

Building Design Program (BDP)

The Building Design Program (BDP) was created in 1997 and is structured to introduce construction in a positive and fun manner, while presenting challenges in math, communication and design. Most uniquely, through an estimating exercise, the students use applied math skills. (Applied math skills are a major obstacle in passing apprenticeship exams.)

The BDP is a team-based program introducing students to the imaginative world of construction through these objectives:

- Enhance awareness of construction industry careers and professions;
- Enhance relationships between math, science, technology and communication as they relate to the construction industry;
- Foster critical thinking, problem solving and creativity.

Upon completion of the Building Design Program students will have been introduced to the following concepts:

Math Concepts

Students will:

- Scale - Develop an understanding of the concept of “scale” as it relates to the construction industry. Scale is the proportion used to determine the relationship of a representation to that which it represents. Example 1/4 inch is equal to 1 foot. This is quarter scale.
- Estimating – Learn the process of judging or calculating the quantity of materials, labor and equipment required for a given piece of work; make judgments as to the best use and costs of materials, labor and equipment.
- Conversion – Learn the process of changing from one form into another, such as the skills used to make a drawing to scale.
- Measurement - Demonstrate the ability to measure to 1/4 inch to be able to work with their sketches and floor plan drawings.

Science Concepts

Students will:

- Brainstorming - Use brainstorming techniques to explore a variety of floor plans and design options. No judgment is made as to the value of one option over the other until the process is complete.
- Problem Solving - Analyze the development of a possible solution and then implement the proposed solution. The solution is then evaluated to determine its appropriateness in relationship to the problem. Generally, problem solving model is:

Input - Process - Output - Feedback

Communication Concepts

Students will:

- Listening - Develop skills in listening to others and following directions.
- Writing – Create written reports and present the project for evaluation.
- Oral Speaking – Present their project to a larger group, and discuss their reasoning and point of view.
- Researching and Reading – Research and read materials necessary to develop decisions, create the project and communicate their ideas effectively.

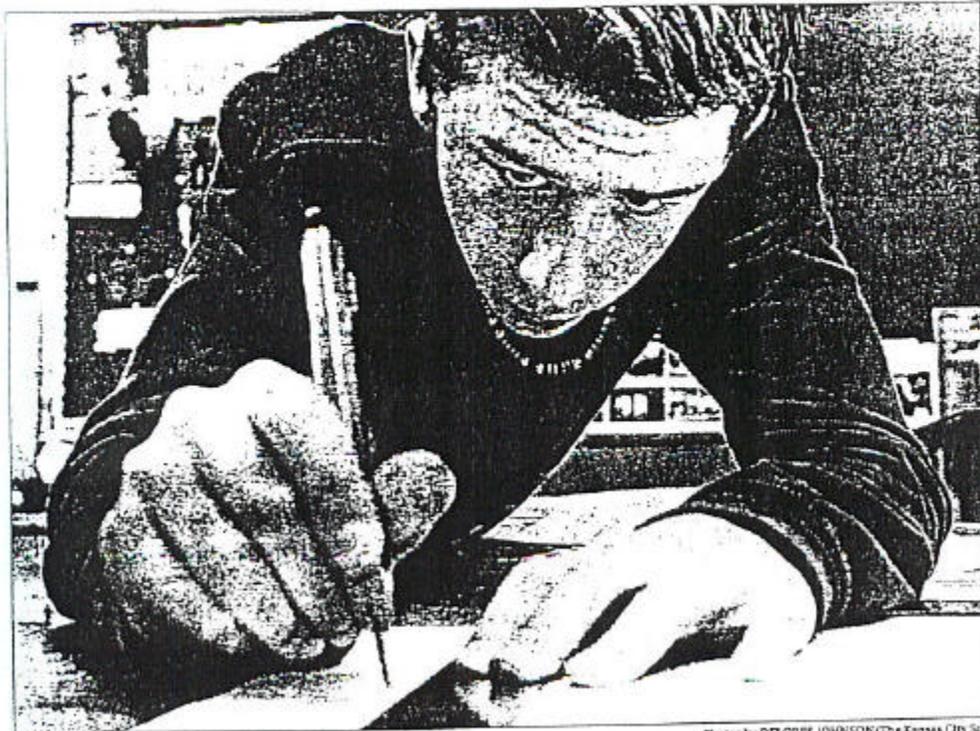
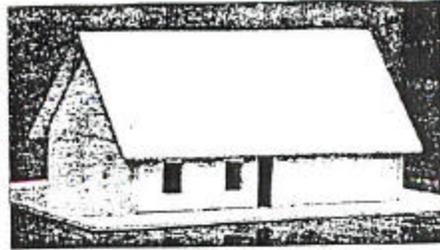
Under the guidance of an instructor the teams of students will complete the design of a 1,000 square foot house for a family of four keeping the cost under \$25,000. The program follows a ten-lesson plan layout including keeping a journal (job log), floor plan sketches, site plan layout, job costs worksheets, a report on five construction industry careers, a scaled model and a final report.

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Photos by DELORIS JOHNSON/The Kansas City Star
Tanner Feedback, above, and other students in Diane Keane's course at Holden Middle School in Holden, Mo., learn the principles of design and construction and put their knowledge to work by creating model houses such as the one in the top photo.