

So, You're Having a Playa Festival...

A Guide for Educators





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What happens at a Playa Festival?

- During the two-day Playa Festival, Ogallala Commons will arrange to bring in experts from many fields to present information about water, ecosystems and plant and animal life. These educators will give informative presentations at your school and take fifth grade students into the field to touch, see, and truly experience playas as well as other relevant natural features of the High Plains water cycle (draws, springs & creeks).
- Through these presentations, every one of the fifth grade Science TEKS are touched upon (see Playa Festivals and TEKS) leaving students with experience to base future classroom learning on and reinforcing important principles.

Playa Festivals and TEKS

- **Playa Festivals address all six main objectives of 5th Grade Science TEKS**

- **Science**

- (1) In Grade 5, the study of science includes planning and implementing field and laboratory investigations using scientific methods, analyzing information, making informed decisions, and using tools such as nets and cameras to collect and record information. Students also use computers and information technology tools to support scientific investigations.
- (2) As students learn science skills, they identify structures and functions of Earth systems including the crust, mantle, and core and the effect of weathering on landforms. Students learn that growth, erosion, and dissolving are examples of how some past events have affected present events. Students learn about magnetism, physical states of matter, and conductivity as properties that are used to classify matter. In addition, students learn that light, heat, and electricity are all forms of energy.
- (3) Students learn that adaptations can improve the survival of members of a species, and they explore an organism's niche within an ecosystem. Students continue the study of organisms by exploring a variety of traits that are inherited by offspring from their parents and study examples of learned characteristics.
- (4) Science is a way of learning about the natural world. Students should know how science has built a vast body of changing and increasing knowledge described by physical, mathematical, and conceptual models, and also should know that science may not answer all questions.
- (5) A system is a collection of cycles, structures, and processes that interact. Students should understand a whole in terms of its components and how these components relate to each other and to the whole. All systems have basic properties that can be described in terms of space, time, energy, and matter. Change and constancy occur in systems and can be observed and measured as patterns. These patterns help to predict what will happen next and can change over time.
- (6) Investigations are used to learn about the natural world. Students should understand that certain types of questions can be answered by investigations, and that methods, models, and conclusions built from these investigations change as new observations are made. Models of objects and events are tools for understanding the natural world and can show how systems work. They have limitations and based on new discoveries are constantly

Playa Festivals and TEKS

- Science Continued...
 - 1 (B) make wise choices in the use and conservation of resources and the disposal or recycling of materials. being modified to more closely reflect the natural world.
 - 3(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;
 - 3(B) draw inferences based on information related to promotional materials for products and services;
 - 3(C) represent the natural world using models and identify their limitations;
 - 3(D) evaluate the impact of research on scientific thought, society, and the environment; and
 - 3(E) connect Grade 5 science concepts with the history of science and contributions of scientists.
 - 5 Science concepts. The student knows that a system is a collection of cycles, structures, and processes that interact.
 - 5(A) describe some cycles, structures, and processes that are found in a simple system; and
 - 5(B) describe some interactions that occur in a simple system.
 - 6 Science concepts. The student knows that some change occurs in cycles. The student is expected to:
 - 6(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles;
 - 6(B) identify the significance of the water, carbon, and nitrogen cycles; and
 - 6(C) describe and compare life cycles of plants and animals.

Playa Festivals and TEKS

Science Continued...

- 7 Science concepts. The student knows that matter has physical properties. The student is expected to:
- 7 (C) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water;
- 9 Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:
- 9(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem;
- 9(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and
- 9(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.
- 10 Science concepts. The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to:
- 10(A) identify traits that are inherited from parent to offspring in plants and animals;
- 10(B) give examples of learned characteristics that result from the influence of the environment.
- 11 Science concepts. The student knows that certain past events affect present and future events. The student is expected to:
- 11(A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow;
- 11(B) draw conclusions about "what happened before" using data such as from tree-growth rings and sedimentary rock sequences; and
- 11(C) identify past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources.
- 12 Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:
- 12(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering;

Playa Festivals and TEKS

- **Language Arts**

- 17 Writing. Students write about their own experiences. Students are expected to write a personal narrative that conveys thoughts and feelings about an experience.
- 27 Listening and Speaking/Listening. Students use comprehension skills to listen attentively to others in formal and informal settings. Students continue to apply earlier standards with greater complexity. Students are expected to:
 - (A) listen to and interpret a speaker's messages (both verbal and nonverbal) and ask questions to clarify the speaker's purpose or perspective;
 - (B) follow, restate, and give oral instructions that include multiple action steps; and
 - (C) determine both main and supporting ideas in the speaker's message.

Playa Festivals and TEKS

- **Mathematics**

14 Underlying processes and mathematical tools. The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school.

- identify the mathematics in everyday situations;

- **Art**

- **1 Perception.** The student develops and organizes ideas from the environment. The student is expected to:

- communicate ideas about feelings, self, family, school, and community, using sensory knowledge and life experiences; and organizers, outlines, and bibliographies;

- **2 Creative expression/performance.** The student expresses ideas through original artworks, using a variety of media with appropriate skill. The student is expected to:

- (A) combine information from direct observation, experience, and imagination to express ideas about self, family, and community;
- (B) compare relationships between design and everyday life; and
- (C) create original artworks and explore photographic imagery, using a variety of art materials and media appropriately.

Playa Festivals and TEKS

- **Social Studies**

5 History. The student understands important issues, events, and individuals of the 20th century in the United States. The student is expected to:

- (A) analyze various issues and events of the 20th century such as urbanization, industrialization, increased use of oil and gas, world wars, and the Great Depression;

- 7 Geography. The student understands the concept of regions. The student is expected to:

- describe a variety of regions in the United States such as landform, climate, and vegetation regions that result from physical characteristics;

- 9 Geography. The student understands how people adapt to and modify their environment. The student is expected to:

- (A) describe ways people have adapted to and modified their environment in the United States, past and present;
- (B) identify reasons why people have adapted to and modified their environment in the United States, past and present, such as the use of human resources to meet basic needs; and
- (C) analyze the consequences of human modification of the environment in the United States, past and present.

- 24 Science, technology, and society. The student understands the impact of science and technology on life in the United States. The student is expected to:

- (D) analyze environmental changes brought about by scientific discoveries and technological innovations such as air conditioning and fertilizers;
- (E) predict how future scientific discoveries and technological innovations could affect life in the United States.

- 26 Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

- (B) incorporate main and supporting ideas in verbal and written communication;
- (C) express ideas orally based on research and experiences;
- (D) create written and visual material such as journal entries, reports, graphic

Teacher Training

- Before hosting a playa festival, it is important for all fifth grade teachers to attend a Conservation Education Day.
- Administrators are invited as well!
 - Conservation Education Days are teacher trainings where you will receive pertinent background information on playa wetlands, soils and other valuable information to prepare you for your school's festival.
 - Landowners will be invited to Teacher Trainings to learn about federal programs and tools for playa conservation programs as well as information about saturated thickness and the Ogallala Aquifer.
 - Ogallala Commons hosts several of these throughout the spring and once in the summer. Seating is limited, so RSVP as soon as possible.
 - These trainings are a great place to meet other teachers involved in Playa Festivals as well as local playa landowners, scientists, and conservation professionals.
 - For attending a Conservation Education Day, teachers can receive 6 hours of GT Continuing Education Credit. (Through the Regional Educational Center)

Summer Field Tour

- Each summer, we offer a summer field tour in Nazareth, Texas (headquarters of Ogallala Commons).
- Teachers will enjoy a beautiful setting, a tour of our Playa Classroom and training from experts in several fields. As well as time to network, ask questions and give feedback to help improve Playa Festivals.
- Space is limited at the field tour, so when you receive your invitation be sure to RSVP promptly.

Booking a Festival

- Over the years the Playa Festival program has grown tremendously and openings for Festivals fill up quickly.
 - It is important to book your Festival well in advance.
 - Only schools who have sent teachers to a training session will be booked.
 - Be sure and check your school calendars to ensure your Festival will not interfere with school activities.
 - To book a Festival contact, Julie Boatright 806.445.6075 or at julieboatright@gmail.com
 - The best time for a Playa Festival is in the fall.
 - September 1st through November 15th
 - Spring Festivals are available, but limited to the first 3 weeks in May.

Playa Festival Check List

- Date of Playa Festival is confirmed with your school & Ogallala Commons
- Teachers have attended a Conservation Education Day
- Macroinvertebrates jar is ready (contact Ogallala Commons if not)
- Student Journals are made (Contact Julie Boatright)
- Agenda has been received from Ogallala Commons and approved by your school
- Hospitality Room arrangements are made
- Parent letters are sent out
- Playa Festival facilities and resources are arranged
- Pre and Post Assessments are printed (will be sent from Ogallala Commons)
- 1-gallon baggie for each student
- Materials for art module

Preparing for a Festival

- Administration
 - Each school's administration should be aware of a Playa Festival taking place. The approval, support, & participation of administrative staff is essential to a successful event.
 - Administrative staff should also be aware of the many visitors who will come to the school during the festival. (See your agenda for presenter list. Presenters vary depending on school, location, and availability).

Preparing for a Festival

- TEACHERS
- In mid-March you will need to prepare your Macroinvertebrates Jar (see Macro Jar Section)
 - It will need to be tended to throughout the summer
- Two weeks prior to your Playa Festival, you will receive an agenda from Ogallala Commons. Please review and contact us if any changes need to be made and if you have any questions about setting up for the day.
 - Once the agenda is finalized and approved by you and Ogallala Commons, make copies for all fifth grade teachers and administration.
- Equipment and space for presenters.
 - Ogallala Commons will inform you of the needs of presenters. Typical needs are a computer and projector for PowerPoint presentations, a white board and/or table space for demonstrations.
 - During the festival students are usually split into two groups. We will need a space that all students can gather in comfortably for presentations.
- Transportation. Buses will need to be arranged for transporting students into the field.

Preparing for a Festival

- TEACHERS
- During the festival, you will need to arrange for a hospitality room for Ogallala Commons staff and scheduled presenters.
 - Hospitality room should provide water, coffee and a hot meal for lunch.
 - Hospitality room will be needed for both days.
- Each student will need a Nature Journal – See Journals Section
- Each student will need a gallon-sized Ziploc bag for specimen collection.
- A note should be sent home the day before the Festival begins asking students to come to the festival prepared for field trips. This includes: (see sample letter on next page)
 - Wearing Jeans and tennis shoes or boots (CLOSED TOE) that can get dirty
 - A hat and sunscreen to prevent sunburn
 - A bottle of water
 - A pencil for journaling in the field
- The Day before the Playa Festival, students will need to take the Pre-Assessment Exam provided by Ogallala Commons. (attached)
- On the final day of the Festival, students will need to take a Post-Assessment. (attached)

Re: Playa Lakes Festival Checklist

Date: Sept. _____, 2009

Dear Parent,

Your 5th Grader will be attending our Playa Festival on September _____ at _____ Elementary School. The Festival is an excellent educational event consisting of both indoor learning sessions and outdoor field trips with the home room teachers, volunteers, and Festival faculty.

For the days of the Festival, we ask that your child have the following items:

- closed-toe shoes or tennis shoes, and not flip-flops for outdoor tours
- students should wear pants and not shorts for the two days, to be properly clothed for outdoor field trips
- Please send one snack and a drink with your child each day
- Send your child with a backpack each day, to carry journal, snack, a drink, and an ink pen for writing
- Please send your child with some kind of a hat, for outdoor activities

Thanks for your help to make this a fun and worthwhile learning event,

Darryl Birkenfeld, Ph.D.
Director, Playa Lakes Festival
806-945-2255

Macroinvertebrate Jar

- Macroinvertebrate jars demonstrate what happens in a playa lake after a rainfall. Playa lakes have a specialized life cycle of organisms that develop rapidly after water is introduced.
- Each school is responsible for constructing their own Macroinvertebrate Jar. These jars are an important part of Playa Festivals. Jars should be made in March, to ensure that plenty of plant and animal life have time to come to life and grow to visible sizes for Playa Festivals in the fall.
- Over time, many plant forms and macroinvertebrates will grow in the jar including chironomids (midges), oligochaetes (worms), and leeches. Charts for identification of these organisms are attached. In a real playa setting, shorebirds subsist on these microorganisms as they migrate through the area. Students will delight in the opportunity to observe these life forms.

Macroinvertebrate Jar

- Materials
 - Clear Plastic or Glass Jar
(approximately 1 gallon)
 - Playa Soil
 - Water
 - A Sunny Window

Macroinvertebrate Jar

- Instructions
- Put about 200 ml of playa soil in the bottom of the jar.
- Fill the jar up to within 2 cm of the top with fresh water. Do NOT cover the jar.
- Place the jar in a sunny window. By the next day the soil should have settled out of the water. Within several days (7-10) algae should start to grow. Other plant forms and invertebrates will follow.
- As things grow in the jar, students can observe them by using hand lenses, flashlights and microscopes. As water evaporates from the jar, more should be added to sustain the life inside.

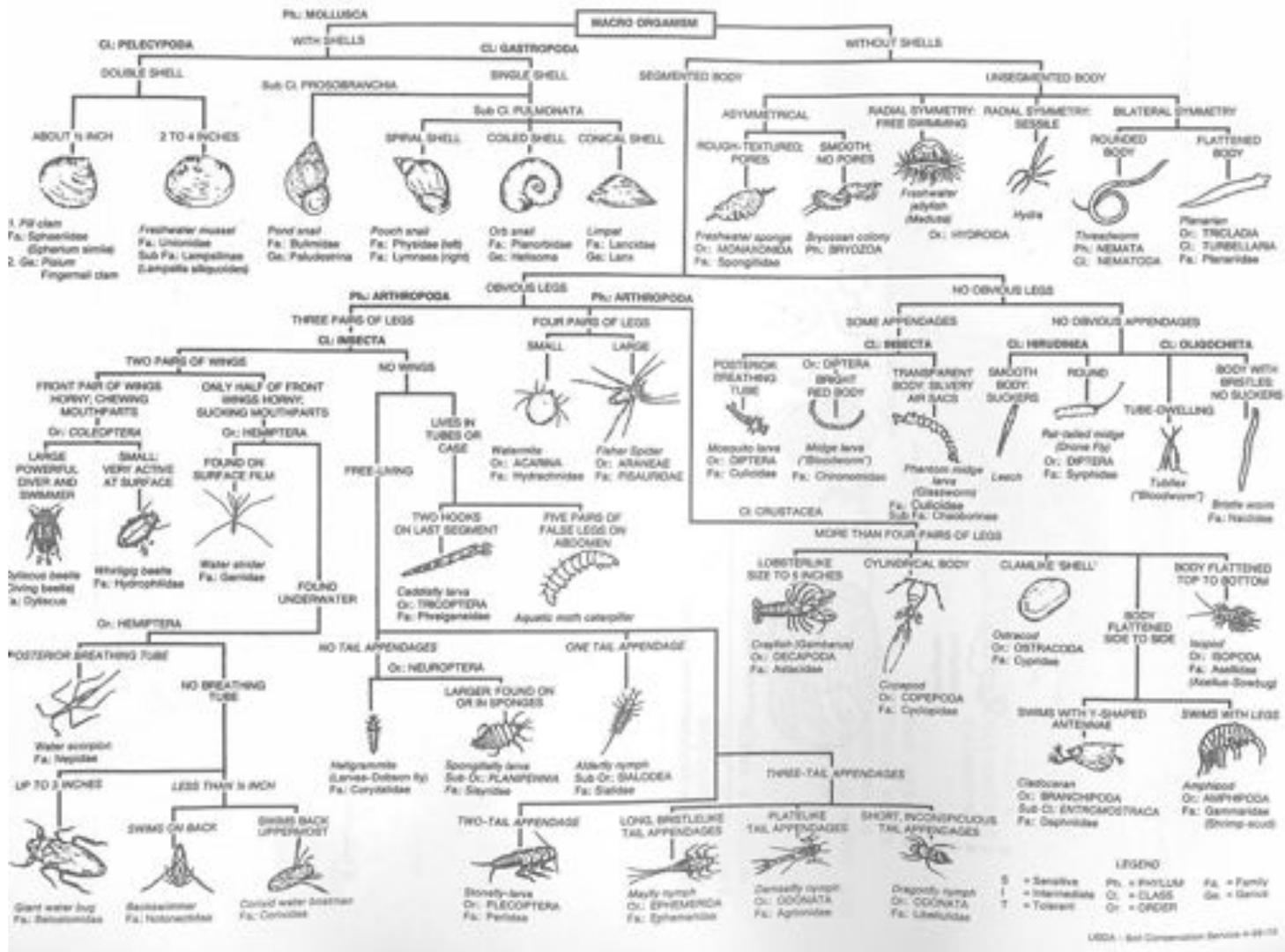


Collection of Playa Soil

Find a playa lake, wet or dry, and walk up to the edge, look for a change in the color of the soil from brown to black. Using a sharpshooter style shovel, dig down 3 -4 inches and collect the soil. Remember, you only need enough to fill the bottom 3-4 inches of your jar.

Macroinvertebrate Identification

Key to the Major Invertebrate Species of Stream Zones.

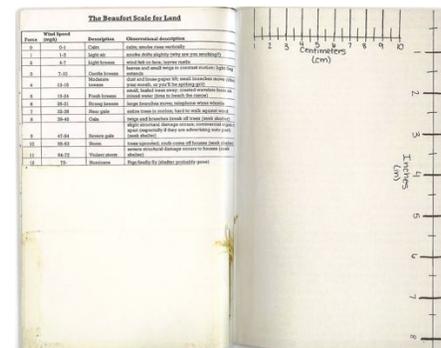
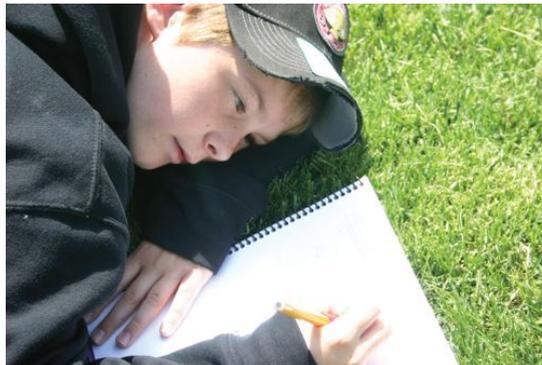
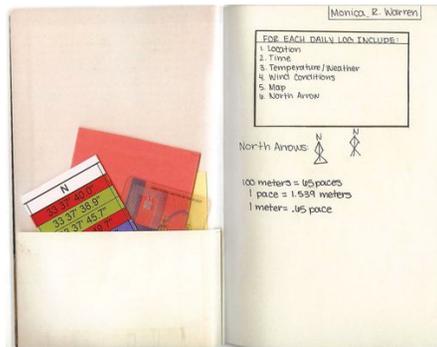


Nature Journals

- Journals are one of the most important items for students to keep throughout a playa festival. Each student will need their own personal journal. Over the past several years we have tried many variations of journals and here is what we have learned:
 - 1. The pages should be **blank**, but new spiral notebooks work too.
 - 2. Students need **at least 20 pages, more if they wish to keep this journal going after the festival**
 - 3. Journals really need a **sturdy front and back cover. Simply folding several sheets of blank paper and stapling the center works**, but gets folded, crunched up, torn easily and tends to be used more as a megaphone and for hitting neighbors. A great, inexpensive cover is card stock, a heavy, laminated construction paper, poster board or even a recycled manila folder. If you have the resources and wish to give each student a more permanent journal, many varieties are available at art supply stores. My favorite is the Strathmore 8.5 x 11.5 inch Hardbound Sketchbook. This is nice and big with good paper and plenty of room. Smaller versions are also available and an 8 x 5 inch journal may be more practical for children.

Nature Journals

- Once you have the journals made, there are a few finishing touches that make the journals really useful tools for making and recording observations. These ideas come from, “How to Keep a Naturalist’s Notebook” by Susan Leigh Tomlinson, a professor at Texas Tech University.
- 1. **Pockets for holding stuff.** Simply cut out a piece of construction paper to half the size of your journal. Glue three sides down inside the front or back cover and voilà you have a handy pocket.
- 2. **Frames for sketching.** This is simply a rectangle cut out of sturdy paper. We will trace this to make frames for sketches in our journals. Sizes can vary, I recommend a 2 x 3 inch rectangle.
- 3. **A measuring scale!** Students may find a plant or track that they want to make notes about, and size is a very important “field mark” to use in making identifications. It is handy to have a way of measuring in the field, but difficult to lug around a ruler, so it makes sense to draw one in our journal. Have students make some marks along the edge of a journal page using their ruler. Mark out four to eight inches, getting as detailed as you would like with the “in-between” marks.
- 3. **The Beaufort Scale.** This is a great way to help students gather information about weather without a weather station. This scale also gives student practice at using and reading charts and is helpful in being the observation process outdoors. (see next page for a copy of the scale)



Nature Journals

Make Copies of this scale for students to paste into their journals.



THE (MODIFIED) BEAUFORT SCALE FOR LAND

Force	Wind Speed (mph)	Description	Observational description
0	0-1	Calm	calm; smoke rises vertically
1	1-3	Light air	smoke drifts slightly
2	4-7	Light breeze	wind felt on face; leaves rustle
3	7-10	Gentle breeze	leaves and small twigs in constant motion; light flag extends
4	13-18	Moderate breeze	dust and loose paper lift; small branches move (close your mouth, or you'll be spitting grit)
5	19-24	Fresh breeze	small, leafed trees sway; crested wavelets form on inland water (time to beach the canoe)
6	25-31	Strong breeze	large branches move; telephone wires whistle
7	32-38	Near gale	entire trees in motion; hard to walk against wind
8	39-46	Gale	twigs and branches break off trees (seek shelter)
9	47-54	Severe gale	slight structural damage occurs; commercial signs rip apart (seek shelter)
10	55-63	Storm	trees uprooted; roofs come off houses (seek shelter)
11	64-72	Violent storm	severe structural damage occurs to houses (seek shelter)
12	73-	Hurricane	pigs finally fly (shelter probably gone)

The Second Day of the Festival

- NRCS, Texas AgriLife Extension Service, and other partners will conduct a presentation titled, “Watersheds and the Ogallala Aquifer.”
- Teachers at each school will oversee one Art Module project. The lesson plans for the art modules is on the next few pages.

Playa Art Module by Jill Swann

Objectives:

- Engage students in hands-on art activities that demonstrate understanding of the playa environment.
- Create original artwork using a variety of materials.
- TEKS:
 - 5.1.A communicate ideas about feelings, self, school, and community, using sensory knowledge and life experiences
 - 5.2.A combine information from direct observation, experience, and imagination to express ideas about self and community;
 - 5.2.C create original artworks using a variety of materials appropriately

Playa Art Module

- The Playa Lakes Festival Art module will involve students in representing their knowledge through tactile experience. Each half-day session will include individual artwork as well as the creation of a giant mural (1 per session) depicting a playa habitat.
- Activities will include:

- **1.) Playa mural:**

As students visit the playas they will be encouraged to collect examples of the flora and fauna they see. We will use these materials to illustrate a playa on a mural approximately 4' x 6'. We will draw out the basic shape of the playa, discuss which plants & animals might live in each area, and assign duties for putting the mural together. All students will be actively engaged in creating the mural. Animal life will be represented by students illustrating what they have seen or know would live around the playa.

- **2.) Waterfowl mobile and/or playa wildlife chalk drawings:**

Students will apply their knowledge to depict birds common to playas. These creations will be pieced together into mobiles to display in the hallways or classrooms. Depending on time, students may also use colored chalk to draw playa wildlife on black paper.

Playa Art Module

- Materials needed:
- large white paper (such as that used to cover bulletin boards)
- material collected from playas
- tape (large clear packing tape will work best)
- glue
- colors (crayons, markers, colored pencils, or any combination of these)
- Tempra paint- blue & white
- construction paper- variety of colors, particularly white & black
- colored chalk (optional- if we have time)
- small brass brads (approximately 100)
- 20 12"- 18" dowel rods
- dental floss or fishing line

Playa Festival Extras

- Ogallala Commons offers many things to do after a Playa Festival.
 - Outdoor Classroom
 - Online Lesson Plans
 - Playa Trunk (coming soon)
 - Reading Lists

Playa Classroom

- A place to see, touch and experience a prairie wetland.
 - Located in Nazareth, Texas
- The 800-square foot Playa Classroom features five interpretive panels describing key facts about playas, illustrations of playa plants, birds, and amphibians, as well as bench seating for 30 people, a work table, and two 1000-gallon rainwater collection tanks that store water harvested from the classroom roof. Funding and technical support for constructing the playa classroom was provided by Ogallala Commons, the U.S. Fish & Wildlife Service, Dixon Water Foundation, Playa Lakes Joint Venture, the Natural Resources Conservation Service and Texas Parks & Wildlife Department.
- Open to school field trips and group tours. Tours are \$1 per student.
- Call Darryl Birkenfeld to make reservations for your class at 806-945-2255

Photos of Playa Classroom



Online Lesson Plans

- Visit www.ogallalacommons.org for lesson plans that relate to topics covered at a Playa Festival.
- Read about what our teachers are doing as they share Playa Festival inspired activities they have designed.
- Find links to natural resource educational resources.
- See children's work, projects and art.

Playa Trunk

- Coming Soon!
 - This will be a traveling resource for regional teachers who have participated in a Playa Festival. It will include supplies, resources and wetland related lesson plans, including:
 - Playa Animal Puppets
 - Water Testing Kits
 - Soil Investigation
 - And Much More!

Playa Festival Reading List

- Coming soon!
 - We are working on a comprehensive list of books for children, educators and anyone else interested in learning more about playas, the Southern High Plains, Ogallala Aquifer, regional natural and cultural heritage, and native plants and wildlife.