

**BILLINGS PUBLIC SCHOOLS
CONSTRUCTION I.E.P.
Adopted March 31, 2001**

MISSION STATEMENT

The Career Center is dedicated to providing Billings area students with an education that explores and enhances vocational and academic skills to promote critical thinking, self-discipline, and responsible citizenship.

BELIEF STATEMENTS

1. We believe in an environment that fosters mutual respect and dignity.
2. We believe that students and faculty should maintain pride in their work to improve their performance.
3. We believe that academic skills lay the foundation for critical thinking, problem solving, mathematical and communication skills.
4. We believe in the integration of academic and career areas.
5. We believe in the importance of current technology, and its impact on the future.
6. We believe that students who are encouraged to set goals will gain confidence in their potential and ability to contribute to society.
7. We believe mutual support between school and community is an integral part of a students learning experience.

PHILOSOPHY

This course offers the students the opportunities to gain basic knowledge in all phases of construction fundamentals. It emphasizes the importance of developing math skills which will be extremely helpful in which ever vocation a student may chose. This course also concentrates on developing work related competencies, interpersonal relations, enhancing critical and analytical thinking skills as well as giving students the confidence, knowledge, and experiences needed to pursue a career in the construction or related industries.

LEARNING DOMAINS

- I. The student will demonstrate an understanding various phases of safety procedures and applications.**
- II. The student will apply basic mathematics to complete various tasks dealing with the construction trades industries. (E)**
- III. The student will apply basic skills in the proper construction of various size sheds and related projects. (E)**
- IV. The student will apply skill in more advanced construction techniques**
- V. The student will demonstrate an understanding of appropriate work place skills.**

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Learner Objectives

I. The student will demonstrate an understanding in various phases of safety procedures and applications.

1. The student will demonstrate proper safe procedures while working with tools, apparatus, power equipment and materials. **(E)**
 - a. Complete safety tests on all equipment.
 - b. View instructor demonstrations on all equipment.
 - c. Demonstrate safe and proper use of equipment.
 - d. Maintain a safe, clean work environment.
 - e. Conduct shop activities in a safe manner.
 - f. View a variety of safety videos.
2. The student will demonstrate an understanding concerning OSHA, State and Federal agency safety procedures and applications. **(E)**
 - a. Listen to guest speakers.
 - b. Be exposed to appropriate manuals and literature.
 - c. Understand the importance of wearing safety glasses 100% of the time while in the working environment.
 - d. Participate and become certified in the safe operation of pneumatic power tools.
 - e. Demonstrate an understanding of basic first aid procedures.

II. The student will apply basic mathematics to complete various tasks dealing with the construction trades industries. (E)

3. The student will understand the importance learning to read various measuring devices. **(E)**
 - a. Take a pre-test to determine strengths and weaknesses.
 - b. Learn to read a tape to the 1/16" of an inch.
 - c. Utilize a framing square for appropriate purposes.
 - d. Apply skills needed to use combination square and tee bevels.
4. The student will apply basic math skills needed to figure and estimate costs of materials. **(I)**
 - a. Keep a notebook that contains material costs.
 - b. Maintain a notebook that contains materials uses.
 - c. Keep a notebook that contains total costs plus incidentals.
 - d. Consistently select, using and evaluating appropriate work place skills for learning, trouble shooting and productivity.
 - e. Contact suppliers to obtain current market prices for materials.
 - f. Calculate material needed to complete a project.

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Learner Objectives

II. The student will apply basic mathematics to complete various tasks dealing with the construction trades industries. (E) (cont.)

5. The student will apply basic math skills in order to complete required projects. (E)
 - a. Complete a saw horse.
 - b. Understand compound angles.
 - c. Understand lumber dimensions.
 - d. Utilize a hands on approach to better understand fractions.
 - e. Gain a better understanding of how to add and subtract fractions.
 - f. Follow written, verbal and demonstrated instructions.

III. The student will apply basic skills in the proper construction of various size sheds and related projects. (E)

6. The student will demonstrate an understanding of appropriate industry standard techniques for building a shed. (I)
 - a. Keep a notebook that contains step by step instructions and basic drawings.
 - b. Figure material and costs for each component of a shed.
 - c. Lay out a floor section figured on sixteen inches on center.
 - d. Understand appropriate terminology, such as top plate, bottom plate, studs, headers and rough openings.
 - e. Cut and apply siding in the appropriate manner.
 - f. Set walls using proper techniques.
 - g. Build trusses with four twelve pitches.
 - h. Lay out trusses, sheath and apply roofing materials.
 - i. Utilize appropriate techniques for finishing trim, soffit and fascia.
 - j. Utilize appropriate finishing techniques for caulking and painting.
7. The student will demonstrate a basic understanding of construction techniques.
 - a. Participate in community type projects when available.

IV. The student will apply skill in more advanced construction techniques. (I)

8. The student will participate in more advanced construction applications by participating in small groups.
 - a. Demonstrate proficiency in basic plumbing techniques.
 - b. Lay out plumbing to simulate kitchen, shower and bath applications.
 - c. Learn proper techniques for sweating copper fittings.
 - d. Pressure test soldered joints.
 - e. Learn basic techniques for wiring a receptacle, outlet and switch.
 - f. Installing switches, light fixtures and receptacles utilizing appropriate codes.
 - g. Understand the importance of following required codes.
 - h. Demonstrate proper techniques for cutting and applying sheetrock.
 - i. Demonstrate proper techniques for apply sheetrock tape and mud.
 - j. Understand proper finishing technique.
 - k. Mix and apply textures to acquire desired finish textures.

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V. The student will demonstrate an understanding of appropriate work place skills. (I)

9. The student will demonstrate proper safe procedures while working with tools/apparatuses/equipment/systems/and materials. (E)
 - a. Follow all safety rules and procedures.
 - b. Maintain a safe, clean work environment.
 - c. Conduct shop activities and equipment operations in a safe manner.
10. The student will demonstrate an understanding concerning OSHA, state and federal agency safety procedures and application.
 - a. Listen to guest speakers.
 - b. View videos on safety procedures.
 - c. Use internet applications for said safety regulations.
11. The student will display an understanding and appreciation for dignity and worth of honest labor. (I)
 - a. Form an understanding and appreciation for behaviors, attitudes, work ethics needed in the real world of work.
 - b. Develop personal qualities, individual responsibilities, self esteem, self management, sociability and integrity.
12. The student will explore various aspects of workplace readiness. (I)
 - a. Understand that skills developed in academic and occupational programs relate to career goals.
 - b. Demonstrate critical and analytical thinking skills.
 - c. Discuss and demonstrate strategies to overcome bias and stereotyping in the work place.
 - d. Evaluate and adjust personal career goals.
13. The student will develop an understanding of the importance of work place competencies. (R)
 - a. Discuss the importance of resources, identify and organize plans and allocating resources.
 - b. Discuss the importance of interpersonal skills while working with others.
 - c. Explore the importance of acquiring and using information.
 - d. Understand the importance of technology and its implications in the world of work.
 - e. Understand the importance of developing thinking skills that permits creativity, decision making, problem solving, and critical thinking skills.
 - f. Identify skills that promote negotiating, exercising leadership skills, working with diversity, teaching others new skills and participating as a team member.
 - g. Understand the importance of reading, writing, speaking, listening and knowing arithmetic and math skills.
 - h. Demonstrate the importance of problem solving and decision making by specifying goals and constraints, generating alternatives.

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Learner Objectives

VI. The student will demonstrate an understanding of appropriate work place skills.

(I) (cont.)

14. The student will develop and understanding of available options after High School.

(I)

- a. Discuss post-secondary education opportunities.
- b. Understand articulation agreements available.
- c. Listen to guest speakers.
- d. Explore options via internet.
- e. Participate in job shadowing and school to career alternatives.