

October 26 and 27, 2009- Focus Groups/Discussion Groups Conducted by Denver Zoo and Wind River Ranch Staff

Background: Denver Zoo offered to assist Wind River Ranch in conducting focus groups/discussion groups for Las Vegas area teachers to help inform the direction that Wind River Ranch education programs should take as they are developed. Conducting the focus groups were Teresa Gray and Abi Groskopf from Wind River Ranch and Meghan Rubinstein and Matt Herbert from Denver Zoo. (Note that Dawn Mazzagetti, Sarah Brenkert and Matt Herbert from Denver Zoo delivered 3 days of programming to local elementary schools the three school days prior to these meetings.)

Group 1

Attendance: The first group consisted of West Las Vegas School District Elementary teachers. Teachers had an in-service day so there was high attendance with approximately 50 teachers.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted 1 ½ hours. To stimulate conversation she asked how many teachers had been to the ranch and only about 4 raised their hands. Matt then took teachers out in to the hall to facilitate a spectrum activity (teachers were asked to arrange themselves on a gradient from strongly agree to strongly disagree to the statements made about particular programming. Answers are reflected in the questions listed below) in order to get some feedback from teachers on programming and resources. After the spectrum activity Meghan directed teachers to fill out sticky notes pertaining to the following four topics:

As a teacher, what type of (science) resources are you lacking?

Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?

Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?

Other ideas

Answers are reflected below in the question summary.

Questions with summary:

1. What outside education resources do you currently utilize for field trips and outreach?
 - Stargazing program
 - Rio Grande Nature Center
 - McCall's Pumpkin Patch
 - Rio Grande Zoo and Aquarium – outreach also
 - Las Vegas National Wildlife Refuge
 - Santa Fe Children's Museum
 - New Mexico Museum of Natural History
 - Albuquerque Planetarium
 - Capulin National Monument
 - Bandelier National Park
 - Villanueva State Park – outreach also

- Alpaca Ranch
 - Taos Indian Pueblo
 - Roughriders Museum
 - Science on Wheels (Bradbury Science Museum)
 - Albuquerque Museum – overnights
 - Rancho de las Golondrinas – windmills
 - San Augustin
2. Are you interested in learning more about external science resources?
 - Everyone agreed
 - External resources are important for hands-on learning, exposure, and more visual
 3. What are the barriers to taking field trips?
 - Money
 - Transportation
 4. What would be a reasonable fee for a program?
 - Under \$5/student would be reasonable
 - Their money comes from fundraisers
 5. Do you feel prepared to incorporate science concepts in to your classroom?
 - Some feel prepared but there is a lack of resources
 - Lack of time and materials
 - Math and reading are the focus so science is often cut
 6. Outreach
 - Convenience
 - Expertise
 - Exciting to have visitors
 - Exposure
 7. Overnights
 - Don't want to have the responsibility – note: community issue with abuse of students on overnights so this is a sensitive topic
 - Would need to invite parents
 8. Career programs
 - Important for all ages/grade levels
 9. As a teacher, what type of (science) resources are you lacking?
 - Professional development (6)
 - Incomplete science kits (5)
 - Time (4)
 - Money for field trips (3)
 - Materials for science experiments (3)
 - In class visits (2)
 - Money
 - Adequate balances and scales with customary and metric weights
 - Science equipment/supplies and the knowledge on how to use them
 - Knowledge of available outside resources for field trips or outreach
 - Teacher manuals (the how to)
 - Workbooks
 - Hands-on materials

- Project materials
- Supplemental readers that go with each science lesson
- Virtual science programs (technology)
- Bus money
- Science resources

10. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?

- Explora (3) – hands-on children’s museum, children were curious and focused, good science connection
- Taught students about their own local resources
- Bandelier (2) – students learned about history and culture, it was very informative
- Many different hands-on activities
- Kept the kids interested
- Rancho de las Golondrinas – rich history and knowledge of tour guides and windmills coincided with class curriculum
- Planetarium in Albuquerque – visual
- Multi-sensory approach to learning
- Alpaca ranch – outdoors with animals, tied to science unit, students enjoyed seeing how the fleece was used
- Using vocabulary taught in lessons to reinforce student learning and build background knowledge, students can apply what they’ve learned
- Villanueva State Park – stations regarding animals, ecosystems, trees, Santa Fe trail, etc.
- Tied in to science unit – went to aquarium after ocean unit, good to look at real jellyfish and sharks, etc.
- Trips that are well organized and have plenty of presentations and hands-on activities have been the best
- Students get to see the real thing – they retain the information better.
- Students experienced things they never had before at the zoo and museum of natural history
- A trip to San Augustin with hills, trees, wildlife and a river became “the best field trip ever” for many students. The highlights were wading and catching crawdads.
- Students do everything within the allowed space, hearing and being exposed to things they would not have otherwise seen.
- Planned lessons and activities that interest the students, hands-on learning, inspire!
- Taos pueblo – seeing famous historical sites close to home. Can actually see the pics/videos, then visit, and are connected to the Pueblo
- Santa Fe planetarium – after solar systems were taught in class so it confirmed what they had learned (they were excited that they knew answers to some of the questions)
- Field trip with daughter’s class to a farm close to Boulder, CO. The children actually performed many “farm” tasks such as milking a cow, collecting eggs, making a scarecrow, etc.
- Hands-on activities involving students, staff and parents. During an archaeology field trip participants got to dig, measure, etc. It was so realistic and rewarding.
- Los Alamos Science on Wheels

11. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?

- Everyday math (3)
- Science – because of time and not enough resources
- Science/social studies – lack of materials, academic vocabulary

- Math
- Reading
- Connection to the natural world
- Liquids/gases
- Space/time

12. Other ideas

- Offer grants to go to WRR (3)
- Tradition and culture of NM (2)– hornos, drying chicos, weaving, fishing, hunting, making tortillas, caring for animals, etc.
- More hands-on activities or field trips to reinforce curriculum landforms
- Field trips to the ranch would benefit science and social studies
- It would be nice to have a science fund to buy what you need
- What can students do (at their age) to help animals/nature/people coexist
- Offer your programs to secondary school (middle/high)
- Professional development at the ranch for teachers
- Schools need to bridge with community agencies in order to recognize and address the career demands of the future
- Grants for teachers allowing them to acquire more resources to help them teach
- Grants for teachers
- Hands-on with dissection (students view if younger and participate if older). With an ocean unit a group of high school students did a starfish dissection for the kinders. Wow...

Group 2

Attendance: The second group consisted of West Las Vegas School District Middle and High School teachers. Teachers had an in-service day so there was high attendance with approximately 30 teachers.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted ½ hour as our time had been cut short. Matt began the needs-assessment by making the same spectrum statements (without the actual spectrum activity) and asking teachers to raise their hands depending on how strongly they felt about each statement. After this Meghan directed teachers to fill out sticky notes pertaining to the topics addressed in the question summary 4-7.

Questions with summary:

1. Are you interested in learning more about external science resources?
 - Everyone agreed
 - Most everyone felt that science resources provided to them by the district were not plentiful
2. What are the barriers to you taking field trips?
 - Money
 - Time
 - Transportation
 - Awareness
3. Other comments
 - Career and internship programs would be beneficial
 - Multi-curricular approach would be important in taking a field trip for middle and high school groups
4. As a teacher, what type of (science) resources are you lacking?

- Money (6)
 - Lacking materials in Spanish (2)
 - Lack of information regarding what resources are available
 - Affordable transportation
 - Time
 - Supplies
 - Knowledge of WRR aims and goals
 - Supplies for labs and hands-on activities
 - Hands-on manipulatives for math
 - Real world experiences in math
 - Informative, high interest science reading material
 - Need a place to do research (as is planned with water studies) for WLVHS MESA
 - Laminated world maps, complete set of maps both political and physical
5. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?
- Coyote Creek (3) – back to nature. Many students fished for the 1st time. BBQ, clean-up, nature walk, quality time with parents, hands-on
 - Interesting, informative, capable staff
 - Integrate many subjects – good example is Bandelier
 - Discover the history of our area
 - Capulin Mountain (volcano) in Raton, NM, study of earth science
 - Scavenger hunts or questions to answer during activities
 - Denver Zoo – activities were hands-on
 - Hands-on presentations, active participation, high interest for middle/high school
 - Sufficient information, historical background of sites, and hands-on experiences
 - Students engaged and interested, did work prior to and after
 - NM tech – presentations in civil engineering, materials engineering, and mechanical engineering
6. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?
- Coordinate graphing and integers (addition, subtraction, multiplication, division)
 - Concepts which do not have lab activities (chemistry)
 - Hands-on historical activities
 - Math
 - The culture of Hispanics related to usage in Spanish language
 - Real world chemistry experiences
 - Human's effect on earth
 - Anything when there are no labs or hands-on activities
 - Animal husbandry
 - Life science
 - Environment
7. Other ideas
- NM culture/traditions for students to become more aware of their backgrounds
 - Field trips with info on our Hispanic culture is important
 - Advertising on locally-owned
 - Instructional assistant with special needs student – teach kids vocations

- Field trips and classroom presentations
- Preschool and Headstart children
- Be an interactive site
- Meditation site for children and adults
- Lessons in Spanish
- Bring it to the school
- Make available to us types of presentations that would be informational to us, so as to consider future field trips
- Music at the ranch – you could feature different student music groups
- Present your goals to the students so you can get their input
- You should go to Kiwanis Club meetings in the plaza on Tuesday mornings at 7am to present about WRR. They provide funding for youth programs. They also meet at noon. You could just show up.

Group 3

Attendance: The third group consisted of two elementary schools from Las Vegas City School District. There were approximately 15 teachers in attendance and attendance was optional.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted 1 ½ hours. To stimulate conversation she asked teachers what outside resources they are currently using. Matt then facilitated a spectrum activity in order to get some feedback from teachers on programming and resources. After the spectrum activity Meghan directed teachers to fill out sticky notes pertaining to the topics addressed in the question summary 7-10.

Questions with summary:

1. What outside education resources do you currently utilize for field trips and outreach?
 - Planetarium
 - McCall's Pumpkin Patch
 - Rancho de las Golondrinas – wind farm?
 - Highlands – visiting science
 - Wildlife Refuge – Friends of Birds?
 - Natural History Museum
2. Are you interested in learning more about external science resources?
 - Everyone but one person agreed
 - Hands-on for special ed
 - Support curriculum
 - Boredom in classroom
 - Broaden experience
 - Supplement teacher knowledge
 - "making science" instead of "learning science"
 - Difficult to find Kindergarten resources
3. Do you feel prepared to incorporate science concepts in to your classroom?

- The group was divided in half with only 5 people saying they strongly agreed and 2 people saying they strongly disagreed
 - There is a lack of professional development
 - There is a focus on reading and math
4. What are the barriers to taking a field trip?
 - Money
 - Time
 - Distance
 5. What is a reasonable fee to charge for a program?
 - Under \$5/person
 6. Career programs
 - Gives it a purpose/ownership
 - Foster a love of science
 7. As a teacher, what type of (science) resources are you lacking?
 - Materials (6)
 - Money (3)
 - Time (3)
 - Professional development (2)
 - Good quality microscopes (2)
 - Science lab with sinks and tables
 - Hands-on materials with lesson plans
 - Science materials and equipment for experiments
 - Anything
 - Science equipment
 - Field trips
 - Kindergarten appropriate age level
 8. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?
 - Explora (2) – guided and hands-on
 - Capulin – at the end of volcano unit
 - Hands-on activities
 - Natural History and Explora museum – hands-on activities and knowledgeable people
 - Exercise from the terrain
 - Scenery
 - Hospitality
 - Natural History Museum - Hands-on activities, things they see and experience
 - Hawks Aloft – presenter came 2-3 times and then we came up with a conservation project as a class
 - Planetarium
 - Hands-on lab at NHistory museum
 - Rancho de las Golondrinas – hands-on social studies activities
 - Students are engaged, excited, and it's fun and interesting
 - Pumpkin patch – fit within our theme and with classroom curriculum
 - Outdoors
 - Exposure

9. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?
- Math (3)
 - Electricity/magnetism/energy
 - Concepts of cycles (water, food, life)
 - Higher order thinking
 - Multi-step problems
 - Electricity (no materials and lack of knowledge)
 - Science lab experiments (lack of materials)
 - Physical science concepts
 - Measurement – converting weights and measures
10. Other ideas
- Geology (view strata sites of earthquakes and fault lines and fossils)
 - Bring the field trips in to the classroom (for more hands-on)
 - Microscope lab and prepared activities for plant and animals cells
 - Field trips – some kids never get to go out of town
 - Scavenger hunts and something hands-on
 - Kindergarten appropriate

Group 4

Attendance: The fourth group consisted of Las Vegas City School District Middle School. There were 8 teachers in attendance, all of whom taught sciences except one that was a K teacher.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted 1 hour. To stimulate conversation she asked teachers what outside resources they are currently using. Due to the small attendance for this group we did not do the spectrum activity. Instead, Matt lead a discussion on the topics below. After the spectrum activity Meghan directed teachers to fill out sticky notes pertaining to topics addressed in question summary 4-7.

Questions with summary:

1. What outside education resources do you currently utilize for field trips and outreach?
 - Highlands visiting scientist magic show
 - Pritzlaft Ranch
 - MESA programming
 - Gear Up program
2. What are the barriers to taking a field trip?
 - Budget
 - Time
 - Awareness/contact info
 - Age-appropriateness
 - Transportation
3. What would be the best way to advertise programs at WRR to make sure you would receive the information?
 - Send it to administration
 - Send it to personal email
 - Face-to-face

4. As a teacher, what type of (science) resources are you lacking?
 - Money to renew our license (\$300) for “frog-guts.com”
 - Science fair project ideas that we could use WRR or DZ as a resource
 - Field trip money/cost for travel
 - Professional development on how to incorporate the outdoors into our curriculum
 - More materials for hands-on learning such as manipulatives and supplementary materials that are geared to the needs of the students
 - Time to organize and plan field trips and professional development
 - Money
 - Ways to integrate science in to other content areas due to lack of time in our day (2)
 - Computer/website access
 - K-12 science collaboration and alignment
 - Funding for class materials/disposable supplies
 - Necessary time for science collaboration on a regular basis
 - Funding for microscopes or virtual labs
 - Need to know what field trips are available in the area
5. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?
 - Pre-set curriculum
 - Prior knowledge of activities
 - Organized so that all we were responsible for was getting the students there
 - Great communication (info on what is offered)
 - Pre-lesson prior to field trip (ex. Pumpkin patch)
 - Hands-on components
 - Students could take log-books and document info for later discussion
 - Ex. Professionals for forest ecology, U.S. Forest Service
6. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?
 - Space science
 - Earth’s interior
 - Understanding things they can’t see
 - Vocabulary is sometimes too advanced for their level
 - Simplifying concepts through using more hands-on approach to teach
 - Special ed – mostly all topics are difficult for my students to address. Instruction needs to be at a very slow pace and much needs to be done on-to-one
7. Other ideas
 - Make a series of trips that students could connect from year to year starting with kindergarten and having consecutive field trips yearly
 - Use Harcourt K-6

Group 5

Attendance: The fifth group consisted of Robertson High School of Las Vegas City School District. There were 4 teachers in attendance and attendance was optional. All teachers taught sciences.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted 1 ½ hours. To stimulate conversation she asked teachers what outside resources they are currently using. With only 4 teachers the program was much more informal with a discussion led by Matt on the following topics. After that Meghan directed teachers to fill out sticky notes pertaining to the topics addressed in question summary 3-6.

Questions with summary:

1. What outside education resources do you currently utilize for field trips and outreach?
 - NM Highlands University – Chemistry magic show
 - MESA programming
 - Luna Community College
 - UNM
 - Dr. Nelson – Highlands
2. The following are general notes from the informal conversation with teachers:
 - There is no chemistry at the high school level
 - Physical science is the freshman science
 - Biology is for sophomores and includes environmental science
 - The ranch would be a good venue for the following activities/programs:
 - Special needs students
 - MESA service-learning
 - Career focus
 - Overnights for MESA
 - There isn't much science professional development provided. Better to pay for subs and do it during the week or offer a stipend on the weekend to get teachers to participate.
 - GEAR Up and NM MESA help to cover field trip costs
 - Teachers are not required to do any continuing education in NM
3. As a teacher, what type of (science) resources are you lacking?
 - Materials
 - Books
 - Supplemental materials (including Bio I)
 - Lab supplies
 - Updated supplies and enough of them
 - Physical science training
 - Special needs ideas for physical science
4. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?
 - Never had the opportunity
5. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?
 - Chemistry
 - Math concepts are difficult for freshman to understand and relate to chemistry and physics
 - Genetics (special needs)
 - Physical science (special needs)
6. Other ideas
 - Let me know about inter-curricular ideas to incorporate history at WRR
 - Please keep me posted with emails!

Group 6

Attendance: The sixth group consisted of Mora Schools (elem, middle and high). There were 4 teachers in attendance and attendance was optional. There was another meeting going on at the same time about MESA.

Methodology: Teresa began by introducing the ranch and what we were hoping to accomplish in the allotted 1 hour. To stimulate conversation she asked teachers what outside resources they are currently using. With only 4 teachers the program was much more informal with a discussion led by Matt on the following topics. After that Meghan directed teachers to fill out sticky notes pertaining to the topics addressed in question summary 5-7.

Questions with summary:

1. What outside education resources do you currently utilize for field trips and outreach?
 - CASM
 - Explora
 - Zoo To You – Albuquerque Zoo
 - Bradbury Museum
 - Cedarcrest – skulls, skins, etc.
 - Sandia Mountain Research Center
 - Museum of Natural History – Proyecto
 - UNM ropes course
 - NRCS – 4th graders go to the tree farm (erosion, tree ID)
 - Career: JAG (Jobs for America’s grads)
 - MESA programming
2. What are some of the barriers to taking field trips?
 - Cost of program
 - Conflict with sports, students are worried about getting back too late
 - Awareness
 - Time
3. Professional development
 - No p.d. or training on how to use materials or new methodology
 - Incentives:
 - Free kits and materials
 - Stipend for weekends
4. Other pertinent information shared:
 - 25% of high school students participate in MESA
 - 33% of middle school students participate in MESA
 - Family activities would be successful
 - Better to have the program come to you
 - MESA pays for field trips
 - A lot of the students are hunters, go camping, fishing, and love animals. They go out looking for antlers, etc. They get outdoors a lot.
 - Use Harcourt kids but there are no kits or hands-on activities
5. As a teacher, what type of (science) resources are you lacking?
 - Technology (2): projecting microscopes that you connect to show on TV

- Teacher's edition science kits
 - Microscopes
 - Lab equipment
6. Of field trips you have participated in that you felt were successful, what were the qualities that made that trip successful? How did it benefit your students?
- Explora
 - Museum of Natural History
 - Ropes course from UNM because it came to us
 - Connecting lesson to the field trip – 2nd graders to Salmon Ranch Raspberry Farm during plant study unit
 - Hands-on activities
7. Of the topics you are required to cover for your class, which are the most difficult for you to address and/or for students to grasp?
- Scientific method
 - Science and technology
 - Environmental science
 - Physical science
 - Astronomy
 - chemistry

Summary:

- Paying for field trips – everyone said that under \$5/student is reasonable but then also said that money was a barrier and a resource they were lacking. Funding ideas that were thrown out were MESA, GEAR UP, and Kiwanis Club.
- Professional development – Many teachers said that they were lacking professional development as a resource, specifically in the sciences. Many times they are given kits and there is no training and kits are incomplete. Teachers are also not required to keep up on any continuing education for credit in order to keep their license.
- Outreach – Many teachers pointed out that it's easier to have organizations come to the school than to go on a field trip.
- Subject areas difficult to address – math, physical science, chemistry, and social studies came up the most frequently
- A lot of resources currently used address history and Hispanic culture
- Mora students are more in touch with the outdoors on a regular basis than are their Las Vegas City peers
- Didn't seem as tied to standards when it comes to choosing field sites and/or outreach programs
- Kindergarten teachers were in agreement that they are lacking science resources and that most field sites do not address their needs
- Barriers present were universal – time, money for transportation and programming, and awareness
- Chaperones and district approval are not an issue
- Successful field trips = hands-on activities and curriculum connection/relativity
- MESA had a huge presence in every school
- Teresa should add more attendance information to this document such as teacher content/grade level as well as venue (specifically where we held each focus group) information where absent