



Be Aware! Be Prepared!

Fourth Grade unit of study based on Common Core State Standards for English Language Arts and the Next Generation Science Standards

A research project on natural disasters and their impact on our lives

Welcome to the County of San Diego Office of Emergency Services' unit of study on natural disasters!

This fourth grade unit of study is based on a multi-faceted design that directly reflects the overarching intent and goals of the Common Core State Standards (CCSS). The unit will focus on teaching students how to conduct an inquiry, or research project, using informational text and synthesize their notes into usable information to present to others. At the end of the unit, students should have the skills of researching information on a topic, taking notes, and writing about what they have learned using their notes, and orally presenting their information to others. In this unit, students are supported to build knowledge about the geological systems of the Earth, natural disasters and disaster preparation through print and technology sources, and collaborative research. The culminating performance task gives students a purpose and audience for their research, and asks them to use it to impact their world in a real way! The task is completed over three phases, which build upon one another, to support students' understanding and research skills.

REAL WORLD APPLICATION!

Culminating Performance Task:
Your class has been hired to conduct a Safety Fair for younger students and the community to teach them what it means to "Be aware! Be prepared!" in case of a natural disaster emergency. In order to do so, the class will engage in collaborative inquiry to discover what makes a natural disaster, how scientists and engineers are trying to lessen their impact and what we need to do to be safe.



Structure of the Content

It is important to note that this unit is not intended to be a handout/worksheet packet that students do independently. Rather, it is intended to be highly interactive and collaborative. The design of readings and tasks are meant to support a variety of instructional models. This will allow teachers to choose the amount of modeling and support their students will need based on reading levels of students, prior instructional experience and monitoring of student success along the way.

Reading segments within each disaster are within the lexile band for fourth-fifth grades. Those in the first three disasters have been chunked into shorter segments, with tasks and discussion questions to allow teachers to monitor understanding and adjust as needed. The last three disasters increase in length and complexity, asking students to apply skills learned during the earlier disasters. Each disaster includes tasks to apply and deepen understanding of the content learned during reading.

Learning in a Meaningful Context

Student learning is enhanced when students explore, organize, connect and apply information and ideas. The culminating project is about transfer – giving students the opportunity to use their knowledge and skills in a meaningful way. During this phase, teachers establish clear performance expectations, supervise the on-going opportunities to perform, provide models as needed and give on-going feedback.

Wiggins, G., & McTighe, J. (2011).

Structure of the Unit

Purposeful, Backward Design

The instructional sequence of this unit of study begins with the end in mind. A final, authentic performance task was created that requires students to creatively apply the content of the unit. It also provides context and motivation for the sequence of instruction that proceeds, since students will need the information they are researching for use in their final project.

Essential Questions

The inquiry process begins with an Essential Question. This question is open-ended and overarching so that it will sustain many weeks of inquiry and investigation. Throughout the unit, the activities flow from the Essential Question to the Culminating Event. The Culminating Event gives students the opportunity to synthesize and apply what they have learned. The unit tasks always have the Essential Question in mind and give students the opportunity to gather information and prepare for the final event.

Phases of Learning

Instruction is built around three phases of specific areas of inquiry. The phases, as well as the unit tasks, are arranged as learning progressions to develop and support learning during the entire research process.

- 1. Phase 1: *Initiating Inquiry*:** Students will be introduced to the research process and tools they will use. Teachers will model the use of materials as the investigation begins, looking at the difference between hazards and disasters, and background on the Earth's natural processes.
- 2. Phase 2: *Gathering Information*:** This phase is all about research. Students will work both independently and collaboratively in their learning during this phase. Learning is interactive and is both modeled and facilitated by the teacher. Skills are learned and practiced in order to be applied in phase 3.
- 3. Phase 3: *Applying Our Learning*:** The culmination of the unit is an opportunity for students to apply their skills, both of the content learned and the research process. In research teams, students will collaboratively investigate one natural hazard to develop a PSA for the Safety Fair presentation.

Alignment with CCSS for ELA

By design, this unit integrates the Reading, Writing, Speaking and Listening and Language strands. Students will build knowledge of geological processes of the Earth and natural disasters through close reading of grade level complex text. The text has been adapted to fit within the complexity range identified in the Appendix-A Supplement of the CCSS. They will solidify learning through listening and viewing of various media sources, use of collaborative discussions and shared research. They will communicate learning through speaking and writing.

The focus standards selected are those that fit naturally with the content of the text and the goals of the unit. See page 12 for the list of standards addressed.

The CCSS emphasize students' ability to "use accurately" (L.4.6), academic vocabulary and domain specific words. Domain specific vocabulary is taught in each section. Definitions given to students are bolded throughout the reading passages. Students are also asked to learn vocabulary in context of passages. Vocabulary will be internalized as students use targeted words in authentic contexts during both collaborative conversations and writing tasks.

Assessments

This unit features multiple opportunities to measure student content knowledge, reading and research skills and critical thinking for both formative and summative purposes. Each natural disaster asks students to show their learning through follow up tasks. These tasks are designed to solidify learning on the part of the student and to assess learning on the part of the teacher. With only a few concepts being applied, a quick look will give evidence of student understanding. Rubrics are included for more formal assessments of the performance task.

Alignment with Science Content

Most students in fourth grade are in multiple subject classrooms, which easily allows for interdisciplinary study. Designed to guide students through research about the Earth's systems, disasters that can occur and disaster preparation, the unit aligns to segments of the Next Generation Science Standards (NGSS) for fourth grade. See page 5 for standards. While the research is intentionally designed to build student knowledge about natural processes, it would not be enough to teach students the entire content of the NGSS. That said, extension ideas that could be considered in the planning of science content instruction are found throughout.

English Learners

English learners and students who struggle are supported in their learning through design elements within the unit. The readings for each disaster are chunked into short segments to provide more direct teacher interaction to support comprehension and learning of content as needed. Teachers will need to use professional judgment to determine adjustments to pacing and quantity of content to be covered. Additional scaffolds may be needed for students with very limited English. Students will also have opportunities to engage with content via other media, such as video clips and animations, to support their conceptual understanding of the content. Use of academic language frames is also built into the collaborative conversations to facilitate language development and writing.