

BALTIMORE COUNTY PUBLIC SCHOOLS

Extra Duty Activity (EDA)

Name of EDA:	Mathematics, Engineering, Science Achievement (MESA)
School Level:	Elementary, Middle, High

Description of Activity: Maryland’s Mathematics, Engineering, Science Achievement program is a structured, K – 12, pre-college program designed to prepare students for academic and professional careers in mathematics, engineering, science, and technology. The program’s goals are to: increase the number of engineers, scientists, mathematicians, and related professionals at technical and management levels; and serve as a driving force in encouraging and assisting minorities and females in achieving success in these fields. Creating partnerships with colleges and universities, school systems, business and industry, government, community organizations, and parents and alumni, the MESA program includes: weekly MESA meetings; field trips; science fairs, engineering projects, and math competitions; Saturday academies; summer programs; career counseling, academic tutoring, and mentoring; computer/technology instruction; communication skills instruction; incentive awards; and workshops and training for teachers.

Under the direction of the principal, the MESA advisor conducts weekly meetings to instruct students in science concepts and math skills, facilitates completion of projects, and coordinates participation in the Regional MESA Day competition. Activities are designed to engage students in accurate observation, recording data, problem solving, and team work.

The MESA advisor needs to have a thorough knowledge of math and science concepts, possess excellent organizational and written or oral communication skills, demonstrate effective human relations and team-building skills, and be an enthusiastic MESA program booster.

Link to the Blueprint for Progress: MESA advisors support the system’s mission to provide a quality education for all students by supporting and supplementing the math and science curriculums by providing students with the opportunity to engage in hands-on activities. The program promotes interest in math, science, and engineering careers among minorities and women. MESA supports the *Blueprint’s* Performance goals 1.1 and 6.4.

Examples of Specific Duties of this EDA Sponsor	Estimated Hours
Preparation and Planning <ul style="list-style-type: none"> • Obtains principal’s agreement for school participation • Develops a calendar of meetings and events • Prepares invitation letters and visits classrooms to recruit participants • Registers participants in Maryland MESA database • Secures supplies for activities • Meets with parents to present overview of MESA activities and program expectations 	20 - 30

- Identifies activities to teach concepts from books and online resources, and adapts activities for use in the program
- Attends coordinator/advisor training workshop
- Meets weekly after school from October through May

Other EDA Duties

50 - 95

- Leads investigations into topics (such as Newton's laws)
 - Instructs in concepts through discussion, readings, demonstrations, and use of media resources
 - Guides students in the creation of products to test concepts
 - Facilitates making observations and recording data from tests of concepts
 - Guides students in analyzing data in order to draw conclusions about the topic
- Facilitates the completion of engineering projects (such as making balsa wood bridges and constructing theme park rides)
 - Explains project requirements and organizes project timelines
 - Assists students in identifying and acquiring materials needed for projects
 - Models the use of tools
 - Monitors student progress toward the completion of projects
- Assists students in preparing reports and displays to present data and conclusions from projects
 - Explains requirements for reports and displays
 - Presents models of exemplary products
 - Monitors student progress toward the completion of reports and displays
- Prepares students to make effective oral presentations about projects through questioning and rehearsals
- Facilitates student investigations of math/science/engineering careers through the scheduling of speakers and the use of media resources
- Plans and coordinates field trips to the Black Engineer of the Year Pre-College Fair and the regional, state, and national MESA Day competitions
- Supervises students on field trips
- Recruits parent volunteers to assist students with MESA projects
- Inputs student grades into the Maryland MESA database
- Prepares nomination for the MESA student of the year
- Coordinates school MESA fair
- Completes year-end reports on student participation and achievements for Maryland MESA

Estimated Annual Hours that a Teacher Might Spend to Sponsor this EDA: 70 – 125

Minimum Number of Students Required: 10

Annual Compensation

MESA is a Level I activity.