. Compare the value of goods or services from different sellers when purchasing large quantities and small quantities. ***9.1.8.E.6***
23. Recognize the techniques and effects of deceptive advertising. ***9.1.8.E.8***

Assessment: Evaluation of student achievement in this course will be based on the following:

1. Unit Portfolio- During the course, portfolios will be maintained. These will include, but not limited to:
    - Journals
    - Classroom tasks
    - Presentations

2. Classwork- The students' daily work will be assessed according to the math practices outlined below:

    - Make sense of problems and persevere in solving them.
    - Reason abstractly and quantitatively.
    - Construct viable arguments and critique the reasoning of others.
    - Model with mathematics.
    - Use appropriate tools strategically.
    - Attend to precision.
    - Look for and make use of structure.
    - Look for and express regularity in repeated reasoning.