I. **RATIONALE – justification of need, citing data**
    Course Name: Middle School Computer Science (Coding)

    It is projected that there will be a 22 percent increase in mathematical and computer related jobs in the next 10 years. We have expanded math, science and computer offerings at our high schools in recent years. In order to prepare our students and peak interest in these courses, we need to offer similar courses to students during middle school. The concepts learned in middle school will be aligned with our high school math, CTE, and STEM courses.

II. **DESCRIPTION – course goals and objectives, pre-requisites, format**
    Students in grades 6 - 8 will learn programming fundamentals through a fun, engaging, and creative curriculum. Students will use critical and computational thinking while they create hands-on projects that will challenge them to create an Ohm's law simulator, draw intricate patterns, program sprites to mimic line-following robots, create arcade-style games, and more. Students will learn to:

    • Design software programs to solve a variety of problems.
    • Logically organize and analyze data.
    • Harness the power of repeat loops and recursion.
    • Use if/else statements and logical operators to make decisions.
    • Store data in variables and lists to use later in your program.
    • Read, store, and manipulate user input.
    • Implement key computer science algorithms like a linear search and bubble sort.

III. **ARTICULATION – reference to state standards, specific skills sets, and articulation with other courses**
    The curriculum will incorporate standards from the International Society for Technology in Education (ISTE) and the Computer Science Teacher Association (CTSA) standards. Computer sciences courses focus on computational thinking and its problem-solving process that includes formulating problems and logically organizing and analyzing data with highly engaging hands on simulations. This course will prepare students to continue their coding skills in high school courses such as Software Design, Computer Science, and Web Development.

IV.   **AUDIENCE – student group (school, grade, discipline) to be served**
Middle Schools Grades 6 through 8

V.   **RESOURCES – specific texts, materials, equipment needed**
Learn to Program with Scratch

VI.   **OUTCOME – evaluation of course effectiveness**
Annual evaluations by site and district administration

VII.   **IMPLEMENTATION – timeline to include pilot phase and annual evaluation of proposed course**
School Year 2015-2016

VIII.   **PROCESS – how teachers, parents, and students (when appropriate) were included in the decision making process**
Next steps in our efforts to provide STEM Curriculum to our teachers and students.

APPROVAL: _____   _*Michael Byar*_____

           Principal   date   Superintendent Designee   date

(NOTE: Must be submitted for Governing Board approval prior to the end of the current school year for implementation during the following school year.)