



## Careers in Action

## TEKStar Lesson Summary

Lesson Title Does the Shoe Fit?

Grade Level Eighth Grade

Course Number 113.24

Course Name Social Studies, Eighth Grade

### Keywords

manufacturing, free enterprise system, persuade, maquiladora, economy, competitive, product standards, engineering, engineer, blueprint, prototype, career

### SE Course

SS 113.24: 8.30(A)(B)(C)(E)(F)(H), 8.31(B)(C)(D), 8.32(A)(B)

### SE Cross Curricular

ELA 110.24: 8.1 (A)(C), 8.2 (A)(B)(F), 8.5 (A)(B)(E)(F), 8.8 (B)(C)(D), 8.10 (G)(H)(L), 8.11 (B), 8.12 (C), 8.13 (A)(C)(D)(E)(F)(G)(H)(I), 8.15 (A)(B)(C)(E)(F), 8.18 (F)(I), 8.20 (B)(C)(E)(F), 8.24 (A)(B)(C)

M 111.24: 8.6 (A), 8.7(B), 8.14 (A)(B)

SC 112.24: 8.5 ( A)(B)

Business Venture 120.3:1 (E)(G), 2 (B)(D)(E), 3 (B)(C)(D)(E)

Exploring Manufacturing Technology 123.16: 2 (B), 3 (A), 9 (B), 15 (A)(B)(C)(D), 16 (A), 18 (B)(G)(H)

### TAAS

SS 7: 2:8.13 (A), 8.28 (C), 8.30 (B)(C), 8: 8.30 (B)

RE 5: 8.13 (D)(G)

WR 1: 8.15 (B)(C)(E)(F), 8.18 (E)

SC 2:8.5 (A)(B)(C)

### TAAS II/TAKS

SS 3: 8.15 (A), 5: 8.30 (B)(C)

RE 4: 8.11 (C)(D)

WR 1: 7.15 (A)(B)(C)(H)

SC 1: Bio (2) & IPC (2)(A)(B)(C)(D), 5: IPC (4)(A)(B)

## Lesson Summary

TEKS, TAAS/TAKS, and personal skills valued by educators and employers are taught as students experience the career area of **Industrial and Engineering Technology**.

In this lesson, students identify the components of a shoe and explore the jobs involved in the manufacturing of shoes. They determine what type of shoe would be profitable to make and write product standards for that shoe. They then research and create a persuasive presentation to entice a business to locate in their town. Students culminate the lesson by using their engineering and manufacturing “know how” to develop and establish detailed directions for building a shoe box that can be used as a prototype for manufacturing.

Arrangements are made with the Tech Prep Office at (956) 364-4548, Fax (956) 364-5143 or by using Tech Prep Inc.’s website (<http://techprepRGV.com>) for a speaker, mentor, and/or field trip. These experiences enable students to investigate the actual careers in action.

**This lesson was developed in Summer 2000 as part of a Careers in Action project led by Tech Prep of the Rio Grande Valley, Inc., and funded with School-to-Careers grant funding through the Texas Education Agency and the Texas Workforce Commission. Following a pilot project by Tech Prep Support Teams, revisions were made in the Spring of 2002.**

**This lesson has been endorsed by Mike Allen, President/CEO of McAllen Economic Development Council, MEDC, McAllen, Texas, and by Cesar Maldonado, Vice President of Manufacturing Systems, Assa Abloy Door Group, Harlingen, Texas.**

## Evidence of Success

Students will research and prepare persuasive presentation, participate in a decision making process, and then create and manufacture a product.

## Personalize the Learning

Have students take off one of their shoes. On a piece of paper have students list all of the components that make up their shoe (example: rubber, plastic, cotton, metal, paint, leather, dye, etc.). Discuss the similarities and differences among the various types of shoes in the classroom, such as tennis shoes, sandals, boots, etc. Then guide the discussion toward the business aspect of materials used, costs, marketing strategies, etc.

Discussions may include explanations involving the free enterprise system, past and present, and the benefits of the free enterprise system. Example: “Successful manufacturing businesses carefully plan their locations for many reasons. They must be able to save money on labor, have accessibility to raw materials, and manageable transportation costs, etc. in order to provide a reasonably priced product. If products are expensive, it may not be because of the brand name. The production of one shoe encompasses millions of jobs from the shoe engineer, the mold maker, the manufacturer, the people or machines assembling the shoe, the custodians at manufacturing plants, the truck driver, the store owner, the sales clerk, the armor car driver, the bank teller, etc. Would any of these jobs exist without someone first thinking of the idea of a product to manufacture?”

## Relevance

After visiting with various persons in the business community, it became evident how important persuasive skills are for speaking and for public presentations. One of the main purposes of the McAllen Economic Development Corporation is to persuade businesses world wide to locate and manufacture their products in McAllen, Texas and/or in a maquiladora, or twin plant, in Mexico. Jobs and money generate a successful economy for the people of McAllen.

Students may have someone in their own family who has worked in a manufacturing plant. Ask them how many of their family or friends work in the area of manufacturing or in Mexico’s Maquiladora system. Ask the students to explain or describe what they know of the Manufacturing/Maquiladora system found along the Mexico/U.S. border. A maquiladora is a foreign-owned manufacturing plant in Mexico that makes or assembles parts into finished or semi-finished products for export to other countries. Goods include televisions, seat belts, electric motors, athletic shoes, microcomputer chips, computer hard drives and monitors, airplane parts, etc.



**Know It  
Do It  
Think It**

**Activity 1**

**Careers in Action**

**TEKStar Activity Summary**

**Lesson Title** Walkers and Talkers **Time Frame** 90 Minutes

**Activity Description**

1. The teacher will divide the class into 6 groups (3 business groups and 3 town site groups).
2. The teacher will ask the three business groups to decide what type of shoe they will be “manufacturing”. What shoe do they think the public would want? What type of shoe would the customers buy? Have the three groups write a brief description of the type of shoe they all decide on such as “a leather running shoe with four eyelets for laces and two inch thick soles, etc.” Explain that their shoe description is like product standards in industry. The students need to realize that to be successful, the product must be reproducible. Then each group can be creative as to the details of their shoe. Have them think about what features and details would make their shoe more competitive such as color, design, cost, etc.
3. Have each business group produce a sample or model product of their shoe either through drawings, clay, or altering an existing shoe. Optional: To enhance this portion of the lesson, the teacher will provide the business groups with the cost of materials such as leather, black rubber, black vinyl, etc. (The teacher can get this information from a local plant, the Internet or local Chamber of Commerce.) Also, the students need the cost for transportation for the raw materials.
4. The teacher will ask each town-site group to choose a city in Texas or the United States that they will be representing and ultimately “selling” to the business group in order to help entice them to locate in their represented city. (The city must have a website available in order to obtain information quickly. This will usually be the larger cities or metropolis)
5. The teacher will explain the business situation using the product and locations the students have selected. The teacher may say, “Each shoe business group will be selecting a town in which to locate its multimillion dollar manufacturing plant. They have narrowed their choices to your towns. Each town-site will prepare a creative, persuasive presentation to entice one, two, or all three businesses to locate in your town. Therefore, thousands of jobs will be provided which in turn will generate more money for your town.
6. Assign an appropriate amount of time for all groups to make a decision on a product or town. Making the deadline is worth 25 points! (See assessment.)

### Teacher-to-Teacher Notes

1. Students need to check the Internet for available information on their chosen town **before** making their final decision of a town. (Most large towns have web pages.)
2. Internet research may be completed for homework or in a lab setting.
3. To make the lesson more relevant to your hometown, have one town site group choose your own hometown (provided that information is available via the Internet through your local Chamber of Commerce).

\*To search the Internet for town information, students will simply type in the town and state as the URL address. For example: McAllen, Texas. A listing of various websites will appear.

\*Information on the labor market available in the field of industrial and engineering technology in the Rio Grande Valley can be found at the following Tech Prep website:  
<http://www.techprepRGV.com>

### Objective

The student is expected to brainstorm and select either a business group and a product to “manufacture” or a town to represent. The student will prepare a persuasive presentation. The business groups will develop a shoe to “manufacture.” The town group will prepare a persuasive presentation about their town to recruit as many business groups as possible.

### Materials

Shoes  
Internet information  
Maps  
Almanacs  
Atlases  
Chamber of Commerce publications  
clay (optional)

### Technology Utilization

Internet  
PowerPoint (optional)

**SE - Course**

SS 113.24: 8.30 (A), 8.31 (C)(D)

**SE - Cross Curricular**

ELA 110.24:8.1 (A)(C), 8.2(B), 8.13 (D)(G), 8.24 (A)  
Exploring Manufacturing Technology 123.16:2 (B), 3 (A), 18 (B)(G)(H)

**TAAS**

SS 7: 8.30 (C), 8: 8.30 (B)

**TAAS II/TAKS**

SS 2: 8.10 (B), 8.11 (C), 8.15 (A)  
SC 1: Bio (2) & IPC (2)(A)(B)(C)(D), IPC (3)(A)(B)

**Check for Understanding**

Have students write on the chalkboard the final decisions made by their group at the end of the allocated time. Examples:

Plant Location	Product to “Manufacture”
Group 1- McAllen	Group 1- Sandle
Group 2- Houston	Group 2- Tennis shoe
Group 3- Amarillo	Group 3- Boots

**Assessment**

The teacher may assign points in the form of a cumulative rubric. Twenty-five (25) points may be assigned at this first part of the lesson for the cooperative decision-making process completed in before the time allocated ends.

**Learning Styles**

Concrete Random  
Abstract Random

**Multiple Intelligences**

Verbal/Linguistics  
Interpersonal

**Thinking Skills**

Basic  
Engaged

**Accommodations**

Adapted Assignments  
Assistive Technology/Materials  
Instructional Support

**Extensions**

Complexity

**Resource Pages**

None



Know It  
Do It  
Think It

Activity 2

Careers in Action

TEKStar Activity Summary

Lesson Title Sneaky Sneakers

Time Frame 45 - 60 Minutes

### Activity Description

1. The town-site groups will begin researching and preparing for their persuasive presentations. Creativity and accuracy is crucial to persuade businesses to locate in their town-site. Using the Internet, students must decide what information is critical as well as helpful to each business. For example, geographic location, labor force availability, cost of living, energy cost, schools, housing availability, road conditions, land cost, tax rates, quality of life, etc. The groups will prepare visual aids, speeches, etc. for the proposed meeting with each business. Remind students they must **persuade** a business, so be creative.

2. The business groups will be brainstorming what they are looking for in a town where they may locate their manufacturing plant and list them on paper. For example, geographical location, labor force availability, cost of living, energy cost, schools, housing availability, road conditions, transportation costs, land costs, tax rates, quality of life, etc. Each group must then prepare a list of questions to be used in the interview of each town-site. Students may need to research all the aspects involved in shoe making via the Internet, other applicable software, listen to a local shoe manufacturer, or visit a shoe manufacturing plant. Remind students that in order to be successful and profitable, manufacturing businesses must be near their resources.

### Teacher-to-Teacher Notes

The town-site information will focus on the positive aspect of their city but let them know that they must be aware of any negatives in case they are asked by the business groups. The business groups really need to focus on their product components and think globally. These are some questions to get this group brainstorming. How will they be able to transport their raw materials to a town site? Will there be enough skilled labor? What skills are needed in order to make a shoe? What departments will be in such a company? What jobs will be available? Is there housing for people who may need to relocate? Are there any local suppliers available? Is there enough land for the plant? Are utilities available? What type of taxes will they pay and how much?

For homework, students could choose a business from the yellow pages and call to ask the business why it located in their area. This information could be shared and used to improve presentations and interview questions.

**Objective**

The student is expected to research information and either prepare persuasive presentation aids or and appropriate interview questions.

**Materials**

Research software  
POWERPOINT software  
Materials for visual aids, such as transparencies  
Markers  
Posters  
Props (optional)  
Music (optional)  
Town websites, etc.

**Technology Utilization**

Internet  
Research software  
Overhead projector  
POWERPOINT software

**SE - Course**

SS 113.24: 8.30 (A)(B)(C)(H), 8.31 (B)(C)(D), 8.32 (A)

**SE - Cross Curricular**

Exploring Manufacturing Technology 123.16: 9 (A)(B), 15 (A), 16 (A), 18 (B)(G)(H)  
ELA 110.24: 8.1(C), 8.8 (B)(C)(D), 8.10 (G)(L), 8.12 (C), 8.13 (A)(C)(D)(E)(F),  
8.15 (A)(B)(C)(E), 8.18 (F)(I), 8.20 (B)(C), 8.24 (A)  
Business Venture 120.3: 3 (C)(B)(E), 2 (E)

**TAAS**

WR1: 8.15 (B)(C)(E)(F), 8.18 (E)  
RE 5: 8.13 (D)(G)  
SS 2: 8.13 (A), 8.28 (C)

**TAAS II/TAKS**

RE 3: 8.12 (A)(C)(H)  
ELA 1:8.10 (F)(G), 3:8.10 (E)(I)(L)

**Check for Understanding**

1. Teacher monitors and guides when necessary while students are researching.
2. Teacher may involve students in developing a Presentation Rubric and an Interview Rubric. Students may then use the appropriate rubric to monitor the preparation for their presentations/interviews. (Items may include: creativity, neatness, accurateness, professionalism, appropriate dress, etc.)

**Assessment**

The teacher may assign the next 50 points for the presentations developed by the town groups or the list of completed questions created by the business groups.

**Learning Styles**

Concrete Sequential  
Abstract Sequential  
Concrete Random  
Abstract Random

**Multiple Intelligence**

Verbal Linguistic  
Visual/Spatial  
Logical/Mathematical  
Interpersonal

**Thinking Skills**

Basic  
Engaged

**Accommodations**

Adapted Assignment  
Assistive Technology/Materials  
Instructional Support

**Extensions**

Acceleration

**Resource Pages**

None



**Careers in Action**

**TEKStar Activity Summary**

Lesson Title Put Your Best Foot Forward!

Time Frame 90 Minutes

**Activity Description**

Dressed in appropriate business attire, business and town site groups will formally interview each other on a rotational basis for 20 minutes. At the end of this time, allow the business groups to debrief and decide on one town site and explain why it was chosen. While the business groups are debriefing, allow for the town-sites to predict which businesses will locate in their town and why.

After debriefing, have the business groups present to the class their decision along with their explanation for their location choice.

Optional: The class could end with a ceremony that could include a ribbon cutting. Local city officials, such as the mayor, city council members, chamber of commerce, etc. may be invited to hear about the project and celebrate the “opening” of the businesses. This celebration could include punch and cookies for the participants.

**Teacher-to-Teacher Notes**

Stress to the students the formality of the interviewing and the importance of dressing and behaving for success. Teachers may need to do a quick mini-lesson on proper interviewing skills such as, speaking one at a time, proper dress attire, organization, preparedness, politeness, good listening skills, time management, punctuality, etc.

**Objective**

The student is expected to participate in persuasive presentations or interviews and to utilize decision-making skills effectively in the selection of a location for a manufacturing company.

**Materials**

Visual aids created by students  
Video Camera (optional)

### Technology Utilization

Possibly a computer for POWERPOINT presentation, TV, VCR, overhead projector, etc. (dependent on student-made visual aids).

### SE - Course

SS 113.24: 8.30 (B)(E)(F)(H), 8.32 (A)(B)  
Exploring Manufacturing Technology 123.16: 15 (A), 16 (A), 18 (B)(G)(H)  
Business Venture 120.3: 1 (G)(E), 3 (C)(D), 2 (B)(D)(E)

### SE - Cross Curricular

ELA 110.24: 8.15 (B)(E)(F), 2.24 (A)(B)(C), 8.1 (C), 8.2 (A)(B)(F), 8.5 (A)(B)(E)(F), 8.10 (H), 8.13 (G)(H)(I), 8.20 (E)

### TAAS

SS 8:8:30 (B)

### TAAS II/TAKS

SS 5: 8.30 (B)(C)

### Check for Understanding

1. Teacher may ask questions of each group to check on preparation for oral presentations/interviews.
2. Teacher may have each group do a mock oral presentation several days prior to the actual presentation.
3. Selected students in each group may use Presentation and Interview Rubrics to provide feedback to critique their own group.

### Assessment

The teacher may assign the remaining 25 points for a possible total of 100 points upon completion of the presentations/interviews by using the two rubrics as applicable to each group's work.

**Learning Styles**

Abstract Sequential  
Concrete Sequential

**Multiple Intelligence**

Body/Kinesthetic  
Interpersonal  
Verbal/Linguistic  
Visual/Spatial  
Logical/Mathematics

**Thinking Skills**

Basic  
Engaged  
Dynamic

**Accommodations**

Instructional Support  
Adapted Assignment

**Extensions**

Performance Options

**Resource Pages**

None



Careers in Action

TEKStar Activity Summary

Lesson Title If the Shoe Fits...Wear it! Time Frame 90 - 120 Minutes

Activity Description

1. Invite a manufacturing engineer to visit your classroom to explain the process he/she follows to develop a prototype of a product for the manufacturer to produce. Ask that he bring drawings and models, etc., of actual prototypes.

**To help you schedule a visit contact the Work-Based Experiences Specialist at the office of Tech Prep of the Rio Grande Valley, Inc. in Harlingen, Texas at (956) 364-4548.**

Note: Due to safety hazards most manufacturing companies can not permit student visits. However, if you would like to take your students to visit a manufacturer in your area, call the Tech Prep office for information and assistance.

2. Students will apply their experience in engineering and manufacturing. Pair students and give each a shoe box, both the top and bottom pieces. Set up the scenario by telling the students, "Today, each of you is a successful shoe box manufacturer. It is three weeks before back to school sales and you are in a panic because someone has lost the engineering plans for building the shoe box that you have. Your job today is to draw the engineering plans for building the shoe box. All you have is a sample, so you must work backwards. Your directions must be drawn to precise detail (much like blueprints) and be sequentially correct. One missing or incorrect detail will cause major problems in the final product. After your directions are complete, you will test your directions by giving them to another group to follow and hopefully, produce a shoe box."

When groups trade directions, give them two poster boards, scissors, tape, and a ruler to build the shoe boxes. If the directions are drawn accurately and followed precisely, the end result should be a shoe box.

Groups may receive ten bonus points if they can correct another group's drawn directions to increase accuracy.

### Teacher-to-Teacher Notes

Depending on student ability, larger groups may be necessary. Teachers may need to guide students to focus on the details of the box, the size, the folds, etc. Sample blueprints from local manufacturing plants may be exposed to the students. If blueprints are unavailable, samples may be shown of directions from toys, model cars, legos, etc. that typically use visuals rather than words. Students quickly learn that precision is critical. Relate this to students by describing an airplane with one screw that doesn't fit precisely in the hole and the resulting problems.

If you want your students to have a more challenging hands-on experience with engineering and manufacturing using high tech, contact the office of Tech Prep of the Rio Grande Valley, Inc. at (956) 364-4548. Ask to speak with the coordinator for the Manufacturing Technologies Laboratory (MTL). The MTL is a traveling laboratory that allows students the opportunity to design projects with computers and then to program the computers to manufacture their projects. Students work with three programs: CAD(Computer Aided Design), CAM (Computer Aided Manufacturing, and CNC (Computer Numeric Control, this service does require a fee.)

#### Additional Resource Books:

The Art of Construction, by Mario Salvadori, ISBN: 1-556-52-080-8

KidTech, by Lucy Mille, ISBN: 1-57232-541-0

Why Design?, by Anna Slafer and Kevin Cahill, ISBN: 1-55652-249-5

National Science Foundation Engineering Senior Design Projects to Aid the Disabled, edited by John Enderle, ISBN: 0-936386-74-6

### Objective

The student is expected to develop and follow detailed directions for building a shoe box.

### Materials

One shoe box per pair of students, two poster boards per pair of students, one pair of scissors per pair of students, one ruler per pair of students, masking tape, various blueprints or visual directions (optional)

### Technology Utilization

Manufacturing Technologies Laboratory (MTL), (optional)

**SE - Course**

ELA 110.24: 8.1 (A), 8.5 (B), 8.13 (E), 8.24 (A)(C), 8.11 (B), 8.20 (F)

**SE - Cross Curricular**

M 111.24: 8.6 (A), 8.7 (B), 8.14 (A)(B)

SC 112.24: 8.5 (A)(B)

Exploring Manufacturing Technology 123.16: 18 (B)(G), 15 (A)(B)(C)(D), 9 (B)

**TAAS**

SC 2:8.5 (A)(B)(C)

**TAAS II/TAKS**

SC 1: Bio (2) & IPC (2)(A)(B)(C)(D)

WR 1: 7.15 (A)(B)(C)(D)

**Check for Understanding**

Teacher will monitor groups as needed and may “test” the directions by trying to follow them exactly as written.

**Assessment**

The teacher may use the following rubric for a grade:

50% creation of drawn directions/“blueprints”

50% following directions/“blueprints” to create shoe box

Bonus: 10 points for correcting another group’s directions for increased accuracy.

The teacher will grade a report that students write explaining what they learned about engineering and manufacturing from making a shoe box.

**Learning Styles**

Concrete Sequential  
Abstract Sequential  
Concrete Random  
Abstract Random

**Multiple Intelligence**

Intrapersonal  
Visual Spatial  
Logical Mathematical  
Interpersonal

**Thinking Skills**

Dynamic

**Accommodations**

Adapted Assignment  
Instructional Support

**Extensions**

Depth and Rigor  
Complexity

**Resource Pages**

None