



Careers in Action

TEKStar Lesson Summary

Lesson Title The Best of Texas: Healthy Students

Grade Level 4th

Course Number ELA 110.6 Course Name English Language Arts, Fourth Grade

Keywords

immunization, disease, research, virus, immunized, cell, booster, Hepatitis B, Diphtheria, Tetanus, Pertussis, Influenza, Polio, Pneumococcal, Conjugate, Measles, Mumps, Rubella, Varicella, optomologist, dentist, cardiologist, otolaryngologist, dermatologist, gastroentologist, hematologist, nephrologist, neurologist, oncologist

SE Course

ELA 110.6:4.5 (C), 4.11 (B), 4.13 (E), 4.15 (C)

SE Cross Curricular

SC 112.6:4.2 (B)(C)(D), 4.3 (B)(E)
SS 113.6:4.21 (B)(C), 4.24 (B)
Fine Arts/Theatre 117.16:1 (C)(E), 4.2 (C)(D), 4.3 (D)
HE 115.6:4.3 (A)(B), 4.4 (E), 4.5 (B)(C), 4.11 (E)

TAAS

WR 1:4.15 (B)(C)(D)
RE 4:4.11 (A)(D)

TAAS II/TAKS

WR 1:4.15 (A)(C)
RE 1:4.10 (F)(G), 4:4.10 (H)(J)

Lesson Summary

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

After observing the myriad of health related activities found under the umbrella of the Texas Public Health Department, it becomes clear that scientific and technological knowledge are needed. The student learns about Public Health services and the character traits necessary to work cooperatively in a group. This lesson includes a collaborative class effort to meet the challenges of a community public health need and culminates in a career investigation activity.

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 Sylvia Hobbs, Deputy Director, at the Texas Department of Health in Harlingen, Texas.

Evidence of Success

Students will become aware of the purpose and reasons for a Public Health Department in Texas. Each student will demonstrate their knowledge of immunization by creating persuasive literature about preventable diseases. They will then develop sufficient knowledge about immunizations to be able to present a group generated, collaborative report detailing how to put together a successful immunization campaign about an imaginary disease. The students will also gain knowledge about the need for various medical careers.

Personalize the Learning

Read and act out the poem “ Sick” by Shel Silverstein, from *Where the Sidewalk Ends*, or download from <http://www.ezy.net/~quix/sidewalk.html>. Discuss with students the fact that most of Peggy’s diseases (measles, mumps, chicken pox, flu) in the poem are preventable through immunizations. Ask the students to raise their hand if they have ever had each of the diseases Peggy “says” she had- measles, mumps, chicken pox, or flu. Very few, if any, have had measles or mumps because they received a immunization for these diseases when they were a baby. Explain that an immunization contains a small amount of the virus and is injected into our body so that our bodies can protect itself if we ever get the virus in our body again.

* Discuss current events of bio-terrorism with students if appropriate. Ask students to research anthrax and immunizations that are being developed. Discuss ways to prevent the spread of any biological warfare such as not opening strange packages or mail, washing hands after touching unfamiliar objects, telling adults about “strange” circumstances or persons who don’t belong in the area, etc.

– Additional background information may be found at:
<http://www.vaccines.org>

Relevance

After observing Region II’s Public Health department, successful public health depends on community education and awareness. Healthy living impacts the student as well as their family.

Discuss with the students that they, as well as you the teacher, would not be allowed in school if all did not have required immunizations. Immunizations protect not only yourself, but everyone else in our community, state, and nation. Ask the class why it is important to be immunized. (protect ourselves, our families, our friends, our neighbors, and anyone else we come in contact with.) All it takes is one person to spread a deadly disease.

There is a growing need for health related fields in Texas, especially the Lower Rio Grande Valley. Students will realize that they can be trained for a career in a science or health related field.

Careers in Action

TEKStar Activity Summary

Lesson Title: Immunization: Our Protector

Time Frame: 20-30 minutes

Activity Description

Introduce the concept of how the immunization process works by involving the whole class in this fun activity called “Unimmunized vs. Immunized.” Remind students that an immunization involves injecting small amounts of a disease cells into our bodies. Explain that our bodies are made up of millions of cells and that each student will play the role of a cell.

Choose three students to stand in front of the class. Label them with a sign or post it or sticker that reads “Cell.” Choose three more students to stand elsewhere in the classroom and label them with a sign or post it or sticker that reads “Cell” also. Now ask eight students to form a circle while holding hands around one of the “Cell” groups. Label each of those eight students as “Immunization.”

Ask the class the following question:

What does one cell group have that the other group does not?

(Answer- One group has immunizations surrounding them while the other group does not.)

Explain that inside our bodies we also have cells that are protected by immunizations and some that are not. Ask students to predict what happens to cells that are not protected by immunizations.

Now ask the remainder of the class to stand and be a cell labeled “Disease” in order to demonstrate what happens to cells that are and are not protected by immunizations. Have students perform the actions as you read the following script. “Once a disease cell enters or forms in our bodies, they find un-immunized cells to join them.” (Instruct the “Disease” cell students to join together and put new labels on the “Unimmunized” cell students.) “When our bodies have lots of disease cells, we get really sick. However, if our body contains immunized cells, the disease cells can not get more to join them because these cells are protected.” (Instruct all of the “Disease” cell students to try and get through the immunized circle around the remaining three cells much like the old Red Rover game. Instruct the “Immunized” circle to hold on firmly and not let anyone through.) “Immunizations help protect our bodies from disease that could make us very sick or even die.”

This activity may need to be repeated without your added instruction for complete comprehension of the story and added dramatic creativity.

Follow this activity by asking the students to predict how the body rids itself of the disease cells. (Medication kills the cells, the body’s temperature rises and kills the disease cells, etc.)

Teacher-to-Teacher Notes

In case one or two students may get through the immunized circle, explain that some immunizations eventually weaken and let in some disease cells and that is why we receive booster shots to strengthen the immunization circle. Also explain that even if a few cells get in, they may not be able to get back out with additional cells to join the diseased cells.

If this “live” demonstration is not possible, the same activity can be drawn on an overhead using different colors for the immunized and unimmunized group. Videos and books may also offer additional visuals.

The teacher may refer to the Texas Public Health website:
<http://www.tdh.state.tx.us/immunize>

Objective

Students will demonstrate the process of immunizations in our bodies and why they are so vital.

Materials

6 signs, labels, or post-its that read “Cell.”
8 signs, labels, or post-its that read “Immunization.”
Signs, labels, or post-its that read “Disease Cell” for the remainder of the students.
1 copy of the script for teacher to read aloud.

Technology Utilization

Internet

SE - Course

HE 115.6:4.5 (B)

SE - Cross Curricular

SC 112.6:4.2 (B)(C)
Fine Arts/Theatre 117.16:4.1 (C) (E), 4.2 (C) (D), 4.3 (D)
ELA 110.6:4.5 (C), 4.11 (B), 4.13 (E), 4.15 (C)

TAAS

WR 1:4.15 (C)

TAAS II/TAKS

RE 1:4.10 (F)(G)
SC 1:5.2 (C)
WR 1:4.15 (A)(C)

Check for Understanding

Teacher will direct and monitor the group’s movement during the reading of the script and address any questions that arise.

Assessment

Students may create a three part flow chart diagraming each step of what occurs in our bodies when a disease cell is present. 1.) Find unimmunized cells, 2.) Join them, 3.) Blocked by immunized cells.

Learning Styles

Concrete Sequential
Abstract Sequential
Abstract Random

Multiple Intelligences

Body/Kinesthetic
Visual/Spatial
Logical/Mathematical

Thinking Skills

Basic

Accommodations

Managed Behavior

Extensions

Performance Options

Resource Page

None



Know It
Do It
Think It

Activity 2

Careers in Action

TEKStar Activity Summary

Lesson Title Disease: Our Enemy

Time Frame 3 Days

Activity Description

Discuss with students the fact that scientists have developed immunizations for only some diseases. Every child in the U.S. is required to receive certain immunizations at various ages for particular diseases which include: Hepatitis B, Diphtheria, Tetanus, Pertussis, H. Influenza Type B, Inactivated Polio, Pneumococcal Conjugate, Measles, Mumps, Rubella, Varicella, and Hepatitis A. Remind students that Scientists have developed immunizations to keep people from getting each of these diseases. Have students look at their own immunization record or a copy of an immunization schedule available from a school nurse. Ask students if they know anything about any of the diseases listed on their immunization cards, then ask why they don't know about these diseases. Instruct students that today they are going to learn about these preventable diseases thanks to immunizations. Divide the class into 12 groups and assign each group a disease listed on their immunization card. Each group will prepare a written report as well as a visual aid. The written report must include answers to the following questions:

1. What are the symptoms of your assigned disease?
2. Who developed the immunization?
3. When was the immunization developed?
4. At what age is the immunization required to be received?
5. Name a few countries/states/communities that still record people dying from your assigned disease?
6. Where can you go in your community to get immunizations?

The visual aid must show the symptoms of the disease mentioned in the report. Students may draw a picture or find a picture (if available), or pretend to have the symptoms or use a doll to demonstrate the symptoms, or construct a flow chart of the progression of the disease's symptom, etc. (Visual aids can be used as a pop quiz following presentations.) Allow for student presentations and time for questions and answers. The nurse may be asked to help grade the projects.

Following the presentations, discuss with students the importance of staying current with their immunizations as well as what would happen if most people didn't. (Spreading of these preventable diseases, increase of death, decrease in population, possible segregated living areas, increase of hospital patients, shortage of hospital staff, shortage of hospital rooms, increase of insurance rates, etc.)

Teacher-to-Teacher Notes

If records are unavailable from the school nurse, an immunization schedule is available to download at: <http://tdh.state.tx.us/immunize/2001schd.htm>. Be sure to receive parental permission before obtaining students' immunization records. While researching, students may need to be provided with copies of information downloaded from Internet if medical sites are blocked at your school. Invite the school nurse to help with this project as a speaker, resource, grader, etc. <Http://www.askjeeves.com> is a great website for students use.

Check for Understanding

Teacher monitors student's research by assuring that all questions are answered in each report.

Assessment

Students may be graded by assigning up to 70 points for the written report which addresses all questions and up to 30 points for the visual aid that addresses signs and symptoms, creativity, and accuracy.

Objective

Students will research and learn about preventable diseases listed on their own immunization records in an effort to promote staying current as well as understanding immunization requirements.

SE - Course

ELA 110.6:4.1 (A), 4.5 (A)(B), 4.8 (B), 4.10 (G) (L), 4.13 (C) (F), 4.15 (C), 4.17 (D)

SE - Cross Curricular

SS 113.6:4.21 (B)(C), 4.24 (B)
SC 112.6:4.3 (E)
HE 115.6:4.3 (A) (B), 4.5 (C)

TAAS

WR 1:4.15 (C)
RE 2:4.13 (D), 5:4.13 (G)

TAAS II/TAKS

WR 1:4.15 (A)(C)(D)
RE 1:4.10 (F)(G), 4:4.10 (H), 4.11 (C)(D)

Materials

A copy of each students’ own immunization record or a copy for each student of the required immunizations schedule available at <http://www.tdh.state.tx.us/immunize/2001schd.htm>.

Posters, paper, markers, and other materials dependant upon student’s creativity.

Research resources

Technology Utilization

Internet

Learning Styles

Concrete Sequential
Abstract Sequential
Abstract Random

Multiple Intelligences

Verbal/Linguistic
Visual/Spatial

Thinking Skills

Engaged

Accommodations

Adapted Assignments, Assistive Technology/Materials, Instructional Support

Extensions

Depth and rigor, acceleration, performance options

Resource Pages

None



Careers in Action

TEKStar Activity Summary

Lesson Title "Fifthgraditis"

Time Frame 60-90 min

Activity Description

Ask students to think of reasons why some children do not get the required immunizations. List responses on the board. (Responses may include: no money, no transportation, don't know where to get them, no time, too painful, etc.)

Remind students of the research they performed in Activity 2, "Disease: Our Enemy." Now they will use the gathered research information for a real problem. Ask the students to listen carefully as you read (like a news reporter) about a horrible disease that has just been reported in your local town. "A horrible disease has just erupted this week and it has local doctors scratching their heads. More and more fourth grade students from (your) Elementary are complaining about.....going to 5th grade! Doctors are calling this wretched disease "Fifthgraditis." The symptoms start out sounding like normal complaining and are later accompanied by moaning and groaning about too much homework. But soon, the victims begin exhibiting forgetfulness of homework, textbooks, paper and finally pencils! They begin to wander around the school hallways, ignoring teachers and worst of all, eating horrifying cafeteria food! Eventually, students with advanced cases of Fifthgraditis sadly sit in their desk just babbling to all those who sit around them trying to spread this "retaining" disease. But wait,....this just in. It seems that a Dr. Willgo has just developed an immunization for Fifthgraditis! He will be working with (your) class in developing a Plan of Action so that each fourth grade student in (your) Elementary receives this miraculous immunization. Thank you and good luck!"

Divide students into groups of three or four and provide each group with a copy of the article you just read. Instruct them that they are going to be playing the part of an employee of the Texas Department of Health Public Information Campaign. Each group is responsible for preparing a "Plan of Action" to get every fourth grade student in their school to become "immunized" against Fifthgraditis. The group's plan of action might include some or all: posters, brochures, commercials that include an actual location of where to get immunized, cost, etc. Allow for presentations and display to other fourth grade classes. Samples may be brought in from the Texas Department of Health for the students to keep.

This activity may be followed up with a field trip or presenter from your local Texas Department of Health facility to discuss how they actually promote immunizations across Texas. Students may then compare their projects to the types of real projects done throughout Texas.

Teacher-to-Teacher Notes

Instead of using the fictitious disease “Fifthgraditis,” you may use one of the previously researched diseases in Activity 2 for students to actually promote immunizations throughout the school.

Ask the school nurse, a local doctor, a clinic, or the Texas Department of Public Health if they have a suggestion as to the number one disease that affects fourth graders.

Encourage creativity!

Check for Understanding

Teacher monitors questioning and guides over group work as well as student participation during discussions.

Assessment

The student will create promotional products for an immunization campaign much like the Texas Department of Health. Products must exhibit the following:

1. Symptoms of “Fifthgraditis”
2. How could this disease spread to others
3. Information about the immunization
4. Where to go to locally receive the immunization
5. Cost of the immunization

Each portion may be worth 25 points for a total of a possible 100 points. Grade for grammar as well but separately.

Objective

Students will create a promotional immunization campaign and product for the fictitious disease, “Fifthgraditis.”

SE - Course

ELA 110.6:4.1 (A)(C), 4.5 (B)(F), 4.10 (B), 4.11 (A)(B), 4.12 (C), 4.13 (A)(C)(F), 4.15 (B)(C), 4.17 (D), 4.19 (G), 4.20 (D), 4.25 (B)

SE - Cross Curricular

HE 115.6:4.4 (E), 4.5 (C), 4.11 (E)
SC 112.6:4.2 (C) (D), 4.3 (B)

TAAS

RE 4:4.13 (G), 4.11 (A)(D)

TAAS II/TAKS

RE 1:4.10 (F)(G), 4:4.10 (H)(J)
WR 1:4.15 (A)(C)

Materials

Copies of script for yourself and each group.

Posters, markers, construction paper, scissors, glue, or video camera and videocassette tape for optional commercials.

Technology Utilization

Graphic computer programs

Learning Styles

Concrete Sequential
Abstract Sequential
Concrete Random
Abstract Random

Multiple Intelligences

Body/Kinesthetic
Verbal/Linguistic
Visual/Spatial

Thinking Skills

Dynamic

Accommodations

Adapted Assignment, Assistive Technology and Materials, Instructional Support

Extensions

Depth and Rigor, Acceleration.

Resource Pages

None



Careers in Action

TEKStar Activity Summary

Lesson Title The Best of Texas: Medical Professions

Time Frame 90-120 Minutes

Activity Description

Begin the lesson by discussing the reality of not having immunizations for all diseases. Therefore, we have many health care professionals who specialize in detecting and/or treating diseases in different parts of our bodies. Show students the yellow pages in your local telephone book and mark the pages labeled “Physicians.” Show students who your local or nearby disease specialists are such as: Optometrist (eye), Dentist (teeth), Cardiologist (heart), Otolaryngologist (ear, nose, and throat), Dermatologist (skin), Gastroentologist (stomach and intestines), Hematologist (blood), Nephrologist (kidneys), Neurologist (nervous system, brain), Oncologist (cancer).

Arrange for a field trip to a medical facility or for a speaker to come to your class to speak about their job description. Before the trip or speaker, have each student complete the first two columns of a KWL chart (Know, Want to Know, Learned). After the trip or speaker, have the students complete the last column listing what they have learned about the job of a person involved in detecting and/or treating diseases. Job descriptions may include information concerning: number of years of schooling, special training, demand for their job, pay, what students could do now to prepare for a job such as theirs, what their job is like, etc. Students should follow up by writing thank you letters. Students will then utilize their research information to write a descriptive paragraph titled, “A Day in the Life of Dr. _____.” Allow for the students to read aloud to the class or create a booklet of paragraphs, or design a bulletin board featuring the paragraphs.

Teacher-to-Teacher Notes

This activity focuses more on jobs related to diseases to give students the opportunity to explore various medical careers. Students may be exposed to any medical career. If a speaker or trip are unavailable, students may opt for a telephone interview and/or Internet research for a report.

Check for Understanding

Teacher will monitor through questioning and aiding in student research.

Assessment

Students will hand in their KWL chart, a summary paragraph, or a brief report summarizing learned information following a field trip or speaker. Students must include details from presentations or research to indicate comprehension.

Objective

The student will research and prepare information focusing on job responsibilities of a local medical disease specialist.

SE - Course

ELA 110.6:4.11 (A), 4.4 (A), 4.15 (A)(C)(D), 4.17 (D), 4.21 (C)

SE - Cross Curricular

SC 112.6:4.3 (A)(D)

TAAS

RE 4:4.11 (A)(D), 4.13 (G)

TAAS II/TAKS

WR 1:4.15 (A)(C), 4.19 (C)(D)
RE 1:4.10 (F)(G)

Materials

Internet, if speaker or trip are not available.

Technology Utilization

Internet, if speaker or trip are not available.

Learning Styles

Concrete Sequential
Concrete Random

Multiple Intelligences

Visual/Spatial
Verbal Linguistic

Thinking Skills

Engaged

Accommodations

Adapted Assignment, Assistive Technology/Materials, Instructional Support

Extensions

Depth and Rigor, Acceleration

Resource Pages

None