**Design for Instruction**

TCWS Standard

*•The teacher candidate designs instruction for specific learning goals, individual student characteristics, and learning contexts.*

*•The teacher sets significant, challenging, varied and appropriate Learning Goals.*

*•The teacher candidate will recognize that there are multiple assessment approaches that must be aligned**with Learning Goals to assess student learning before, during and after instruction. An attempt is made by the teacher candidate to design student assessments.*

**Lesson 2 Topic Title: Eye of the Cow**

**Lesson 2 Learning Goals:** Define what you expect students to know and be able to do at the end of the lessons. The learning goals should be specific, observable, challenging and varied. Learning goals should describe what your students will learn and be able to do by the end of the lesson, and not simply what activities they will do during the lesson.

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| Learning Goal 1: 8th grade students will examine, by dissecting a cow’s eyeball, how each part of the eye system connects and works to help see with participation of 85%. |

**Alignment of Learning Goals to State or National Curriculum Standards:** Describe how your learning goals align with the Iowa Core Curriculum and/or National Standards for your content area. Identify the general subject area, grade level, and one or more specific standards in your response. The Iowa Core Curriculum can be found at: <http://educateiowa.gov/index.php?option=com_content&view=article&id=2485&Itemid=4602>

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| Standard for Learning Goal 1: Life Science Content Standard, Grades 5-8, The human organism has systems for digestion, respiration, reproduction, circulation, excretion, movement, control, and coordination, and for protection from disease. These systems interact with one another. |

**Justification of Learning Goals:** Explain how your learning goals are relevant, challenging, and appropriate. Consider their importance to previous and succeeding topics covered in the class, the students’ future in the class and school, and to skills needed for success in the 21st century world.

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| The lesson, Eye of the Cow, was appropriate for my learning goal, which was aligned with the Iowa core curriculum for grades 6-8. The lesson was relevant to my 8th grade students because they use their eyes to see everyday. It is important to understand how your eyes function to view the world. The Eye of the Cow lesson will benefit my students’ learning experience in future life science high school courses and discussions of diseases of the eye. My students used 21st century skills, such as observation and communication, while being challenged during dissection to identify and apply their knowledge of the eye and optic unit. |

**Assessment Plan:** Describe your plan for assessing your learning goals.

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| **Type of Assessment**  Describe the method/s to check on student progress. Consider these approaches:  **selected response**, e.g. multiple choice, matching,  fill-in the blank questions  **writing assessment**, e.g. essays, essay questions, journaling  **performance-based assessment**, e.g. throwing a ball, presentation  **teacher / student communication**, e.g. class discussion, interview, group work | **Assessment Sample Size**  Below, list your assessment sample size. An assessment sample refers to the type and amount of student work you will assess. Teachers often make inferences about student learning based on a sample of only a few students’ work. Examples of assessment samples would include choral responses from the entire class, your observations of a small group performing a learning task, or an analysis of individual student writing, drawing, or other performances. |
| Learning Goal 1 Assessment Method: In my “Eye of the Cow” lesson, there were a variety of formative assessments that took place during the dissection of the cow’s eyeball. While my students participated in this exploratory activity, I asked my students questions about what they were observing and certain parts of the eye they were dissecting. My students were asked about what they knew from previous lessons regarding certain parts of eye, such as the retina. My students understood that the retina could dilate or contract depending on the amount of light that comes into the eye.  My assessment started as a whole class discussion and answering session, but as the activity progressed and students were immersed in the dissection, I asked questions individually or in small groups. | Learning Goal 1 Assessment Sample: Before the dissection started, I had the students listen to a song I created called “The Eye of the Cow”. This song was a preview into what the students would be assessed on later in the lesson. During the dissection of the eyeball, I asked various questions about each part of the eye, all of which were referenced in the song I created. My students were asked to describe what they were discovering throughout the exploratory activity. After my students made their observations of the anatomy of a cow’s eyes, I brought my students together, as a whole, and discussed the next item of the eye. When my students finally finished the dissection and cleaned up their stations, I created an educational learning game to test what my students learned during the lesson. The game was called, “Don’t Forget the Lyrics: Price Lab Edition.” The objective of this assessment was for students to try a sing the lyrics of the “Eye of the Cow” that they sang in the beginning of the class. This assessment was to help students remember the parts and functions of the eye in a memorable way. |

**Lesson 2 Plan:** Describe your plan for achieving your learning goals. The lesson plan should include the following sections: Analysis of pre-assessment data; Plan for differentiation; Plan to motivate learning and engage attentiveness; Description of activities to achieve learning goals; and Description of materials needed to implement lesson plan. **You may insert your lesson plan 2 responses in the provided prompts below or attach as a separate document in Appendix B. If you choose to attach a separate document, make sure that it still addresses all five sections below.**

**Analysis of Pre-Assessment Data:** Discuss what students already know and can do regarding your goals before you began your lesson. Pre-assessments may include your PLS instructor’s descriptions of past assessments and activities and/or your own observations from previous class activities or student work samples.

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| When there are lessons that have students dissecting living organisms, it can become a challenging task for the teachers to instruct their students. It is important to pre-assess students’ abilities to see if they are capable of participating in the task. Through my own observation and questioning, I knew prior to conducting the experiment that my students would be prepared to dissect a cow’s eyeball with the majority of the class participating. My students have had some degree of exposure to dissection, when they dissected a pig’s heart in 7th grade. Even though the cow’s eye dissection is an exploratory activity, my students were prepared to participate in it because they gained prior knowledge from the lights and optics unit through previous lessons, discussions, inquiries, and questionings. |

**Plan for Differentiation:** Describe at least one way you will differentiate the content, process, or product involved in your lesson in response to individual student needs, preferences, prior knowledge, or interests. Consider especially the needs of students with disabilities, students who are high achievers in some area, students with language needs, and students who are at risk for school failure. For more information, see: <http://www.cast.org/publications/ncac/ncac_diffinstruc.html>

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| While creating and performing this lesson there was a variety of differentiation instruction provide to the students, in order for them to receive a valuable learning experience. My lesson provided the opportunity for students to pick their own partners, who were able to touch the eye for the dissection. This allowed students to feel more at ease during the activity because they were able to still participate and observe at their own comfort level. I also provided students who did not want to be a part of this activity an alternative assignment, to write a report about the parts of the eye and how they worked. This exploratory activity filled the learning needs of all the different learning styles of each student. Kinesthetic learners were able to manipulate the material by cutting and feeling it. Visual learners were able to observe and visually connect the parts of the eyes with their given names. And auditory learners were able learn about the eye and how it works through the creative lyrics of the song the “Eye of the Cow.” |

**Plan to Motivate Learning and Engage Attentiveness**: Describe how you will motivate student learning at the beginning of the lesson. Describe specifically what you will say to introduce the lesson and engage students’ interest. Describe how you will maintain students’ interest throughout the lesson.

A lesson involving a dissection can make students’ anxiety levels be at a debilitating level, which can make students uncomfortable and unable to perform at their best, so I used multiple instructional strategies, motivating techniques, and attention grabbers to keep my students on task and enjoy this learning experience throughout the “Eye of the Cow” lesson. I felt the best way to lower my students’ anxiety levels, was to provide humorous techniques to allow my students to get comfortable with activity. When I performed my lesson, I surprised my students by coming out in costume as a cowgirl. I created a song called “Eye of the Cow,” using the band Survivor’s “Eye of the Tiger” theme. I recorded and sang to my students at the beginning of my class as a way to ease my students into the lesson. The song was a humorous, yet informative resource to on dissection and learning about the eye. I knew during the dissection, it may become difficult to provide information about what was being dissected and briefing the students on how each part of the eye worked. Therefore, before I began the lesson, I set up some guidelines to help the lesson run smoothly. I explained to my students that when I clapped my hands twice, I was going to ask them some questions about the eye, and if I said the word, “pineapple”, it meant eyes on me because I was going to instruct them through the next step of the dissection. My next guideline was if any student was having difficulty cutting their eyeball or had a question arise, they were to raise their hand quietly. My last guideline was if any of the students started to feel ill or uncomfortable, they were to ask Dr. Beharka or myself if they could leave the room. Throughout the lesson, I used a Prezi presentation as a guide for students to follow if they did not know what part of the eye we were discussing and dissecting. At the end of the lesson, I assessed my students by using an education game, which was relatable and pertained to their interests, called, “Don’t Forget the Lyrics: Price Lab Edition.”

**Description of Activities to Achieve Learning Goals:** Include descriptions of the activities you plan to use in the lesson. Your activities should be designed to support your learning goals and should be clearly described and carefully sequenced. Actively engaging students in learning also gives you the opportunity to assess their understanding. Make sure you take advantage of this opportunity by coordinating your activities with your assessment plan.

My lesson was a humorous, intriguing, and memorable learning experience for my students and myself. The “Eye of the Cow” lesson was an exploratory activity for my students, created foster a productive atmosphere for all types of learners, while putting the word “fun” back into the classroom.

The main activity for the lesson was dissecting a cow’s eyeball. It was designed to meet my learning goal that 8th grade students will be examined, by dissecting a cow’s eyeball, learning how each part of the eye system connects and works with a participation of 85%.

Before I began my instruction for the dissection, I wanted to have a way to pump up my students to get excited about dissecting a living organism. As a result, I created a song called, “Eye of the Cow,” which I played, danced, and sung to my students to encourage them to feel comfortable with the dissecting activity of the day.

When the song was over, I reinsured my students that we would return back to the song later in the lesson. I presented my “Eye of the Cow” Prezi, and set up various guidelines, including safety and preparation rules, directions on what my students needed to do to, and asked questions so students would stay attentive during the activity. I began the Prezi and instructed them to watch how I dissected the eye. I broke down the procedure into steps, starting with step one: cutting through the cornea. I walked around observing my students and asked them questions about what they were doing and what they were discovering as they explored the eye. As I worked around the proximity of the classroom, and saw that my students were ready to move on, I instructed them using the Prezi to guide them through the next ten steps of the dissection. During this time, I continued to give assistance and ask questions as I walked around the room.

After the dissection was completed and my students’ lab stations were cleaned, we transitioned to the lesson’s finale: an educational game. I created this to assess their understanding of what they learned and comprehended about the parts and functions of the eye. This activity was called, “Don’t Forget the Lyric: Price Lab Edition.” This part of the lesson is where I referenced back to the “Eye of the Cow” song that was sung at the beginning of the lesson. The objective of the game was to have each student recall the lyrics, and the student who went the furthest won. This activity allowed the students to utilize the content they learned through the dissection and apply it in a unique enjoyable instructional technique. The song can be a great study tool for an exam on the eye and it’s functions.

**Description of Materials Needed to Implement Plan**: List of all the materials or technology you will need to implement the activities.

* Cow eyeball
* Tray
* Scissors/scalpel
* Paper towels
* Goggles
* Plastic Gloves (non-latex)
* Prezi Presentation – “Eye of the Cow”
* Eye of the Cow lyrics
* Eye of the Cow song (recorded on iTunes)
* Computer
* Speakers
* Cowboy Hat
* Newspaper