Inquiry with Axolotls

<u>CCSS</u>
RI 4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI 4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
W 4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

NGSS
4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Inquiry Description
I chose to use axolotls (*Ambystoma mexicanum)* as a pet in my classroom because we are part of a Dual Language program with half of the class being native Spanish speakers and half of the class being native English speakers. Students spend half of the day learning in English and half of the day learning in Spanish. I teach Science and Math in Spanish to two different classes and my partner teacher instructs students in English through Literacy and Social Studies. I was looking for an unusual pet to keep that would be hardy and tolerant of a classroom environment as well as lend itself to interesting inquiry.

Inquiry 1 (4-LS-1)
Students will spend time observing our two classroom axolotls. They will work in small groups to (discuss external body structures and develop vocabulary for body parts/characteristics. Native Spanish speakers are combined with English speakers in order to support the language development component. Students show a high level of engagement with axolotls and are willing to learn the language needed to discuss these fascinating creatures. Students will be responsible for recording body structures, vocabulary, and interesting facts in their Science notebooks as the inquiry develops.

Inquiry 2 (RI 4.2, RI 4.4, W 4.2, 4-LS-2)
Students will read articles about axolotls that I have translated as well as conduct research in Spanish to investigate interesting facts about axolotls (3-chamber heart, minimal natural habitat left, native to Mexico – which will tie in a great cultural aspect, etc). Students will be asked to summarize main idea and details of one article.

Inquiry 3 (NGSS 4-LS1-2)
Students will take what they have learned and observed about axolotls and work individually to construct a model that shows how an axolotl processes information and responds to it. Types of models that may be used include a computer-generated graphic, a poster, a 3-D model, or most any type of idea a student has. Models that may be designed include the mouth formation, a 3-chamber heart, the unusual state of neoteny (perpetual larva stage, or the ability to regrow damaged body parts).

Inquiry 4 (NGSS 4-LS1)
The culminating activity will involve the entire class designing the perfect habitat for our axolotls. As students study ecosystems and research the native environment of native axolotls, they should gain the knowledge needed to create a great space for our classroom pets to thrive. We will organize a schedule for feeding, cleaning, and maintaining the habitat and work to hold each other accountable as the school year progresses.

Inquiry 1 Assessment: Notebooks will be used as authentic assessment that will hopefully develop as the inquiry unfolds. I will be looking for more in-depth descriptions with rich academic vocab in the second language as students work toward mastery of the NGSS standard.

Inquiry 2 Assessment: See attached rubric. Also, student graphic organizers will be assessed as well as ability to conference with teacher regarding information that was read.

Inquiry 3 Assessment: Model will be assessed using the EQuIP Rubric for NGSS.

Inquiry 4 Assessment: Teacher observations during the final inquiry will be used as assessment of needs of axolotls, ability to communicate in Spanish about needs of axolotls, as well as creativity of students.

Extension Activity: Students will research mythical connections between ancient Aztecs and axolotls. These amphibians were believed to be a manifestation of the god Xolotl, who was the ferryman of the dead to the underworld. W4.3 Write a narrative to develop an imagined experience in the time of the Aztecs with axolotls.

Writing rubric attached below.

	Nonfiction Writing Rubric- 4 W.4.2 Text Types and Purposes: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	Name: Date:

	Inquiry on Axolotl
1.0 **Basic**	★ Taught readers information about a subject ★ Includes ideas, observations, and questions ★ Wrote a beginning and engaged readers ★ Used transitions (before, after, then, later, however, but) ★ Wrote an ending that draws conclusions and asks questions ★ Includes facts, definitions and observations about topic and explains them ★ Uses expert words to teach others about the topic (includes drawings, captions, diagrams)
2.0 **Developing**	★ Taught readers different things about a topic ★ Includes facts, details, quotes, and ideas ★ Hooked readers by explaining why the subject mattered ★ Connects sections and ideas together with transitions (another, also, for example) ★ Wrote an ending that adds thoughts and feelings ★ Includes subtopics gives examples ★ Choses interesting comparisons and uses figurative language
3.0 **Profici ent**	★ Uses different kinds of information to teach about a subject ★ Introduction provides information and gets readers interested ★ Connects sections and ideas together with transitions (consequently, as a result, because of this) ★ Conclusion restates main points ★ Writing is organized into separate sections ★ Includes examples, details, dates, or quotes ★ Uses vocabulary of experts and explains key terms
4.0 **Distinguished**	★ Conveyed ideas and information about a subject ★ Introduction interests readers with a significant fact or quote ★ Includes subtopics in introduction ★ Uses transition words to help readers connect information together (for instance, in addition, therefor, such as, because of, as a result, unlike etc.) ★ Conclusion restates important ideas and offers final insight ★ Uses subheadings to separate sections ★ Focused on a subject and includes a variety of information ★ Makes information understandable and interesting ★ Chose words to carefully explain his information and ideas