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| **TEXAS CTE LESSON PLAN**[www.txcte.org](http://www.txcte.org) |
| **Lesson Identification and TEKS Addressed** |
| **Career Cluster** | Health Science |
| **Course Name** | Principles of Health Science |
| **Lesson/Unit Title** | Handwashing Lesson Plan |
| **TEKS Student Expectations** | **130.222. (c) Knowledge and Skills**(11) The student recognizes the importance of maintaining a safe environment and eliminating hazardous situations. The student is expected to:(A) identify governing regulatory agencies such as the World Health Organization, Centers for Disease Control and Prevention, Occupational Safety and Health Administration, U.S. Food and Drug Administration, Joint Commission, and National Institute of Health; (C) relate safety practices in the health science industry. |
| **Basic Direct Teach Lesson**(Includes Special Education Modifications/Accommodations and one English Language Proficiency Standards (ELPS) Strategy) |
| **Instructional Objectives** | Upon completion of this lesson, the student will be able to:* Demonstrate proper hand washing procedure used in the health care settings
* Demonstrate an understanding when hand sanitizer maybe used in place of performing standard hand washing procedure
* Demonstrate proper technique for using hand sanitizer
* Evaluate a peer using skills check
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| **Rationale** | An understanding of safety as it relates to community and self is necessary for the delivery of quality health care. |
| **Duration of Lesson** | Teacher’s Discretion |
| **Word Wall/Key Vocabulary***(ELPS c1a, c, f; c2b; c3a, b, d; c4c; c5b) PDAS II (5)* |  |
| **Materials/Specialized Equipment Needed** | **Materials****Activities I & II*** handwashing soap
* hand brush
* orange/cuticle stick
* paper towels
* sink
* disclosure solution
* Hand Hygiene for health Care professionals – CDC: <http://www.cdc.gov/handhygiene/>

**Activity III*** handwashing soap
* hand brush
* orange/cuticle stick
* paper towels
* sink
* hand sanitizer
* petri dish with agar
* wax pencil or permanent marker
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| **Anticipatory Set**(May include pre-assessment for prior knowledge) | **Essential Questions*** What is the most common way pathogens are transmitted in a health care setting?
* How do we keep from spreading germs from one patient to the next? When should a health care worker use standard hand washing rather than hand sanitizer?
* What is the advantage of using hand sanitizer for the patient?
* What is the disadvantage of using hand sanitizer for the patient?
* What is the advantage and disadvantage of using hand sanitizer for the health care worker?
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| **Direct Instruction \*** | **Key Points****Standard Handwashing Procedure**1. According to OSHA standards regarding blood borne pathogens, hand washing should be performed, at a minimum:
	1. Before and after every patient contact
	2. After removing gloves and other protective wear
	3. After handling blood or other body fluids
	4. When visibly contaminated with blood or tissues
	5. Before leaving the patient area
	6. Before and after eating, applying makeup, using the bathroom, handling contact lenses, handling equipment
2. Importance of handwashing to reduce nosocomial infections A. Required in any health care profession.
	* 1. Reduces spread of disease from patient to patient
		2. Reduces spread of disease from patient to health care professional
		3. Reduces spread of disease from health care professional to patient
		4. Reduces spread of disease from health care professional to other health care professionals
		5. Reduce spread of disease to visitors in the health care facility III. Proper handwashing techniques include
	1. Soap aids in the removal of pathogens.
	2. Warm water
	3. Friction
	4. All surfaces of the hands must be cleaned – palms, backs, between the fingers.
	5. Nails must be cleaned.
	6. Fingertips pointed downward – prevents water from getting on forearms and then running back down onto the hands and re-contaminating them.
	7. Dry paper towels are used to turn faucet on and off – prevents contamination of hands from organisms on the faucet.
3. When hands are visibly dirty, contaminated, or soiled, wash with non-antimicrobial or antimicrobial soap and water
4. If hands are not visibly soiled, use an alcohol-based hand rub for routinely decontaminating hands

**Cleaning Hands with Waterless Hand Sanitizer (also known as hand rubs)**1. Hand sanitizers work to kill microbes chemically
2. Waterless hand sanitizer provides several advantages over hand washing with soap and water. However, they are not effective if organic matter (dirt, food, or other material) is visible on hands.
3. Benefits of waterless hand sanitizer:
	* 1. require less time than hand washing
		2. act quickly to kill microorganisms on hands
		3. are more accessible than sinks
		4. reduce bacterial counts on hands
		5. do not promote antimicrobial resistance
		6. are less irritating to skin than soap and water
		7. some can even improve condition of skin

IV. Both components waterless hand sanitizer and friction should be used increase effectiveness. Four steps:A. Make sure all organic matter is removed from hands. All visible organic matter (for example: dirt) must be removed from hands prior to applying waterless hand sanitizer.B. Apply a dime sized amount of waterless hand sanitizer to the palm of one hand or use a waterless hand sanitizer wipe.C. Rub hands together covering all surfaces of hands and fingers.D. Rub until waterless hand sanitizer is absorbed1. Practice proper hand washing procedure using a disclosure solution and a black light.
2. Demonstrate proper hand washing technique after practice and peer review. **Handwashing Procedure**
3. Have students partner-up and swab each other’s hands. Divide a petri dish into 3 areas using marker and compare the growth.
	* + before washing
		+ after hand sanitizer
		+ after using proper hand washing technique

*Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*NONE |
| **Guided Practice \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:***Accommodations for Learning Differences**For reinforcement, students will list the steps for proper hand washing technique. |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:** See handwashing procedure under Direct Instruction.
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| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \***  | * Demonstrate proper hand washing technique after practice and peer review with 100% accuracy
* Handwashing rubric HOSA competitive Guidelines (www. HOSA.org)

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| **References/Resources/****Teacher Preparation** | Teacher Note:Use wax pencil or permanent marker to make 3 divisions and label the bottom of Petri dish (dirty/ sanitizer/ soap). On sections labeled dirty, one student will touch fingers to plate before any cleaning, then have the student’s partner wash one hand with soap and water and then place fingers on that section of plate. Then have the partner clean the other hand with hand sanitizer and then place fingers from that hand on the section of agar labeled sanitizer. Incubate for 24 – 48 hours and compare growth and record findings. Compare data to other class mates and classes.Use of disclosure lotion is critical to the student’s awareness and understanding of the necessity for proper technique. Students visually discover which surface areas are more difficult to wash |
| **Additional Required Components** |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** | Cross-DisciplinaryI. C. 1. Analyze a situation to identify a problem to be solved.I. C. 3. collect evidence and data systematically and directly relate to solving a problemScienceI. A. 1. utilize skepticism, logic, and professional ethics in science. |
| **Recommended Strategies** |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy****Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/Handout** |  |
| **Writing Strategies****Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication****90 Second Speech Topics** |  |
| **Other Essential Lesson Components** |
| **Enrichment Activity**(e.g., homework assignment) | For enrichment, students will create posters to teach younger children how to wash hands, why hand washing is important, and when to wash hands. |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | HOSA, SkillsUSA |
| **Service Learning Projects** |  |
| **Lesson Notes** |  |

1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)