

Lesson A1–6

Understanding Construction Codes

Unit A. Mechanical Systems and Technology

Problem Area I. Introduction to Agricultural Mechanics and Technology Systems

Lesson 6. Understanding Construction Codes

New Mexico Content Standard:

Pathway Strand: Power, Structural and Technical Systems

Standard: V: Read and relate structural plans to specifications and building codes.

Benchmark: V-A: Examine blueprints and local codes to develop a logical construction plan.

Performance Standard: 4. Identify local code enforcement agencies and procedures. 5. Read and interpret local code information.

Student Learning Objectives. Instruction in this lesson should result in students achieving the following objectives:

1. Describe the reason for building codes.
2. Explain the different types of building codes.

List of Resources. The following resources may be useful in teaching this lesson:

Recommended Resources. One of the following resources should be selected to accompany the lesson:

International Building Code 2000. Falls Church, VA: International Code Council, 2000.

International Residential Code for One-and Two-Family Dwellings 2000. Falls Church, VA: International Code Council, 2000.

List of Equipment, Tools, Supplies, and Facilities

Writing surface
Overhead projector

Terms. The following terms are presented in this lesson (shown in bold italics):

ICC Electrical Code
International Fire Code
International Fuel Gas Code
International Mechanical Code
International Plumbing Code
International Private Sewage Disposal Code

Interest Approach. Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Ask students why there are laws that require people to wear seatbelts in cars. After some discussion, the point to promote safety of the passengers should be discussed. Relate this to building codes in that they are developed for the safety of people living and working in them.

Summary of Content and Teaching Strategies

Objective I: Describe the reason for building codes.

Anticipated Problem: Why do we have building codes?

- I. Construction codes are a complex and confusing body of regulations and legal documents. Building codes establish minimum regulations for building systems using prescriptive and performance-related provisions. The main reasons building codes are developed and enforced is to protect the health, safety, and welfare of people. These codes include specific

requirements for building materials, fire protection, structural design, light and ventilation, heating and cooling, sanitary facilities, and energy conservation.

A variety of techniques may be used to assist students in mastering this objective. Students should use text materials to understand the reason for building codes.

Objective 2: Explain the different types of building codes.

Anticipated Problem: What are the different types of building codes?

- II. There are several different codes that affect the construction of buildings. There is no single code that is used throughout the country. A move to uniformity is taking place however. Seventeen states have established statewide building codes that prohibit local amendment without state approval. Statewide codes provide builders with a consistent book of rules. In other states, each local municipality enforces a set of regulations. In most cases these are very similar, but there can be stark differences. Most municipalities don't develop their own complete set of regulations. Most adopt all or part of one of the model codes. The recognized model codes are: The Building Officials & Code Administrators International, Inc. (BOCA), The International Conference of Building Officials (ICBO), The Southern Building Code Congress International, Inc. (SBCCI) and The Council of American Building Officials (CABO). Municipalities throughout a given region generally favor one model code. For example, some version of SBCCI Standard Building Code is adopted by the states south of the Mason-Dixon line and east of the Mississippi. Even with the model codes, there are several specific codes. Some of them are:
- A. Electrical—The provisions of the **ICC Electrical Code** apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, and fittings.
 - B. Gas—The provisions of the **International Fuel Gas Code** apply to the installation of gas piping from the point of delivery, gas appliances, and related accessories.
 - C. Mechanical—The provisions of the **International Mechanical Code** apply to the installation, alterations, repairs, and replacement of mechanical systems, including ventilation, heating, cooling, air-conditioning, and refrigeration systems.
 - D. Plumbing—The provisions of the **International Plumbing Code** apply to the installation, alterations, repairs and replacement of plumbing systems including equipment, appliances, fixtures, and fittings. The provisions of the **International Private Sewage Disposal Code** apply to private sewage disposal systems.
 - E. Fire prevention—The provisions of the **International Fire Code** apply to matters affecting the hazard of fire and explosion arising from the storage, handling, or use of structures, materials or devices; from conditions hazardous to life, property, or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration, or removal of fire suppression and alarm systems.

A variety of techniques may be used to assist students in mastering this objective. Students should use text materials to understand the different types of building codes.

Review/Summary. Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Questions at the end of each chapter in the recommended textbooks may also be used in the review/summary.

Evaluation. Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance, on the application activity. A sample written test is attached.

Answers to Sample Test:

Part One: Matching

1 = c, 2 = b, 3 = e, 4 = f, 5 = a, 6 = d

Part Two: Completion

1. Seventeen
2. do not
3. performance-related

Part Three: Short Answer

The Building Officials & Code Administrators International, Inc. (BOCA)

The International Conference of Building Officials (ICBO)

The Southern Building Code Congress International, Inc. (SBCCI)

The Council of American Building Officials (CABO)

Test

Lesson A1–6: Understanding Construction Codes

Part One: Matching

Instructions. Match the term with the correct response. Write the letter of the term by the definition.

- | | |
|--------------------------------|---|
| a. ICC Electrical Code | b. International Fire Code |
| c. International Fuel Gas Code | d. International Mechanical Code |
| e. International Plumbing Code | f. International Private Sewage Disposal Code |

- _____ 1. Applies to the installation of gas piping from the point of delivery, gas appliances, and related accessories.
- _____ 2. Applies to matters affecting the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices.
- _____ 3. Applies to the installation, alterations, repairs, and replacement of plumbing systems.
- _____ 4. Applies to private sewage disposal systems.
- _____ 5. Applies to the installation of electrical systems.
- _____ 6. Applies to the installation, alterations, repairs, and replacement of mechanical systems.

Part Two: Completion

Instructions. Provide the word or words to complete the following statements.

1. _____ states have established statewide building codes that prohibit local amendment without state approval.
2. Most municipalities _____ _____ develop their own complete set of regulations.
3. Building codes establish minimum regulations for building systems using prescriptive and _____ provisions.

Part Three: Short Answer

Instructions. Provide information to answer the following question.

List the Model Codes.