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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Human Services |
| **Course Name** | Child Development |
| **Lesson/Unit Title** | What Happens Before Birth? Prenatal Development |
| **TEKS Student Expectations** | **130.277 (c) Knowledge and Skills**  (4) The student investigates components of optimal prenatal care and development. The student is expected to:  (A) Identify signs and stages of pregnancy;  (B) Analyze the effect of environmental and hereditary factors on fetal development, including prenatal brain development;  (C) Describe nutritional needs prior to and during pregnancy;  (D) Analyze appropriate medical care and good health practices prior to and during pregnancy;  (E) Explore technological advances in prenatal care and development. |
| **Basic Direct Teach Lesson**  (Includes Special Education Modifications/Accommodations and  one English Language Proficiency Standards (ELPS) Strategy) | |
| **Instructional Objectives** | **Students will:**   * List the three stages of pregnancy * Describe why prenatal health care is important * List three environmental teratogens * Explain the dangers associated with those teratogens * Analyze an example diet of a pregnant woman compared with the USDA ChooseMyPlate.gov standards |
| **Rationale** | Do you know anyone who is expecting a baby or who had one recently? Did you have an opportunity to visit with that woman about her pregnancy experience? Do you know if she had concerns about her baby’s health and well-being? Have you ever thought about what we must do to keep unborn babies well and healthy? This unit will explore some of those issues. |
| **Duration of Lesson** | Three 45-minute class periods |
| **Word Wall/Key Vocabulary**  *(ELPS c1a, c, f; c2b; c3a, b, d; c4c; c5b) PDAS II (5)* | **Age of Viability**: Earliest age when the fetus can survive if born prematurely; occurs between 22 and 26 weeks  **Amniotic Fluid:** Clear, slightly yellowish liquid that surrounds the unborn baby (fetus) during pregnancy. It is contained in the amniotic sac  **Amniotic Sac:** During pregnancy, the amniotic sac is formed within the uterus and encloses the fetus. This sac bursts normally during the birthing process, releasing the amniotic fluid. A popular term for the amniotic sac with the amniotic fluid is the bag of waters  **Embryo**: Prenatal organism from two to eight weeks after conception  **Fetus**: Prenatal organism from ninth week to end of pregnancy  **Folic Acid**: Helps prevent premature birth and neural tube defects  **Placenta**: Organ that surrounds the embryo and permits the exchange of nutrients and waste products between the mother and embryo  **Prenatal**: Before birth  **Teratogen**: Drug or other substance capable of interfering with the development of an embryo fetus that may lead to birth defects or developmental malformations  **Trimester:** A typical pregnancy is nine months long. Pregnancy is divided into three-time periods, or trimesters, that are each about three months in duration — the first, second, and third trimesters  **Zygote**: Newly fertilized cell at conception |
| **Materials/Specialized Equipment Needed** | **Equipment:**   * Computer lab with Internet access (be sure to follow school district guidelines) * Internet access during PowerPoint presentation, to view YouTube videos. Note that some of the videos start with ads. You may skip the ads, but it sometimes places you at the middle of the video and you will need to backtrack to the beginning of the video. Scroll over the icons and find the transcript button, if you wish to see a scroll of the transcript while the video is playing. * Light projector (Elmo)   **Materials:**   * 3 x 5 cards for word wall * Baby supplies   + Baby bottle   + Baby clothes   + Booties   + Bulb syringe   + Car seat   + Diaper * Pictures of:   + Babies   + Children   + Pregnant women * Plastic plate * Play food   **PowerPoint:**   * What Happens Before Birth? Prenatal Development   **YouTube:**   * Genetic Influences  Genetics (Time 15:18).<http://www.youtube.com/watch?v=7FWPqPrwsCk> * 12 Healthy Snacks During Pregnancy  “Two Pillars of Healthy Pregnancy” where you will discover how much weight should you gain, what foods should you eat and which ones do you have to avoid, the right way to exercise during pregnancy, and much more.<http://youtu.be/U6118JszdCU> * Prenatal Development Prenatal Development video (Time 16:52) Start at time 9:49, so actual viewing time is approximately 7 minutes<http://www.youtube.com/watch?v=mOVtp9cdQVM> * Preventing Birth Defects – Health Matters Environmental Factors. University of California TV (Time 29:26)<http://www.youtube.com/watch?v=qYoNkWM8QxE>   **Graphic Organizers:**   * MyPlate Graphic Organizer   **Handouts:**   * Notes for What Happens Before Birth? Prenatal Development * Phenotypes * Pregnancy Scenarios * Prenatal Terms * Rubric for Prenatal Care Brochure * Vocabulary Words Crossword Puzzle (Be aware that the crossword puzzle is two pages in length. The second one is the key. After downloading, print copies of page 1 for the students.) |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | **Before class begins:**  Display as many of the lesson related supplies (see Materials or Specialized Equipment Needed) that you have available, on a table in front of the room:  Note to Teacher: More information on Prenatal Development can be found in these courses:   * Nutrition for the Life Cycle   Lifetime Nutrition and Wellness   * Preparing for Parenthood: Pregnancy and Labor Child Development   **Day 1:**  Distribute the handout Phenotypes. Have students to write the names of three children that they know well. Fill in some obvious physical and behavioral similarities between them and their parents. Allow time for questions and class discussion.  **Day 2:**  Using the website:<http://www.choosemyplate.gov/pregnancy-breastfeeding/making-healthy-food-choices.html> , have students complete the MyPlate Graphic Organizer graphic organizer  Allow time for questions and class discussion.  **Day 3:**  Have students complete the handout Vocabulary Words Crossword Puzzle. Allow time for questions and class discussion. |
| **Direct Instruction \*** | Introduce lesson objectives, terms, and definitions.  Distribute handout Notes for What Happens Before Birth? Prenatal Development so that students may follow along and take notes during the slide presentation. Teacher to determine what information will be included in the note-taking activity.  **Day 1**  Introduce PowerPoint presentation, What Happens Before Birth? Prenatal Development, slides 1-14. Allow for questions and class discussion.  Videos included in PowerPoint presentation:   * Genetic Influences  Genetics (Time 15:18).<http://www.youtube.com/watch?v=7FWPqPrwsCk> * Prenatal Development Prenatal Development video (Time 16:52) Start at time 9:49, so actual viewing time is approximately 7 minutes<http://www.youtube.com/watch?v=mOVtp9cdQVM>   **Day 2**  View the Power Point presentation, What Happens Before Birth? Prenatal Development slides 15 – 26. Allow for questions and class discussion.  Videos included in PowerPoint presentation:   * 12 Healthy Snacks During Pregnancy  “Two Pillars of Healthy Pregnancy” where you will discover how much weight should you gain, what foods should you eat and which ones do you have to avoid, the right way to exercise during pregnancy, and much more.<http://youtu.be/U6118JszdCU>   **Day 3**  View the Power Point presentation, What Happens Before Birth? Prenatal Development, slides 27 – 31. Allow for questions and class discussion.  Video included in PowerPoint presentation:  Preventing Birth Defects – Health Matters Environmental Factors. University of California TV (Time 29:26)<http://www.youtube.com/watch?v=qYoNkWM8QxE>  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*   * checking for understanding * providing assistance with note-taking |
| **Guided Practice \*** | Distribute Pregnancy Scenarios handout and read the following scenarios to the class.  Delia is a 25-year-old diabetic and is pregnant with her first child. She and a friend are at lunch celebrating Delia’s birthday. Delia is deciding what to order and must remember to order a meal that is diabetic-friendly. Her friend has ordered the four-layer tiramisu cake for Delia as a surprise dessert.  Leah is 19-years-old and thinks she is about three months pregnant, but has not yet seen a medical professional. She enjoys going to concerts and occasionally drinks alcohol and smokes cigarettes. She tells her husband that “there is plenty of time” to go to the doctor. Her husband just heard a radio talk show stressing the importance of early prenatal health care.  28-year-old Sarah is in her first months of pregnancy. This is Sarah’s third time to be pregnant. She lost the previous two pregnancies to miscarriages at the early stages of pregnancy. She has been invited to go on an all-expense paid trip to Mexico with friends. Unfortunately, this area is well-known for several infectious diseases. Sarah’s two friends are trying to help her decide whether or not to go on the trip.  In groups of four, have students role play scenarios. Most role plays will last only a minute or two.  Allow time for groups to complete chart and summary sentence on handout. Allow for questions and discussions.  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*   * checking for understanding * allow for work with a peer-mentor during role plays |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | Have students develop a brochure that could be distributed in doctors’ offices, hospitals, and other places where pregnant women might pick them up. Have them describe at least five teratogens that should be avoided during pregnancy. The brochure should describe about what they are, where they are found, why they might be harmful, and how to avoid them. The brochure should include illustrations.  The students may use Microsoft Word templates to create the brochures at:<http://office.microsoft.com/en-us/templates/results.aspx?qu=brochures&ex=2&av=all>  Distribute Rubric for Prenatal Care Brochure so students understand what is expected.  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*   * checking for understanding * work orally with teacher |
| **Lesson Closure** | Student brochures will be presented to the class and assessed with a rubric. Allow time for student questions and class discussion after each presentation.  These three days have helped us understand more about pregnancy and the things that a pregnant woman can do to help ensure a healthy baby. What are the five main categories that we studied? (ANSWER – genetic influences, prenatal development, nutrition during pregnancy, medical care, and environmental factors). |
| **Summative/End of Lesson Assessment \*** | Go to the Quizlet website, study the terms included under Prenatal Terms. Take the quiz and print your results. <http://quizlet.com/15628188/prenatal-terms-flash-cards/>  Student brochures will be assessed with appropriate rubric.  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*   * checking for understanding * allow for work with a peer-mentor |
| **References/Resources/**  **Teacher Preparation** | **Images:**  Microsoft Office Clip Art: Used with permission from Microsoft®.  **Textbooks:**   * Berk, L. (2008). *Infants and Children*. (4th ed). Boston, MA: Pearson Education, Inc.   **Websites:**   * BrainyQuotes (2012). <http://www.brainyquotes.com> * Fetal Development. (2012). Retrieved from <http://www.nlm.nih.gov/medlineplus/ency/article/002398.htm> * National Institute on Alcohol Abuse and Alcoholism Drinking and Your Pregnancy. (2012).<http://pubs.niaaa.nih.gov/publications/DrinkingPregnancy_HTML/pregnancy.htm> * National Institute on Alcohol Abuse and Alcoholism (No. 50). U.S. Department of Health and Human Services Fetal Alcohol Exposure and the Brain. (2000). <http://pubs.niaaa.nih.gov/publications/aa50.htm> * Quizlet (2012). Prenatal Terms. <http://quizlet.com/15628188/prenatal-terms-flash-cards/> * Radiological & Environmental Management  Teratogen definition -(2012). Purdue University. <http://www.purdue.edu/rem/ih/terat.htm> * Vocabulary Words  Crossword puzzle.<http://www.puzzle-maker.com> * U.S. Department of Agriculture ChooseMyPlate.gov Website. Washington, DC.<http://www.choosemyplate.gov/pregnancy-breastfeeding/making-healthy-food-choices.html>   **YouTube:**   * Genetic Influences  Genetics (Time 15:18).<http://www.youtube.com/watch?v=7FWPqPrwsCk> * 12 Healthy Snacks During Pregnancy  “Two Pillars of Healthy Pregnancy” where you will discover how much weight should you gain, what foods should you eat and which ones do you have to avoid, the right way to exercise during pregnancy, and much more.<http://youtu.be/U6118JszdCU> * Prenatal Development Prenatal Development video (Time 16:52) Start at time 9:49, so actual viewing time is approximately 7 minutes<http://www.youtube.com/watch?v=mOVtp9cdQVM> * Preventing Birth Defects – Health Matters Environmental Factors. University of California TV (Time 29:26)<http://www.youtube.com/watch?v=qYoNkWM8QxE> |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** | * Word wall * Draw visual representations of terms on word wall * Add terms and definitions to personal dictionary * Utilize Four Corners Vocabulary/ Word Wall Activity |
| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **Recommended Strategies** | |
| **Reading Strategies** | Download and print the following articles for students to read:  Fetal Alcohol Exposure and the Brain from the U.S. Department of Health and Human Services, National Institute on Alcohol Abuse, and Alcoholism.<http://pubs.niaaa.nih.gov/publications/aa50.htm>  The Word Attack Strategy will be utilized. Advise students prior to reading the article, to skim the article and circle /underline words that are unfamiliar to them. For example, any Human Growth and Development acronyms or lingo used in field. The students will be encouraged to use <http://www.dictionary.com> and to check the word wall to help with decoding. This procedure will help them with understanding of the meaning and pronunciation of the words.  Encourage students to connect reading to their life experiences or prior knowledge. |
| **Quotes** | We can’t understand when we’re pregnant, or when our siblings are expecting, how profound it is to have a shared history with a younger generation: blood, genes, humor. It means we were actually here, on Earth, for a time – like the Egyptians with their pyramids, only with children. **-Anne Lamott**  A child spends a moment in mommy’s belly but an eternity in her heart. **-Unknown**  We should recognize that women become mothers the moment they are pregnant. **-Alveda King**  A mother’s joy begins when new life is stirring inside, when a tiny heartbeat is heard for the very first time, and a playful kick reminds her that she is never alone. **-Unknown** |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** | **Journal Entries:**   * Describe at least one thing that a pregnant woman can do to help ensure a healthy pregnancy. * Prenatal fetal alcohol exposure can affect the fetus’ brain by … * Two differences between an embryo and a fetus are …   **Writing Strategy:**  RAFT writing strategy. The RAFT strategy is a post-reading exercise outlined to determine student understanding of the material in a creative and relevant way.   * Role: Obstetrician * Audience: Mother-to-be * Format: Newsletter * Topic: How to have a healthy baby |
| **Communication**  **90 Second Speech Topics** | * Briefly describe the three stages of pregnancy. * What are teratogens? Name two which can affect a fetus during prenatal development. * What are some of the risks of drinking alcohol during pregnancy? * Discuss some of the problems associated with maternal malnutrition. |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) | * Find at least three professional websites (ending in “edu” or “org”) that discuss Fetal Alcohol Syndrome and the impact of that on a child’s life. Write a two-page paper about your findings. Be sure to cite your sources. * Compile a family tree including medical histories to determine if any genetic defects are present in your family. Investigate community resources for genetic counseling if you feel your family may be at risk for these defects. Would you seek genetic counseling? What are reasons for and against genetic counseling? |
| **Family/Community Connection** | Invite a medical professional, such a doctor, nurse, or physical therapist to come speak to the class about children with physical limitations. What types of things are done to help include them in a regular classroom?  Students might be able to volunteer to help in a Special Education classroom or in the pediatric section of the local hospital. |
| **CTSO connection(s)** | Family, Career, and Community Leaders of America (FCCLA)<http://www.texasfccla.org>  **STAR Event**  Focus on Children: An individual or team event – recognizes participants who use Family and Consumer Sciences skills to plan and conduct a child development project that has a positive impact on children and the community.  **Texas Association of Future Educators (TAFE)**  <http://www.tafeonline.org/>   * Educational Leadership Fundamentals – This competition is an individual event that recognizes participates who take a 30-minute timed exam about knowledge of the teaching profession. |
| **Service Learning Projects** | Successful service learning project ideas originate from student concerns and needs. Allow students to brainstorm about service projects pertaining to the lesson. For additional information on service learning see<http://www.nylc.org/>   * Students will research local agencies which provide services for pregnant women. * Students will identify the needs of the pregnant women by contacting the family service agency. The students contact the director to discuss the service learning project. * The students will determine what the needs of the women are and conduct an assistance drive (clothes, baby clothes, disposable diapers, and toiletries) to donate to the women. The students will conduct a research of the family service agency. Where is it? How far is it from the school? How will they get there (transportation needs)? What are the costs and method of collecting the items they need, timeline for project and delivery of needed items? * They will list the materials, costs, and resources for the project. Students will determine roles and responsibilities of the project.   As a reflection, the students will evaluate how their community service skills aided them in the project. Do they feel they made an impact at the community venue and school? Compare the impact the project made on class members before they started the project and after the project was completed. Did the project achieve its purpose? What might you do differently next time? |

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)