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Evaluative Measures: Assessing the Effectiveness of Exhibits and Programs in Zoos

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EVALUATIVE MEASURES: ASSESSING THE EFFECTIVENESS OF EXHIBITS AND PROGRAMS IN ZOOS

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Abstract:

This thesis examines program and exhibition evaluation as pertaining to zoos and aquariums in the United States from the 1960's to the present. Research conducted for this thesis focuses on the design, implementation, and evaluation of zoological programs and exhibitions. Also examined are studies of zoo and aquarium visitors related to audience research, informal learning, and psychographics. Case studies as well as published procedural and evaluative methods from zoos and aquariums across the United States are used to identify best practices. In addition, two evaluation tool kits are presented to assist the Seneca Park Zoo with evaluative measures for exhibits and programs at the zoo. In practice, the findings are intended to provide a framework for this institution to evaluate the effectiveness of educational programs and exhibitions, their impact on visitors, and to expand the scope of visitor studies and audience research at the Seneca Park Zoo.

I. Introduction

Exhibitions and programs are developed and implemented by the staff of cultural institutions owning collections, including zoos, with the intent to provide a service to their viewers. Whether the service's purpose is to further education or to provide entertainment or leisure a planned benefit to the visitor is intended as part of the exhibition and program development process. This study documents how zoos evaluate the effectiveness of exhibitions and programs at providing those benefits and offers a case study of one such evaluation.

To begin, this thesis approaches the evaluation process by synthesizing literature from the fields of exhibition design, program design, and, further, offers a brief history of theory and practice. Choice literature has been included in order to provide historical reference to what practices were undertaken in the fields of program and exhibition evaluation as well as the larger field of visitor studies. Scholarly literature also documents transitions in exhibition theory for the exhibition of live specimens. Following this historical introduction, reports, and case studies and other publications produced over the last ten years are examined. Building upon this examination of the field, this thesis then examines one organizations approach to visitor studies.

Building upon the literature review and field experience conducted during an internship during the Spring and Summer 2015 at the Seneca Park Zoo in Rochester, New York, the intent of this research is to yield two evaluation toolkits – one document for exhibitions and one for programs. Although their intended use is evaluation conducted at the Seneca Park Zoo, the toolkits may have broader application across the area of zoo evaluation. It should be noted, too, that for the purposes of the study, the emphasis will be

upon zoos, although many conclusions are drawn from, and may apply to, aquarium literature and practices as well.

Part 1: Literature Review

II. Exhibition Development

The stewardship of captive animals has been part of human culture since early nomads began domesticating animals millennia ago. As humans settled and civilizations grew, capturing and housing exotic animals grew in popularity as a way of displaying status and providing entertainment. Factors that continue to influence the husbandry of captive animals to this day. Examples of captive animals displayed for public and private entertainment can be traced to Ancient Egypt and Roman empires, with popularity expanding through the ages. Despite this, the history of exhibition design for the use of this paper will be limited to Victorian periods and forward.

Modern zoos gained acceptance and prominence beginning about 200 years ago in the form of menagerie style display of taxonomic collections. These institutions focused on the scale of species displayed, often containing a large number of species housed individually in sterile pens, typically tile and concrete, designed to give the visitor a taxonomic appreciation of the species held within.[1] Although these institutions housed a large variety of species, the purpose of these collections was primarily public recreation[2]. Such display methods paid little concern for the well-being of the individual animal and more on the fact that the animal was visible, as exotic species were considered a novelty by

[1] Kay Anderson, "Culture and Nature at the Adelaide Zoo: At the Frontiers of Human Geography," *Transactions of the Institute of British Geographers*, 1995, 275–94.
[2] George Rabb, "The Evolution of Zoos from Menageries to Centers of Conservation and Caring," *Curator* 47, no. 3 (July 2004): 237–46, doi:10.1111/j.2151-6952.2004.tb00121.x.

many citizens. These types of display methods are considered the first generation of exhibition styles.

Second generation exhibition styles were developed through the nineteenth and twentieth centuries as a method of allowing more space for the animals as well as better viewing opportunities for visitors[3]. Typically these enclosures were designed with the same sterile, easy-cleaning design but accepted that small cages were not acceptable for the housing of previously wild animals. Many exhibits of this type sought to provide a natural barrier between the species held and the viewers, creating the illusion of a natural habitat for the animal. These barriers allowed for the transition from naturalistic barriers to fully naturalistic enclosures.

Shifting to the 21st century, the third generation of exhibition style began to take hold. Third generation exhibitions, or immersion zoos as described by Coe, began to be realized by professionals and visitors alike as a more appropriate method of housing and displaying captive animals[4]. This type of exhibition focuses on providing a naturalistic environment for the species held in the enclosure while allowing for access for visitors to view the animal. As research in to animal psychology and findings related to the impacts on captive animals became more widely studied and circulated to the public, visitors no longer accepted menagerie style, and to a lesser extent second generation exhibition, as an acceptable method of housing captive animals. As such, zoos were pressured in to

[3] Mary Joyce Shettel-Neuber, "Zoo Exhibit Design: A Post-Occupancy Evaluation and Comparison of Animal Enclosures" (Ph.D., The University of Arizona, 1986), http://search.proquest.com.ezproxy.rit.edu/docview/303473025/abstract?accountid=108.
[4] *Future of Zoos 1-10 Coe Design and Architecture*, 2012, https://www.youtube.com/watch?v=aGAeW4exiXo&feature=youtube_gdata_player.

developing exhibitions that met the viewing expectations of the public as well as the psychological and physical needs of the animals the zoos were charged to care for.

By visiting many contemporary zoos, one may contend that menagerie and second-generation exhibitions have been phased out and all that remains in the repertoire of zoo exhibition design are third generation naturalistic exhibitions. While this may someday be realized, menagerie and second-generation exhibitions are still widely used throughout the United States and the rest of the world as a largely accepted and practical way of displaying captive animals. This is not to say that the minimalistic enclosures of the Victorian era are still the standard. Naturalistic elements as well as novel, un-natural elements designed to imitate a natural commodity in the animal's natural habitat, distractions have been incorporated into these exhibitions as a way of improving animal behavior and health. These elements have been incorporated over the years as further research comes to light detailing the physical and psychological needs of a particular species. While the size of the overall enclosure may not have changed, due to any number of institutional factors, including expansion limitations, particular land resources may be better suited for another species, behavioral characteristics of the species displayed, and others, an enclosure may still be enriched despite the enclosure remaining largely the same structure.

Exhibition evaluation is inherently complex because rather than focusing solely on the visitor and whether or not they have gained anything from their viewing experience; the zoo must also take in to account the effects the viewing environment has on the animal contained with in it. Arguably in exhibition design, the impact on the animal must be considered first and then the impact the animal's behaviors have on the viewer, and finally the educational and viewing materials provided to the visitors. This mentality is displayed

at the Seneca Park Zoo as indicated by an observed conversation between the hyena keeper Mary Ellen, and a young child around the age of ten. A scheduled feeding demonstration program was expected at the hyena enclosure, but in this particular instance the hyena decided not to participate. At this point a child questioned, "Why they didn't just make the hyena come out and eat?" To this query, the keeper replied that the zoo never makes the animals do something they are uncomfortable with just for a program.

It should also be included that the actions taken by zoos using data gathered from exhibit evaluations cannot be applied in the same manner as other cultural institutions. Institutions with living collections must make considerations in to the well-being of the animals in their care when considering to alter an exhibition spaces, because the exhibition space is the species habitat.

III. Program Development

Whether designing a program or exhibition, the institution must identify the key themes or messages that they want the project or exhibition to convey. For zoosthe key message of many programs and exhibitions is to educate the public about a specific species or conservation issue[5]. With the development of key themes and desired outcomes, the institution now has defined goals which the program or exhibition is expected to achieve. As important as the message, the institution must also have a specific audience (e.g. age, education level, family types) in mind at the early stages of development. As rudimental as

[5] John H. Falk et al., "Why Zoos and Aquariums Matter: Assessing the Impact of a Visit to a Zoo or Aquarium" (Association of Zoos and Aquariums, 2007).

it may sound, having a defined target audience can ensure that the materials developed can be highly grounding[6].

IV. Evaluation

Zoos, by nature and action, are institutions that promote education and awareness of issues facing their animals. A survey of zoo mission statements reveals that education and conservation are at the forefront of many institutions' mission. With such important issues at hand, institutions like the Seneca Park Zoo are striving to understand whether or not their programs and exhibition materials are presenting the messages planned by staff. Not only does the institution want to know whether or not the visitor is receiving their message, but whether or not the audience has learned anything. The way to accomplish this is through evaluation, but summative evaluations are only one step of the evaluation process.

Evaluation, as defined by the National Science Foundation's Joint Committee on Standards for Educational Evaluation, is the "systematic investigation of the worth or merit on an object."[7] This definition originated in 1994 and has since been revised to include "the systematic investigation of the quality of programs, projects, subprograms, subprojects, and/or any of their components or elements, together or singly."[8] The scope of investigation in terms of zoo programs and exhibitions can refer to the attractiveness of a particular element in an exhibition, the legibility of printed materials, or if an exhibit had

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[6] Joy Frechtling Westat et al., "The 2002 User-Friendly Handbook for Project Evaluation" (National Science Foundation, 2002).
[7] Donald B. Yarbrough et al., *The Program Evaluation Standards: A Guide for Evaluators and Evaluation Users* (Sage Publications, 2010). 24.
[8] Donald B. Yarbrough et al., *The Program Evaluation Standards: A Guide for Evaluators and Evaluation Users* (Sage Publications, 2010). 25.

prompted measurable change in a visitor's conservation behavior. Evaluation generally follows two to three stages: the formative evaluation, preparation, and summative stages (Bitgood, Wells, Westat). However, three stage evaluation plans have been combined in recent years to reflect a more streamlined process, focusing on pre-installation and post-implementation, or formative and summative evaluations. Evaluation in each stage of the process involves many different possibilities based on the individual project. In order to convey the sheer scope of possible evaluations, the information provided in this literature survey will be quite broad.

The evaluation process serves many purposes for zoos s. Not only may evaluation shed light on the particular effectiveness of an exhibition or project, evaluation can also be used as a tool for understanding a particular issue or concern, as shown in Hood's work in response to voter acceptance of proposed funding increases[9]. Whether the proposed evaluations occur as part of development or are conducted as a response to an institutional phenomenon, evaluation is a continual process that relies on the gathering of data and its application towards improving the project. Throughout this process careful consideration should be heeded to the: formulation of key goals and objectives, research, intended audience, stakeholder concerns, budget, planned benefits to visitors, animal care, planned short- or long-term affects on visitors. By conducting evaluation as part of project development process, the institution can formulate specific objectives and ensure that the planned objectives are reaching visitors as intended.

[9] Marilyn G. Hood, Ernestina Short, and G. Donald Adams, "Audience Research Helps Museums Make Informed Decisions," *Visitor Studies* 4, no. 1 (January 1, 1992): 38–55.

V. Formative Evaluation

Formative evaluation focuses on the design process and pre-installation changes of the program or exhibition. Is the institution identifying key objectives, outcomes, stakeholders, and methods by which the institution will translate the message? As mentioned previously, defining clear goals and objectives as well as a target audience are vital steps in developing a project or program. When developing an evaluation plan for the project or program, the institution must ensure that the goals and objectives laid out for the program are measurable and the methods that will track the efficacy of the project. Also important is the identification of key stakeholders. As with many other plans developed by an institution, the evaluation plan identifies the key objectives as well as the people who will be affected by the project and how they will be affected.

In order to identify a target audience the zoo or aquarium should take steps to identify who in the community already visits their institution as well as the potential audience of the institution. In the case of the Seneca Park Zoo, as well as most other zoos s, the visiting audience consists of primarily families including children.[10] Although this may be the largest represented group visiting most zoos, it is certainly not the only group. In order to understand the greater audience visiting the institution, a zoo or aquarium may engage in demographic studies, quantitative measurements of the ethnographic and socioeconomic groups visiting their institution. Identifying the demographics of visitors already attending the zoo can be accomplished fairly simply through the usage of surveys designed to inquire about patrons race, marital status, children, and potentially income. These types of surveys can be designed and administered by zoo staff on grounds or mailed

[10] Kate Bronislawski, "Visitor Demographics," July 30, 2009, https://www.aza.org/visitor-demographics/.

to members and other visitors who have previously acknowledged that they would like to receive institutional mailings. In order to identify possible visitors of the institution, similar surveys can be administered through the use of purchasable mailing lists as well as the use of market research groups that the institution may already be collaborating with. With this information the institution can develop programs tailored in complexity to their target audience.

Formative evaluation follows the project through its design phases and continues to assess the development and intentions of the project until its completion. As described further in this document, during the design stages of the interactive observational study completed at the Seneca Park Zoo, the evaluation staff continually revised the evaluation tools during preliminary testing. Tools were designed and tested during trial observations to determine the tool's efficacy; in some instances tools were re-designed to better accommodate visitor actions. The main purposes of the formative evaluation process are to document and evaluate the institution's progress in following the approved development plan and documenting any changes[11], how the exhibition or program development is keeping pace with planned benchmarks, and whether or not the project will have a measurable impact or affect on its viewers.[12] Each of these components are vital in maintaining progress and bringing any ineffective elements of the design to light so that they may be adjusted before the implementation.

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[11] "Evaluation Springboard - Evaluation 101: How to Do an Evaluation," accessed April 12, 2015, http://www.evaluationspringboard.org/evalHowTo1.html.
[12] Joy Frechtling Westat et al., "The 2010 User-Friendly Handbook for Project Evaluation" (National Science Foundation, December 2010).

VI. Logic Model

A valuable component of formative evaluation is the formulation of a logic model. This model is developed as a plan that outlines strategies and desired outcomes and provides the basis for surveys and other measurement tools.[13] More precisely, a logic model represents the "theory and assumptions underlying the program. A program logic model links outcomes (both short- and long-term) with program activities/processes and the theoretical assumptions/principles of the program."[14] Typically a logic model is built upon five categories: inputs, activities, outputs, outcomes, and impact[15]. Each of these categories relates to specific facets of the planning, installation, and post-implementation process. [16]

When considering the inputs and resources that go in to an exhibition or program it is important to identify the amount and sources of funding being used for a project, as well as external labor required in construction and staff time. The inputs section is intended to identify all the sources of funding and costs associated with the development process. Donors, grants and other sources of funding all come attached with an organizational or personal opinions or requirements as to how their money will be spent. Making sure that these spending requirements are met can make sure the project continues without any controversy. The input section also takes in to account any external costs that may be

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[13] "TCC Group | Results | The Philadelphia Zoo," accessed April 12, 2015, http://www.tccgrp.com/results/philazoo.php.
[14] "W.K. Kellogg Foundation Logic Model Development Guide" (W.K. Kellogg Foundation, January 2004), https://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide.
[15] "Logic Model Workbook" (Innovation Network, Inc, n.d.), http://www.innonet.org/client_docs/File/logic_model_workbook.pdf.
[16] "W.K. Kellogg Foundation Logic Model Development Guide."

accumulated over the course of the project, from contracting outside firms for assistance to construction materials for developing models. Simply documenting and budgeting planned expenses allows for tracking over the course of the project. This information is important in evaluating the development process and identifying any areas that may be inefficient or require additional resources. Staff time also must be accounted for as this expense provides a measurable benchmark of hours in which areas of the project should be completed.

The next area of the logic model is intended to translate how each input is being utilized. The activities section determines the specific activities that will be used to reach the project's intended outcome.[17] This includes which funds are being allocated to which areas, a plan of work for staff, as well as what tools will be used to accomplish the project. Activities also refer to any services that will be provided in order to complete the project. Depending on the nature of the project the services included may vary from distributing notices at the entrance to conducting teaching sessions with area educators. Identifying these activities and their expenses allows the evaluator to compare how funds are being used versus how the funds were intended to be spent as well as making sure that pre-implementation programs and services are operating as intended.

These areas of the model account for the institutions activities related to the project. The following segments, outputs, outcomes, and impacts, are all intended to describe the intended consequences that occur as a direct result of the implementation of the project.

Outputs of the project refer to the expected and intended results and experiences that a user will demonstrate while interacting with the project. This area contains the expectations of the institution and what they are hoping to achieve with the project being

[17] "BJA Center for Program Evaluation and Performance Measurement - Developing and Working with Program Logic Models," accessed April 13, 2015, https://www.bja.gov/evaluation/guide/pe4.htm.

developed. Outputs, however, is not a measure of the quality of the project but rather a description of what the project accomplished and what was used to produce these outcomes. Another way to consider outputs is that they describe what the institution has produced through the development of their project[18]. The efficacy of the project's implementation will be determined through the evaluation of these sections. As important as the goals labeled here may be for the institution, they are equally important to evaluators who now have a tangible benchmark with which to compare the results of the project.

Outcomes and impacts are two sections, which may be combined in some cases and left separate in others. For zoos s, these sections' separation may prove more beneficial in the planning process due to the general nature of these institutions' programs and exhibitions, conservation education. Outcomes define the immediate impact of the program or exhibition on the visitor after viewing. Impacts on the other hand attempts to define what long-term affects the viewing of the program or exhibition would have on the visitor. These sections, unlike those previously mentioned, are largely predictive. This is not to say that the information in these areas is falsified, but the true outcomes of a project will not be understood until visitors interact with the installation and provide feedback. Similarly, impacts cannot be measured before a visitor has experience with the exhibit or program, nor can they be measured, typically, before a visitor leaves the institution. The statements and information gathered in these sections during the development process are the basis for summative evaluation once the development has been completed.

[18] "Getting Started With Program Evaluation" (Georgia Council for the Arts, National Assembly of State Art Agencies, 2007).

VII. Evaluation in Practice

Using the logic model as an example of the project planning process, this portion of the paper will discuss the various evaluation opportunities available in each stage of the evaluation process. Some of the methods presented henceforth may appear rudimentary and obvious, but it important to remember that most evaluation procedures are conducted while a visitor is on-site, and largely unexpected by the visitor upon arrival. With these considerations in mind it is the goal of evaluators to study visitors with minimal interruptions into their zoo experience.

Before returning to our logic model, it is again important to remember that the creation of the logic model itself is the first stage in the evaluation process. Also, techniques and strategies presented may be applicable to multiple sections or between sections. Having a detailed model of how each element of the project interacts with each other is crucial to understanding how the project operates and what areas of development may be evaluated at which times. It would be unreasonable, as an evaluator, to evaluate how stakeholder funds were implemented at the conclusion of development and spending, when clear obligations may be attached to the funds in how they may be used.

Focusing solely on the input section of the logic model there are not many factors to evaluate, yet. During and before the input section the main roles of the evaluator focus around understanding the project. Reviews of literature, internal documents, and other relevant documents are crucial to understanding the information behind the project. Understanding the concepts that fuel the interpretation by staff allows the evaluator to

formulate their questions to reflect the information that visitors are exposed to beyond just what is presented in the exhibition or program. Reasons for doing this are quite simple, the evaluator needs to be able to differentiate between feedback that resulted due to exposure to the exhibit or program versus pre-visit knowledge. Other forms of evaluation in this area involve the stakeholders of the project. First and foremost, the evaluation staff and development staff should identify the potential stakeholders in the project and seek their input. Correspondence between the evaluator, or development staff, and stakeholders identifies what funders, visitors, staff and community partners can provide towards the project as well as what these various audiences would respond favorably to upon installation. The interactions can take place through various forms of communication, email, phone calls, interviews and even social media. The findings of these interactions may identify a central figure for a group of stakeholders through which they may communicate, particular accessibility issues facing a particular group, and what types of information stakeholders may expect to be presented with. Also in this section, evaluation staff should identify which stakeholders would benefit from the findings of the evaluations and which departments should receive reports.[19]

Before and during the development of the development model, staff should consider the main goals and objectives of the proposed project. From these main goals and objectives, the evaluator, along with staff, can synthesize the project proposal in to measurable objective that can be tracked and analyzed further on.[20] The key to understanding whether or not a project has accomplished what it was intended to relies on the collection and analysis of data. To understand what types of data are required to

[19] Westat et al., "The 2002 User-Friendly Handbook for Project Evaluation." 24-26.
[20] Westat et al., "The 2010 User-Friendly Handbook for Project Evaluation." 27.

validate a project, the synthesized goals and objectives must be formed in to a construct, or a measurable concept.[21] This process requires deconstructing the main goals and objectives and identifying the specific outcomes the project should translate to the audience. If the question of, "How can the institution understand whether or not these outcomes are occurring?" is stirring, the answer to this question is through the use of indicators. Evaluators, along with staff, consider the specific outcomes and identify which types of data, indicators, are required to prove that an outcome has occurred. Indicators also assist in identifying who, how, and what should be studied to collect the data. With these elements identified, evaluation questions can be developed to identify if the particular element caused an outcome. Take for example a zoo planning a redevelopment of a major exhibition, much like the Rocky Coasts exhibit at the Seneca Park Zoo. In this case, the zoo intends to run a marketing campaign to promote the exhibition opening with the intentions that circulating promotional material will attract "non-visitors," or visitors who under ordinary circumstances would not attend the zoo as part of their leisure spending. A construct of this plan would be "increasing non-visitor attendance", or possibly "effects of promotional material on attendance". Indicators of these constructs would be visitor responses identifying that the visitor is/has, a first time visitor, received promotional material about the exhibition, promotional material was the sole purpose for choosing to visit. Through the development of concise and simplified goals and objectives observable and measurable data can be identified and defined for all staff.

Moving to the activities section of the logic model, the institution begins producing materials and developing components of the exhibition or program. With the upswing in

[21] Rockman and et al, "Constructs & Indicators" (Rockman et al. & The EdVenture Group, 2006).

production, the role of evaluator takes on a seemingly managerial role. This is not to say that the evaluator assumes the role of project lead and dictates the progression of the project moving forward, rather the evaluator refers to the established plans, deadlines and budget of the project and documents their progress. Are scale models being produced on schedule? Are exhibit materials being completed for review as planned or are there delays or content issues? These issues may seem more relevant to the project manager, but are equally important to the evaluator in determining the progress of the project as well as documenting changes and progress for stakeholders.

Other responsibilities during this section revolve around the materials and design elements of the project and stakeholders, or audience, perceptions of them. By presenting preliminary materials, prototypes, scale models, sample didactic panels, to stake holders and planned audience members during the development phase, evaluators and staff can identify and possibly change elements of the project before installation. In order to do this the evaluator and staff should identify which materials should cause and impact and develop questions around these elements. The questions should not, however, guide the answering party towards an answer and should be as open ended as possible. Such as, "Which area of the display did you[the visitor] notice first?", "Second?". If a particular picture or text grouping was planned to be seen first, an indicator response would identify that element as the primary focal point on the display. Depending on the project, the methods for obtaining this information may vary but commonly rely on focus groups and individual interviews with stakeholders and audience members. With this information, the evaluation and development staff may make adjustments, improvements, or reallocations during the remainder of the development process.

Building upon this literature review, the thesis continues with Part 2 which considers the history of the Seneca Park Zoo before turning to the Internship Experience in Part 3. The appendix includes the survey instruments (blank) and the completed surveys obtained in June and July 2015.

VIII. Summative Evaluation

Similar to the activities section, the evaluator's role during the outputs section of logic model is largely to assess visitors' reaction and interaction with the project once it has been implemented. The differences between the activities section and post installation evaluation are the scope of the audience studied as well as the setting. No longer are focus groups interacting with individual elements of a project and conveying their preferences, now the evaluation team must evaluate how visitors are interacting with the project as a complete entity as well as their reactions. There are many possible tools for this type of evaluation, with the intention of being concise this section will focus on on-site visit evaluation practices, post-visit evaluation techniques will be discussed in further sections. To understand how visitors are interacting with a program or evaluation, there must be some interaction or observation between staff and visitors.

Firstly, it must be stated that when attempting to identify behavioral characteristics that occur as a result of exposure to an exhibit or program, a comparison between individuals or groups must be made. One group must be exposed to the exhibition or program as intended for general audiences, the other group, as similar in general composition as possible to the control group, should be exposed to the exhibition with a singular change. "The task is not only to show that the outcomes occurred, but to make the

case that the outcomes can be attributed to the intervention and not to some other factors."[22] In the case of Pattison's work at the OMSI, instructive kiosks were left on, or turned off and covered with a didactic panel which displayed the same information, depending on which group was being observed. These kiosks were identified as being a potential factor in determining level of interaction and visitor time spent engaging with the exhibition.[23]

Secondly, when conducting observational studies of visitor engagement and interaction it is important to maintain random sampling. The purpose of this is to ensure, attempt, to represent the majority of the viewing audience based on the actions of a selected few. Techniques for maintaining randomness during evaluation involve systematic random sample, in which a number of visitors (n) is selected, with little consequence on the actual number, and every n^{th} visitor is observed. This technique causes the evaluator to focus on a single visitor for the length of their interaction with the exhibition and then selecting the next n^{th} visitor who enters the defined exhibition space and observing their interaction.

With these two concepts in mind, the actions of evaluators vary depending on what questions are attempting to be answered. Some questions may rely on multiple data collection techniques, both qualitative and quantitative. In many cases observations may be required to understand how visitors are interacting with an exhibition. In order to accurately record the data, an observer must have a method of keeping time such as a watch or smart phone as well as a way to record the data, on paper or through recording, although recording visitors for the purpose of a study would require consent or simply

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[22] Westat et al., "The 2010 User-Friendly Handbook for Project Evaluation."
[23] Scott A. Pattison, Scott Ewing, and Angela K. Frey, "Testing the Impact of a Computer Guide on Visitor Learning Behaviors at an Interactive Exhibit," *Visitor Studies* 15, no. 2 (July 2012): 171–85, doi:10.1080/10645578.2012.715010.

prior notification depending on the uses of the recordings. Definitions of what constitutes an interaction, engagement or a stop at an exhibition must be determined before observation occurs. This is to ensure that, unless planned, a passing glance at a display case is not counted as an interaction with an exhibition. Also, a defined exhibition space should be determined, this is important in zoos due to their lay out which may have over lapping exhibition spaces depending on the display of animals. Having a defined exhibition space allows the evaluator to accurately determine who should be considered for observation. Similar to the observation of an individual are tracking or pathing observations. As documented by Bitgood et al., these observations track visitors' circulation around the institution and may be used to reposition signs and indicators to increase visitor attention to a particular area of the park.[24] These techniques are based in the concept that "time sets the precedent for and is indicative of many desirable outcomes."[25] This statement infers that there is a direct correlation between time spent engaging with material and amount of learning occurring.

Other forms of on-site evaluation can occur through the use of surveys distributed to visitors prior to, or after engaging with the exhibition or program. If a change in behavior is being studied, surveys conducted both before and after exposure may be required in gain the data necessary for evaluation. Even if this is not the case, survey design should remain relatively constant. On-site evaluations should be conducted in a way that will limit potential institutional bias while remaining sensitive to the visitor's time constraints. To achieve this, survey questions should remain concise yet still seek a clear objective.

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[24] Stephen Bitgood et al., "Influencing Visitor Attention: The Effects of Life-Size Animal Sihoettes on Visitor Behavior," *Visitor Studies: Theory, Research & Practice* 3 (January 1, 1990): 221–30.
[25] Beverly Serrell, "In Search of Generalizability: New Tools for Visitor Studies," *The Journal of Museum Education* 21, no. 3 (October 1, 1996): 11–18.

Answers to these questions could be open ended or based on a Likert Scale, a scale which assigns a numerical value to preferences.[26] Unlike Likert-style responses, which are already presented in a numerical value, open-ended responses should be interpreted in terms of a numerical value in order to allow for comparisons. To achieve this the responses must be coded; which involves assigning a numerical value to each response based on keywords, or perceived understanding of the exhibition or program based on the usage of project specific language. With the responses now coded, the evaluation staff can begin to interpret and track changes in the data.

These methods provide the basis of summative evaluations. As before, the outputs section and impacts section will be combined as many of their techniques over lap and may be used to gather similar information. The data gathered during these stages attempts to prove that the affects that zoo or aquarium staff identified as objectives and goals during the development process actually occurred. As discussed by Falk, a visitor may not fully understand the impact of their experience until long after they have left the physical ground of the institution.[27] In order to accomplish this the institution must have a method of contacting visitors after their experience, this can be obtained by prompting visitors to voluntarily provide contact information on a previous survey or at the entrance with the explanation that the data may be used for research purposes. Techniques for obtaining this type of data relies again largely on the distribution of surveys. Either in paper form, or electronic, surveys allow for detailed open-ended response of questions as well as the opportunity for additional quantitative data, such as demographics. Again, the questions

[26] "Likert Scaling," accessed April 16, 2015, http://www.socialresearchmethods.net/kb/scallik.php.
[27] John H. Falk, "The Visitor," in *Identity and the Museum Visitor Experience* (Walnut Creek, California: Left Coast Press, Inc, 2009), 67–89.

should be designed to limit institutional bias and focus on a singular topic. A sample of these types of questions may include, "Were there any parts of the exhibition or program that appeared to have a targeted message?" This type of question acknowledges that the institution attempted to convey a particular message through the use of specific elements and asks the visitor to respond with which elements, indicators, of the exhibition, in their opinion, had a purpose other than visitor entertainment. Similar to surveys, interviews with visitors after their visit can provide a more detailed account of the impacts of the zoo experience. With interviews, similarly to surveys, questions should be open ended to allow for elaboration, but there should be even greater refinement of the questions to best eliminate institutional as well as interviewer bias.

Building upon this literature review, the thesis continues with Part 2 which considers the history of the Seneca Park Zoo before turning to the Internship Experience in Part 3. The appendix includes the survey instruments (blank) and the completed surveys obtained in June and July 2015.

Part 2. Case Study: Seneca Park Zoo

IX. Seneca Park

The history of Seneca Park Zoo stretches back over 100 years to 1888 when lands were purchased for the original Seneca Park. Over the next five years, the F.L & J.C Olmstead Firm, led by Frederick Law and John Charles Olmstead, designed the architecture for the park, which opened to the public in 1893. A year later the Seneca Park began to display captive animals, mostly local fauna including birds and deer. Around the turn of the twentieth century the park constructed permanent housing structures for one hundred and

fifty species in the lower park near Trout Pond. Three years later, in 1905, the park completed the construction of an aviary designed for the flight patterns of three hundred birds.

The first major zoological addition to the park accompanied the construction of the Main Zoo Building. This was the first building in the Northern portion of the park and allowed for the menagerie style display of exotic animals.[28] In addition to many other exotic species, this building became the home Jimmy the Chimp, who at the time of his death 1985, was the oldest chimpanzee held in captivity. By 1937, the structure of Seneca Zoo, as we know it, began to take shape, and the housing of animals became more centralized and located away from the lower park, which the zoo currently does not use. The construction of this Main Zoo Building, located on a natural ridge above the lower park, began the zoo's transition from exhibiting in lower Seneca Park around Trout Pond to their current locale.

X. Seneca Park Zoological Society

It was not until 1957 that the State of New York recognized and chartered the Seneca Park Zoological Society as an educational institution that warranted support from the state. Since that time, the Seneca Park Zoo has developed into a fully functioning and accredited not-for-profit organization. As part of the community, the development of the zoo's collection and grounds relied heavily on support from local patrons and businesses. To exemplify this support, the acquisition of two polar bears in 1975 was led primarily by

[28] "Seneca Park Zoo - The Beginning," accessed April 9, 2015, http://senecaparkzoo.org/page/beginning.

charitable efforts of local school children.[29] Again in 1986, the zoo partnered with locally based Wegmans Food Markets to create the ZooMobile program that brings educational opportunities to area schools to this day.

With the acceptance of the Seneca Park master plan by Monroe County in 1991, the zoo and county entered a period of unprecedented growth and innovation for the zoo. In 1993, with assistance from the county, Seneca Park introduced its first landscape immersion exhibition, Genesee Valley Trail, and the Discovery Center. This partnership continued in 1997 when Monroe County provided $7.75 million to aid in the redevelopment of artic marine habitats, named the Rocky Coasts Exhibit.

Part 3. Case Study: Internship Studies

XI. Internship

Beginning in Spring 2014, I was in contact with the Seneca Park Zoo about potentially collaborating with the institution in developing some form of evaluation tools for the zoo's various programs and exhibition spaces. During the period of January 2014 to February 2015, numerous emails and meetings were exchanged between myself and zoo staff including Kenneth Nelson, Interpreter, Bart Roselli, Director of Education and Interpretation, and Emily Coon-Frisch, Manager of Program Development, about the possible directions my thesis could go. Initially plans were that this paper as well as the internship would result in the development of both an exhibition tool-kit as well as a program evaluation tool-kit. Due to the primary focus of the internship revolving around exhibition evaluation, my exposure to zoo programs was limited to one ZooMobile program

[29] "Parks Zoo Landing Page," accessed March 30, 2015, http://www2.monroecounty.gov/parks-zoo.php.

and four days assisting with school camp programs. For this reason, the program evaluation tool-kits will primarily include the observed similarities in planning between the two.

XII. Survey Parameters: Research Question

During my time working with the Seneca Park Zoo, I developed a survey targeted at understanding non-visitor motivations in regards to their lack of attendance to the zoo. This survey looked at several factors including demographics, socioeconomic status, as well as primary mode of transportation in attempts to identify any correlations between these factors and a visitor's attendance. The development of this survey largely drew on the work of Marilyn Hood, which has been described on page 7. Furthermore, questions were included that asked the subject to self-identify any accessibility needs they may require. This type of question was deemed particularly important due to the rising levels of Americans with disabilities. According to the United States Census in 2000, 49.7 million Americans reported some form of disability. This number rose in 2010 to a reported 56.67 million Americans. [30] Continuing with the survey, questions continued towards identifying the subject's motivations for leisure spending and the types of activities they consider when doing so. With these questions answered, the survey turned to the subject's perceptions of zoo's in general. For some subjects, there is the potential that a negative experience with animals or a previous zoo has in some way affected their desire to visit a

[30] US Census Bureau Public Information Office, "Nearly 1 in 5 People Have a Disability in the U.S., Census Bureau Reports - Miscellaneous - Newsroom - U.S. Census Bureau," accessed August 12, 2015, https://www.census.gov/newsroom/releases/archives/miscellaneous/cb12-134.html; Judith Waldrop and Sharon M. Stern, *Disability Status, 2000*, vol. 3 (US Department of Commerce, Economics and Statistics Administration, US Census Bureau, 2003), http://www.wba.aplusanywhere.com/R85Content/media/pictures/sociology/documents/unit_06/c2kbr-17.pdf.

zoo. Finally, subjects are asked about the types of services and roles a zoo plays in the community and the types of services and programs the subject would ideally appreciate an institution to provide.

As part of this survey, local institutions and groups, which deal with adult education and community engagement, were identified as possible areas to solicit subjects for the survey. These groups included media centers such as WXXI as well as school districts like Monroe County. Also, other cultural institutions such as the Memorial Art Gallery and George Eastman House were identified for their periodic existing collaborations with the zoo and their adult informal education programs.

Although this survey was developed, the survey has yet to be implemented in a study for the institution and therefore the data is not available. Had this survey been implemented, a small sample of subjects would have been tested with the survey and, based on reactions and responses from subjects, the survey would be evaluated for it efficacy before complete testing occurred. By evaluated for efficacy I mean, based on subject responses towards certain problematic questions such as income bracket and level of education, these questions or their offered range of potential answers may require changing.

With the non-visitor profiles survey completed, my internship duties transitioned to developing an exhibition observation study for the interactive elements within the A Step into Africa exhibition. The focus of this study was to attempt to understand the extent to which visitors interacted with and engaged the interactive panels, cases, and casts throughout the exhibition area. This included eight individual panels as well as 2 additional panels in the baboon hut which were combined due to their low frequency of use as well as

their close proximity to each other, these panels were located on opposite sides of the baboon enclosure's viewing glass.

In order to begin the study we, Mr. Roselli, Ms. Frisch and I, were tasked with identifying a research goal. In this case, the zoo wanted to understand "How are visitors using our interactive elements?" With this question in mind we identified a target exhibition for study, in this case the Step into Africa exhibition area. From there, Ms. Frisch and myself, along with Mr. Roselli, compiled a list of potential interactive elements for study which was then narrowed down to the nine elements previously mentioned based on institutional preference. Upon selecting the target interactives for study, we met and discussed the possible methods for study. After deliberation it was determined that a combination of observations and surveys given on-site, could be reasonably completed within the time frame and limited personnel devoted to the task.

XIII. Survey Parameters: Observed Interactions

After selecting the interactives for study and deciding which methods would be used for collecting data, it was time to begin designing the study. Because the research question used to develop this study looked at visitor use of the interactions it was important that, during the development process, the evaluation staff made no attempt to draw conclusions about learning from the study. For this reason, the study focused primarily on the observed interactions between visitors and the interactive panels. While the survey asked the question, "What did you **[the visitor]** learn from using this interactive?" the intent was to determine whether or not the visitor believed there was an educational component

associated with the interactive. This was a significant query for the institution because the many of the interactive elements were designed to provide some educational purpose—whether that be learning to observe differences in specific baboons as in the case of the Baboon Identification Panel, or communicating the scientific belief that elephants communicate through vibrations in the ground absorbed through the pads in their feet as in the case of the Elephant Listening Tube.

In order to answer the question of how visitors use the interactives, it was first determined that the evaluators assigned to the study, understood the interactives from both a visitor perspective as well as the institution's perspective. In order to accomplish this, I, along with Ms. Frisch developed a list of the intended uses for each interactive. To do this, I spent roughly two hours attempting to engage with each interactive from the point of view of a first time visitor. During this time, Ms. Frisch aided in gathering the planned purpose for each interactive from institutional records. With the information on intended uses, along with observations done during my time engaging with the interactives, the evaluation staff developed an engagement rubric. This rubric attempted to use a Likert-style scale to gauge visitor engagement on a scale of one to seven (1 – 7), with a value of one representing no engagement with the interactive and a value of seven representing a highly engaged facilitator[31] style engagement with the interactive element. A facilitator type engagement was selected as the highest level of engagement due to the numerous camp groups and families observed visiting the zoo, as well as the belief that being able to disseminate information to a group after limited exposure with an interactive element

[31] Falk, John H. 2009. *Identity and the Museum Visitor Experience*. Walnut Creek, Calif: Left Coast Press.

showed a high level of understanding. This belief was influenced by Falk's work on the facilitator visitor identity described earlier in this document.

Related, an observation sheet was created and intended for use in gathering observations. I quickly realized the limitations of the observation sheet while conducting observations and relied instead on recording observations in a composition book. The observation sheet was developed using the engagement rubric which already factored in time of engagement as a criteria for level of engagement. This was problematic because each visitor is an individual and may not require the same amount of time to engage with an interactive as someone else. With this realized, time of engagement as well as any engagement actions were recorded in lieu of the level of engagement as prescribed in the rubric. Another limitation of the observation sheets were the number of sheets required to complete observations each day. Copying dozens of sheets each morning was not only time consuming but costly and environmentally damaging, and thus discontinued after only three days. Left over sheets were distributed to ZooTeens to conduct observations on while assisting with the study.

In addition to observations, surveys were a component of this study. Surveys were designed to identify visitors' member status and their group demographics. Information was also gathered about psychographic factors that may have contributed to the visitor's engagement with the interactive. This information included: reason for visiting the interactive area, reason for visiting the enclosure associated with the interactive, perceived educational benefit, satisfaction, and the opinion about the Zoo's intention for installing the interactive.

Finally, a schedule was designed to observe each interactive element. In order to collect reliable data on visitor usage during a shortened time frame, I created the schedule with the intention of observing each interactive element during each hour of the day while the main gates were open for entry for one full weekday as well as one hour of weekend activity. This meant observations needed to be conducted from 9:30 A.M – 4:00 P.M. This resulted in 7.5 hours of observation in total for each interactive area over the course of the study.

XIV. Data Gathering

By observing each interactive area for a full day while gates were open, I was able to create a composite of a full day's use of each interactive. When this data is paired with the total attendance numbers from each day of the study, it provides a strong indicator of how many visitors could be expected to use the interactives. (Assuming that each visitor who enters the gates proceeds through the entire zoo. This, however, is not always true for each visitor and therefore introduces error in to the percentages.) The combination of an institution-wide tracking survey with this study would reduce the amount of error.

XV. Summative Evaluation of the Study

In terms of the evaluation procedure of this study, the evaluations were largely summative. The reason for this is that the exhibit was already developed and in place for several years upon my arrival to the institution. However, there were formative evaluations conducted while planning and developing the survey and engagement rubric.

These tools were designed and then tested prior to their implementation and revisions were made based on the tools efficacy during the test observations.

Throughout the course of this study there were several complications discovered while implementing the observation sheets and engagement rubric. Firstly, I incorrectly assumed while creating the engagement rubric that the rubric would remain unchanged throughout the study. This was not the case. Upon observing full groups for a short period of time it was evident that I had not taken play into account when creating the rubric. Children have a talent of turning almost any object into an object of play. Although the children may be playing to a degree, the children are also engaging with element and potentially learning in doing so. With this in mind I needed to revisit the engagement rubric towards the end of the study and make adapt it to reflect the types of engagements observed rather that my own personal engagements. Additionally the observation sheets I created during planning only held a section for level of engagement rather than including engagement time as well. This was due to my previous assumption that the engagement rubric would remain unchanged during the study, which was not the case. Therefore, observations we recorded in a composition book to more freely record all the observations of the group, rather than just those I had created spaces for on the observation sheets.

The observations sheets were useful during the study, however, as a teaching tool with the ZooTeens and Mike Wagner. During the study I was made available the assistance of the ZooTeens program and fellow intern Mike Wagner. While working with the ZooTeens, the program participants would work with me for a half hour during their scheduled one hour shift at a table within Africa. During this half hour I used the observation sheets to quickly summarize the purpose of the study and how to record

observations. At this time I had already realized the limitations of the observation sheets and had the ZooTeens write time of engagement rather than level of engagement on their sheets. After about four days of working this way the extra help became more of a distraction instead of the assistance it was intended to be. Due to the large number of ZooTeens in the program as well as the rotating schedules it was highly unlikely that I worked with the same ZooTeen more than once or twice. This meant explaining the study and observation techniques repeatedly. I believe that an informal training session with a large group of ZooTeens would have been highly beneficial to streamlining this process but was a possibility during the time of the study due to the ZooTeens program beginning during the second week of observations. This belief was affirmed while working with Mike. Due to his similar schedule we were able to sit down for roughly a half hour to an hour and I was able to explain everything fully and answer any questions Mike had in a setting where I was not trying to explain the study at the same time as observing. Mike adapted to conducting observations quickly and was incredibly reliable in his observations. To the point where during times when make up observations were being conducted I had no reservations about dividing duties. I was able to conduct surveys throughout Africa while Mike recorded observations at an area for half an hour and then we could switch. This came in particular help when supervisor meetings were occurring and cut into observations by twenty minutes or so.

The structure of the study also lent to the ease of introducing multiple observers. Originally I thought I would be the only observer for the majority, if not the entirety of the study. As such, I developed the schedule and tools to be conducted by a single individual. This provided scalability to the program. But when multiple observers were introduced to

the study, the areas once covered by an individual on one side of the exhibition space could now be covered from multiple angles and increase the odds of observing all visitor activities.

XVI. Implications

With this study completed I believe there is now a basis from which I may draw conclusions on the efficacy and potential for further study. During the course of observations and summative evaluations there were components of the study and scheduling that required changes based on visitor behaviors and unforeseen circumstances. During the planning stages it was assumed that three weeks of constant observations would be satisfactory to complete the study. This, however, was not entirely the case. There were some days during the study when fewer than one thousand visitor arrived throughout the course of the day which lead to very sporadic observations and low data values. It was my belief that these days did not represent an accurate portrayal of a day's use of the interactive and so observations for these days were repeated when attendance was higher. This meant that the study extended in to the weeks that were originally designated for data analysis. This being stated, I would highly suggest that, during the planning stages for further studies, an attendance number be selected, based on average attendance. With an attendance number selected the evaluators can compare daily attendance statistics and observations to determine whether or not a particular day's observations truly represent an average day's attendance.

By actually conducting the study, I found complications with the scheduling in terms of conducting observations and surveys at the same time. Due to the fact that during the

majority of the study there was only one observer, conducting surveys while attempting to do observations was simply not an easy task. Visitors tend to move away from an enclosure after they have interacted with the panels and viewed the animals. As such, the observer would typically have to follow the visitors to the next enclosure in order to conduct a survey and be required to move from the observation area. This meant that during the survey time several observations could be missed if there were a high number of visitors. Towards the end of the study the surveys were separated and conducted outside of the area's observation time. This meant two things occurred. Due to the declining amount of time, the interviewee could visit multiple areas during an hour and conduct surveys at different areas depending on their use. Also, the third and fifth engagement requirement, described on the survey, were suspended. This was accepted because the interviewer was moving around the entirety of the Africa exhibit and therefore was maintaining the randomness that would have been granted with the engagement requirements.

A suggestion for further study that arose during the course of this study involved the relocation of one of the guide panels near the elephant watering hole. During the study it was observed that many visitors interacted with the tracks panel while seemingly unaware of the connection between the panel and the imprints of tracks in the cement at their feet. Additionally, visitors seemed to look around the guide panel located on the right side of the area in attempts to see the elephants in the back of their enclosure near the woods. The guide panel in question was intended to bridge that disconnect and encourage visitors to use the track panel and then, using what they had learned with the panel, attempt to identify the imprints on the ground. It should be noted that to the left of the panel was a berm on which children would climb and potentially be able to fall behind the

first set of fences designed to keep visitors out of the enclosure. My suggestion for a follow-up study would involve moving the guide panel from the right side of the viewing area on to the berm. The belief behind this is that with the guide on the berm, children would be less likely to climb on the berm and that the guide panel would better encourage visitors to make the connection between the panel and the track imprints on the ground. The images for this area are located in Appendix H.

Overall, I believe the study was a success. Based on the initial research question of "How are visitors using our interactive elements?", the study identified typical visitor interactions with each element as well as the visitor's length of stay. This data is presented further in the appendix of this document.

Part 4. Toolkit

XVII. Conclusion

Throughout my research and case study I have realized how evaluation can shed light on the known issues of an institution as well as expose issues that may not have been recognized by the staff. Although the entire study was not developed around the logic model, the logic model's sections influenced large portions. In particular, the input section was essential to understanding the exhibition area and developing the intended uses of each interactive. Internal documents, which were created during the development of the interactives, provided an insight into the intentions of the staff when developing each interactive. This also helped in understanding what possible outcomes may have been expected at their inception.

The instruments used and the data collected during this study are included in the Appendix of this thesis. The two instruments are the: Survey for A Step into Africa Interactives and the Observation Sheet used in the study. Also included is the intended uses sheet. In addition, the final version of the rubric that was used to evaluate the observation is included. Finally, scans of all surveys 28 surveys conducted and 45 pages of observations recorded over the duration of the study. In addition, the demographic study is included, even though this was not utilized during the exhibit evaluation.

First and foremost, the design of this study and its administration may be repeated with any exhibit in the Seneca Park Zoo.. To that end, the *Step into Africa Interactives Study* may serve as the basis of a visitor studies tool kit. That is to suggest that this study could be replicated by: determining the intended uses for each interactive, observing visitors at each interactive, and evaluating visitors' behaviors based upon correlation to a rubric keyed to each interactive. These three elements were used in this study at the Seneca Park Zoo and could be developed specifically for any other exhibit in the zoo, or another zoo entirely. Of course, with the introduction of a different research question, alterations would be required to each tool to specifically address the research question at hand.

Appendix A

Observation Sheet

A Step Into Africa Sample Observation Sheet

Interactive Area: _____
Observer: _____
Date/Time of Observation: _____

# of Group Members: _____
Adults: _____ Age: 20-29 30-39 40-49 50-59 60-69 70-79 80+
Children:_____

Level of Engagement: _____

Engagement Actions Observed: _____
_____
_____

Group Interactions: _____
_____
_____

Type of Group: _____

Other Observations: _____
_____
_____

Weather Conditions: _____
_____

Crowd Conditions _____
_____

Appendix B

Survey

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place:

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? _____

Why did you visit this enclosure today? _____
_____

What made you use the interactive? _____
_____

Do you think this element enhanced your visit today? _____
_____

What did you learn from using this interactive? _____
_____

*What do you think is the purpose of this interactive?*_____
_____

Date: _____

Group Details: _____

Appendix C

Interactive Intended Uses

A Step Into Africa Interactive Intended Uses
Drew Johnson

Maasai Guides – Provide visitors with directional instructions and suggestions for engagement, which aim at improving visitor experiences within the zoo.

Maasai Video Hut – Visitors are intended to watch the different videos about common Maasai items. After watching, visitors may attempt to locate the objects within the area. Panel prompts encourage the visitor to link items to those the visitor might use at their home.

Big Cat/Little Cat Lion Paws – Casts of paw prints as well as skull remains of house cats and lions are compared. Along with didactic panels, the cases serve to illustrate the similarities and differences between the species.

Lion Leap – Didactic panel as well as measurements on the ground encourage visitors to test their leaping ability against that of a lion.

Dig Zone – Visitors are intended to use location panels to locate and excavate buried specimens. After locating a sample, visitors can use didactic panels and the field notebook to identify their specimen. Additional information about geologic time found on panels also helps visitors identify the time when the specimen would have lived.

Baboon Identification – Visitors are intended to use the flip panels to help identify certain baboon facial expressions.

Baboon Abacus – Visitors are intended to observe the baboon enclosure and keep track of specific behaviors that they observe.

Baboon Panel – Skeletal samples of different primates are displayed in attempts to show visitors the similarities between human samples and closely related primates. Evolutionary timeline also shows visitors where evolutionary distinctions between species occurred.

Watering Hole Elephant Tracks – Casts of animal and human tracks are displayed on the didactic panel by the elephant watering hole. Impressions of the tracks are also found in the cement around the area. Visitors are intended to use the didactic panels to identify the creatures that left the tracks in cement.

Elephant Listening – Visitors are intended to place one hand on the Tyvek cover inside the tube while another visitor makes a sound in to the open end of the tube. The vibrations felt on the cover mimic the effects of the pad on an elephant's foot.

Appendix D

Engagement Rubric

Levels of Engagement	No Stop 1	Minimal /Glance 2	Minimal /Stop 3	Intermediate Engagement 4	Intermediate /Activity 5	Extensive Engagement 6	Extensive /Facilitator 7
Maasai Guides	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Walking read of element.	Visibly stops and reads sign. Does not follow engagement prompt.	Visitor visibly stops and reads sign. Goes in to either baboon hut or uses watering hold interactive.	Visitor visibly stops and reads sign aloud. Visitor goes in to baboon hut or interacts with watering hole panel.	Visitor visibly stops and reads sign aloud. Visitors talk about panel and follow engagement prompt.
Maasai Video Hut	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Visitor stops at element for a short period of time, <30 s. Quick reading of panels, plays in area.	Quickly presses through video buttons, <10 s per video. Does not locate the objects.	Watches 1-2 videos fully, may locate objects.	Watches 3-4 videos and locates objects. References to household items or personal use.	Watches 3-4 videos fully and locates objects. Interprets information to other visitors in group, demonstrates understanding of connections to animals.
Big Cat/Little Cat Lion Paws	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly,	Visitor stops at element for a short period of time, <30 s. Quick reading of panels,	Briefly reads panels, <1 m. Observes skull and paw casts, < 30s. May touch	Appears to read majority of interpretive panel. Observes and compares casts and specimens.	Fully read both text panels. Observes and compares casts and specimens. References to other	Fully read both text panels. Observes and compares casts and specimens. Interprets information

		<5 s, or casually motion at panels.	may touch.		May touch.	species or related materials.	for others in group. Demonstrates understanding of specimen comparison.
Lion Leap	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Visitor stops at element for a short period of time, <30 s. Quick reading of panels, activity not attempted.	Does not read panel, completes activity anyway.	Reads panel and attempts activity. Appears casually engaged and participating for fun rather than understanding.	Reads panel and attempts activity. Appears engaged and participating for challenge. Understanding of purpose for jumping.	Reads panel and attempts activity. Appears engaged and interprets for group. Communicates purpose of activity.
Dig Zone	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Visitor stops in area, use the area for play, no engagement with elements in area.	Walks around edge of area. May briefly read panels or flip through field book, < 1m. May enter dig site briefly, <1m. Appears casually engaged, participating for fun. No identification of specimens found.	Reads panels briefly or flip through field book, < 1m. Enters dig site briefly, <1m. Appears casually engaged. Locates 1-3 specimens. Does not attempt to identify specimens.	Reads panels and field book at length, >2. Enters area and locates 3-5 specimens. Uses interpretive materials to identify specimens.	Reads panels and field book at length, >2. Enters area and locates 3-5 specimens. Communicates interpretive materials to help group identify specimens found. Communicates reasons for archeology or similar sciences.
Baboon Identification	Visitor does not stop at element. No attention	Visitor looks at element but does not	Visitor stops at element for a short period of	Briefly reads panel, <1m. May casually point at enclosure	Reads 1-2 identifications. Makes limited attempts to identify	Reads 2-4 identification panels. Appears engaged and	Reads 2-4 identification panels. Appears engaged and

	to interpretation materials.	stop. May pause briefly, <5 s, or casually motion at panels.	time, <30 s. Quick reading of panels, no interaction with element.	but no apparent positive identification. Does not make repeat attempts to identify.	individuals.	focused. Makes repeat attempts to identify individuals. Demonstrates basic observation and research actions.	focused. Communicates research ideas to members of group. Makes repeat efforts to identify individuals.
Baboon Abacus	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Briefly reads panel, <1m. May casually interact with element. Appears like play, no apparent observation activity by visitor.	Visitor stops at element for a short period of time, <30 s. Quick reading of panels, no interaction with element.	Briefly reads panel, <1m. Interacts with element. Displays limited engagement, correctly identifies 1-4 behaviors.	Reads panel, >1m. Appears engaged with element. Displays observation activities. Correctly identifies 5+ behaviors. Apparent understanding of research activity.	Reads panel, >1m. Appears engaged with element. Communicates research activities to group. Correctly identifies 5+ behaviors.
Baboon Panel	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Visitor stops at element for a short period of time, <30 s. Quick reading of panels, may touch.	Briefly reads panel, <1m. Observes skeletal cases. Appears casually engaged, no apparent understanding of relationship between samples. May touch.	Briefly reads panel, <1m. Observes skeletal cases. Appears casually engaged but focused. Apparent understanding of relationships. May touch.	Reads panel, >1m. Observes skeletal cases. Engaged and focused. Displays understanding of relationships.	Reads panel, >1m. Observes skeletal cases. Engaged and focused. Communicates understanding of relationships between species.
Watering Hole Elephant Tracks	Visitor does not stop at element. No attention to interpretation	Visitor looks at element but does not stop. May pause	Visitor stops at element for a short period of time, <30 s. Quick reading	Briefly reads panel, <1m. Appears casually engaged. No apparent use of flip boards,	Briefly reads panel, <1m. Appears casually engaged. May quickly use flip boards or	Reads panel, >1m. Appears engaged and focused. Interacts with flip boards and	Reads panel, >1m. Appears engaged and focused. Interacts with flip boards and

	materials.	briefly, <5 s, or casually motion at panels.	of panels, plays with element.	notice of ground tracks, interaction with casts.	touch casts. Attempts to locate impressions.	casts. Locates samples on ground.	casts. Locates samples on ground. Communicates panel to group.
Elephant Listening	Visitor does not stop at element. No attention to interpretation materials.	Visitor looks at element but does not stop. May pause briefly, <5 s, or casually motion at panels.	Visitor stops at element for a short period of time, <30 s. Quick reading of panels. May play or do activity incorrectly.	Briefly reads panel, <1m. Appears casually engaged. Does not read, completes activity correctly.	Briefly reads panel, <1m. Casually interacts with element. Does activity correctly.	Reads panel fully. Completes activity. Demonstrates understanding of element's connection to vibrations felt in elephant pad.	Reads panel fully and completes activity. Communicates understanding of element's connection to vibrations felt in elephant pad.

Appendix E

Non-Visitor Profiles Interview

Survey Questions:

What is your name?
How old are you?
Do you have any children?
What is your level of education?

For questions that may be sensitive to some people, the interview staff should agree on broad classifications as possible responses.

For instance:

a) No response.
b) High school or GED
c) College
d) Further Education: [**Advanced Degree's**]

How long have you lived in Rochester?
What is your income bracket?

May be a sensitive topic to some people, prepared possible responses for the subject could be useful.

What is your primary method of transportation?

This question may prove useful in determining whether or not certain amenities or services could be created for those with limited mobility of the area.

For example, subjects who may rely on sharing a single vehicle, walk or use public transportation.

Do you require any accessibility services?

The number of citizens in America with disabilities is increasing and so is the potential for limited access by patrons. Understanding the accessibility needs of the community is very useful information when considering programs, development and spacing.

What do you typically do in your free time?

Open ended questions such as this may be responded to at length. Interviewers should recognize when a subject begins to lose focus of the question and promptly shift focus back to the interview.

How do you decide your leisure spending?

Questions about how and why a subject chooses an activity may provide insight in to common services or traits of those activities that may be beneficial to the zoo.

How much would you say you usually spend on those activities per month?
What types of activities would you consider for that spending?
Would you consider an educational opportunity for that spending?
When do these activities generally occur?

Understanding when adults have free time may show why the subject may not have visited the zoo.

What types of services do you look for when deciding on an activity?

Have you ever visited a zoo?
What were your impressions?
Were you aware of the Seneca Park Zoo here in Rochester before our meeting?

Elaboration in to how the subject had heard of the institution can show what promotions are reaching this audience.

What were your impressions?
What types of services do you think a zoo, in general, provides?

Responses to this question should provide an understanding of this audience's perception of the role of zoos in society.

What types of services do you think a zoo should provide?
Are there any concerns you have regarding zoos?

Responses to this question may be the result zoo visits during periods when zoo's were not as established. This information may be a way to attract an older audience with similar experiences to show the improvement zoos have made in animal care and visitor services.

What types of services do you think a zoo should provide?
What types of programs do you think a zoo provides?
What kinds of programs would you be interested in exploring at a zoo?

Responses to this question may prove useful when attempting to develop programs or materials.

Appendix F

The scans of all 28 surveys conducted as well as the 45 pages of hand-written journal observations have been attached as a .pdf document.

Appendix G

Program Tool-kit

Due to my limited exposure to the programs of the Seneca Park Zoo, this section will remain brief. The similarities I personally observed between the development of programs and evaluations are as follows.

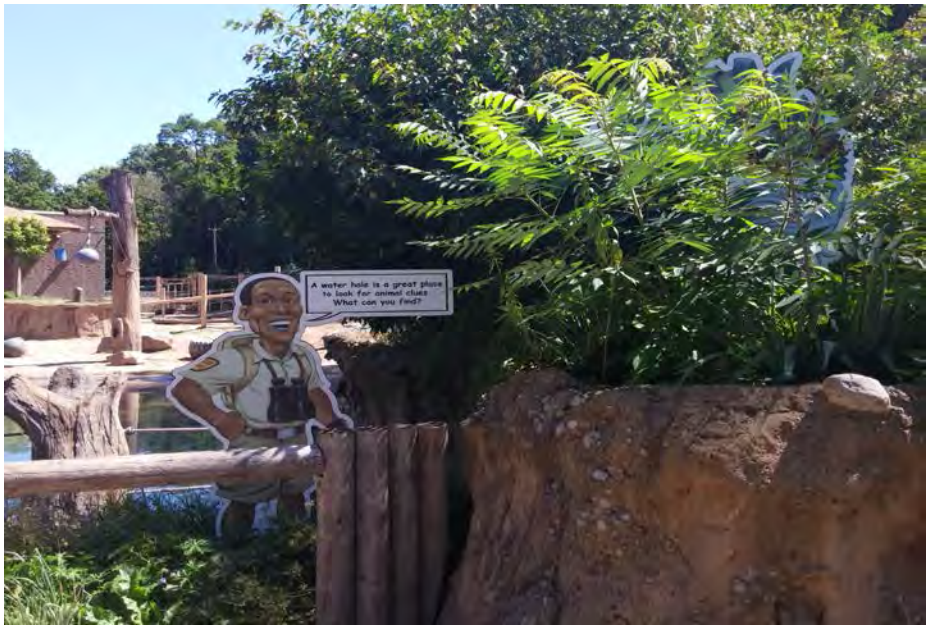
- During the planning stages it is vital to identify all stakeholders and potential inputs of knowledge, funding and staffing.
- Development of a logic model which identifies the inputs and their direct and indirect influences on the program as well as their conditions for involvement.
- Identify the expected outcomes a visitor may experience as a result of exposure to the program.
- Create or modify a tool to reflect that outcome.
    - The one program I sat in on was a camp lesson for school children aged 4-7. In this program children were taught a different lesson about animal adaptations each day of the week. Each student was also given a notebook in which they drew images of the animals they learned about that day. In order to determine whether or not the children were comprehending each lesson I would suggest a short questionnaire (designed for grade levels Kindergarten to First Grade) that would act as a quiz. At the end of each day or the end of the week, the instructor could go through the answers and record the information.

- Identify the institutional goals related to the particular program and track progress over multiple iterations of a repeat program.
- At the end of each program period conduct a review will the involved staff to discuss findings and brainstorm further improvements to the program. (Summative Evaluation)

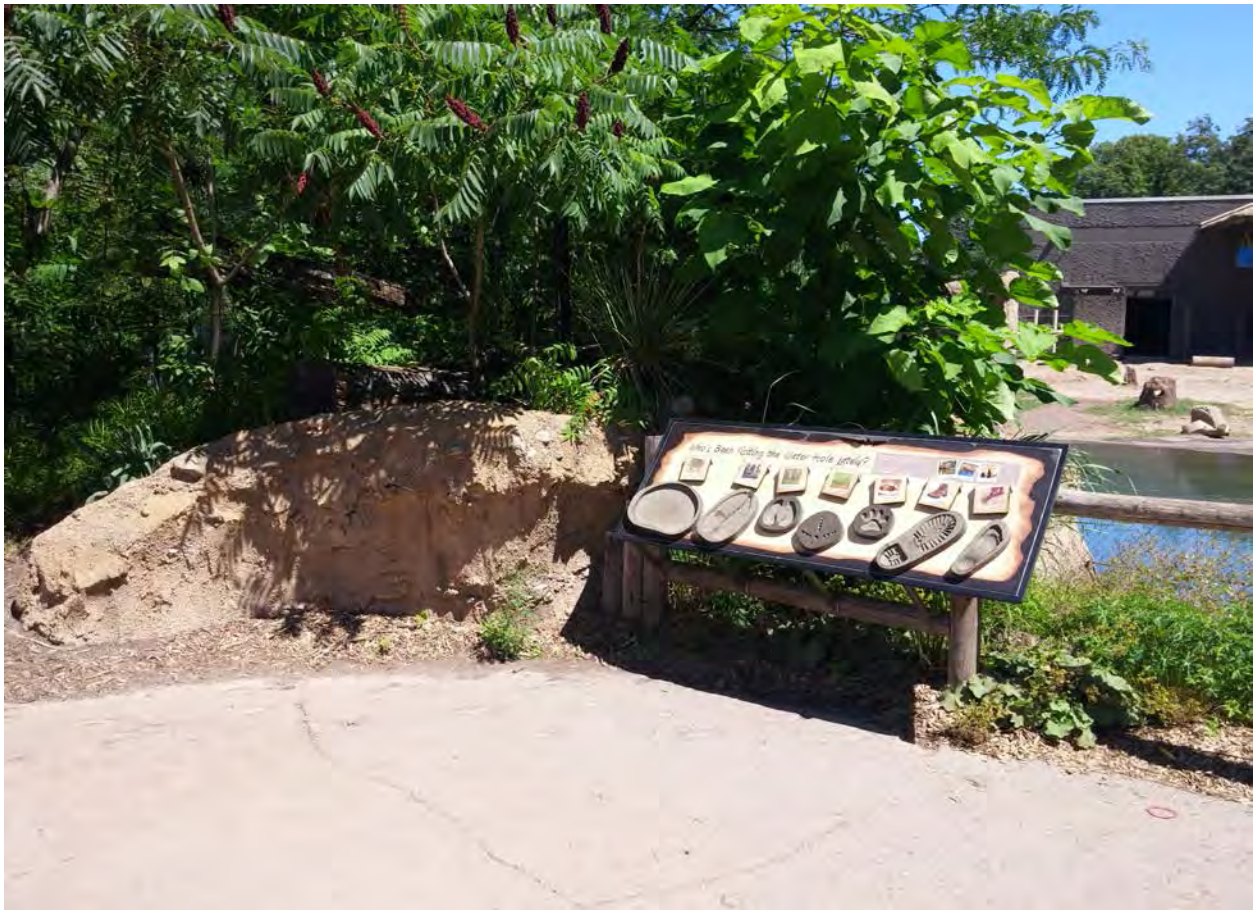
Appendix H

Photographs

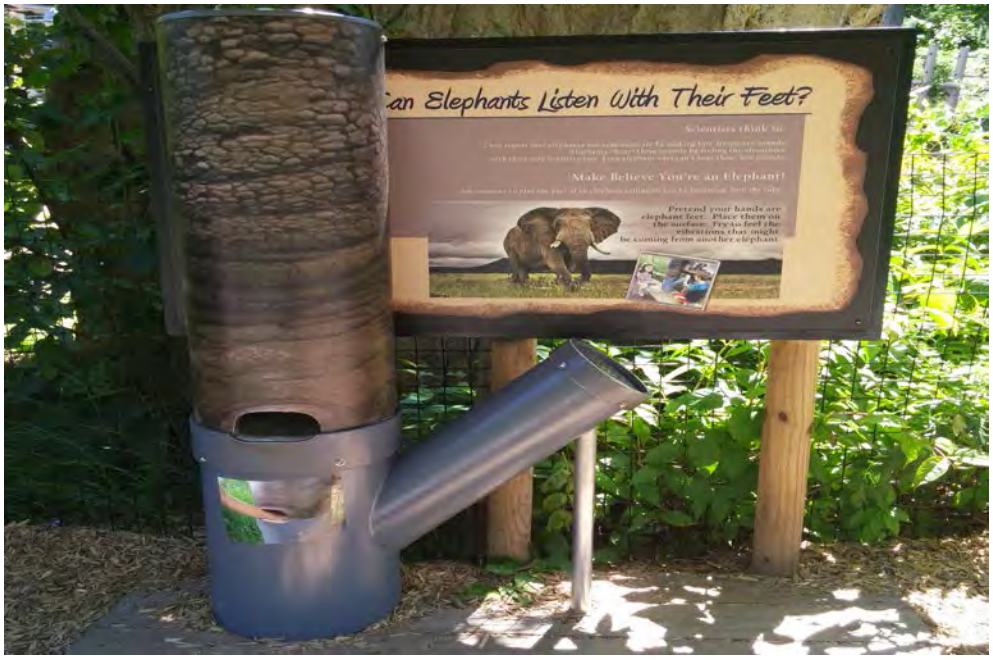
Baboon Guide Panel



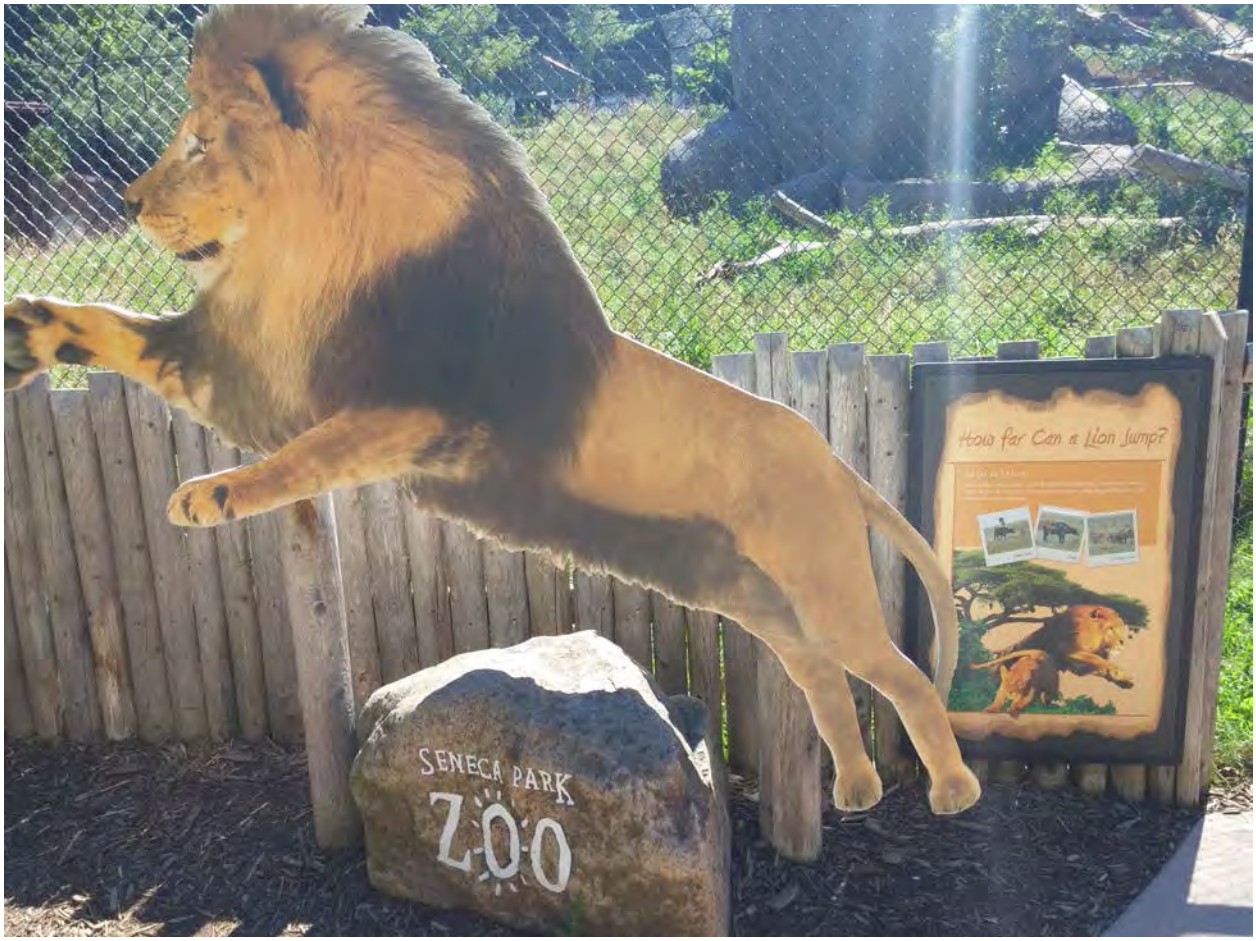
Elephant Watering Hole Guide Panel



Elephant Watering Hole Tracks Panel



Elephant Listening Tube



Lion Leap

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Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: EL

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 3 months ago

Why did you visit this enclosure today? To see the new elephants.

What made you use the interactive? My son plays with almost everything else he walks by

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Elephants have 4 feet kind of

What do you think is the purpose of this interactive? Teaching children about animals

Date: 7/24/15

Group Details: Woman, older daughter, younger daughter, younger son

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: EC

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Zoo birthday

Why did you visit this enclosure today? Child

What made you use the interactive? Curious to see, saw caption

Do you think this element enhanced your visit today? Yes Learned something

What did you learn from using this interactive? ~~Lion~~ That scientists think ele communicate w/ feet

What do you think is the purpose of this interactive? Education

Date: 7/11

Group Details: Parents + Small child

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: EL

Are you a member of the zoo? Member (Non-Member)

When was your last visit to the zoo? 2 months ago

Why did you visit this enclosure today? To see the elephants!

What made you use the interactive? The zoo teens told my son to come and feel the vibrations.

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? The elephants can hear with their feet, as the sign says.

What do you think is the purpose of this interactive? To Teach

Date: 7/22/15

Group Details: White aged women, son around 4-6 yrs old a baby in a stroller.

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: EST

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? It's my first visit

Why did you visit this enclosure today? Elephants are my daughters favorite animal.

What made you use the interactive? My daughter wanted to compare her feet to an elephants print.

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Elephants have small feet for how large they are.

What do you think is the purpose of this interactive? To show foot size difference btw animals.

Date: 7/24/15

Group Details: Middle Aged man + 10-11 y/o Daughters

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: EL

Are you a member of the zoo? Member ~~Non-Member~~

When was your last visit to the zoo? Never

Why did you visit this enclosure today? Child wanted

What made you use the interactive? Exploring

Do you think this element enhanced your visit today? Yes, great zoo

What did you learn from using this interactive? Elephants Earth can absorb vibrations and elephants can feel and sense when something is getting close

What do you think is the purpose of this interactive? Tangible way to teach visitors about elephant facts

Date: 7/24

Group Details:

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: ET

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 10 years

Why did you visit this enclosure today? Good day nice weather

What made you use the interactive? Curiosity

Do you think this element enhanced your visit today? Elephants Jaw

What did you learn from using this interactive? Elephants have bigger feet than I do

What do you think is the purpose of this interactive? Educational

Date: 7/3 12:24

Group Details:

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: ET

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 1978

Why did you visit this enclosure today? Wife wanted want to see elephants

What made you use the interactive? Parent, prompted them to look, child interested

Do you think this element enhanced your visit today? Yes yes got child away from electronics

What did you learn from using this interactive? Animal footsteps

What do you think is the purpose of this interactive? Education, recognize the different animal tracks

Date: 7/24

Group Details: family of 3 2a 1c

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: D7

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Last year

Why did you visit this enclosure today? Exploring, part of the trip, children like bus

What made you use the interactive? Children love the sand box, like to dig for things

Do you think this element enhanced your visit today? Yeah, kinda enjoy it

What did you learn from using this interactive? Supposed to dig for fossil

What do you think is the purpose of this interactive? Appreciation for looking for things and exploring different ways to do it

Date: 7/31

Group Details: parents 2 kids

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: DZ

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Years ago

Why did you visit this enclosure today? Grandson / Exploring

What made you use the interactive? Child ran over, saw other children using, tried attraction, shade

Do you think this element enhanced your visit today? yes, child enjoying learnt found fossils yet

What did you learn from using this interactive? learning to socialize didn't find any

What do you think is the purpose of this interactive? have kids explore fun things then come over and figure out what they've got

Date: 11:45

Group Details: Grandparents + child

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: D2

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Last June

Why did you visit ~~this enclosure~~ Africa today? See bears + the

What made you use the interactive? Kids wanted to

Do you think this element enhanced your visit today? Yes kids fun relax parents

What did you learn from using this interactive? Learned to dig (dinosaurs "I'm makes a volcano"

What do you think is the purpose of this interactive? Teach kids about the animals and their fossils

Date: 7/3

Group Details:

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: DZ

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? last year

Why did you visit this enclosure today? love animals ~~zoos~~ & actually the most affordable

What made you use the interactive? wanted to find fossils - kid response

Do you think this element enhanced your visit today? Yes nice break from animals and a new experience

What did you learn from using this interactive? to dig up and identify some of the fossils

What do you think is the purpose of this interactive? To show different jobs and how long animals have been around nice creativity area

Date: _____

Group Details: _____

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is DZ.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place:

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 7 weeks

Why did you visit this enclosure today? Child wanted to see dog

What made you use the interactive? Favorite part

Do you think this element enhanced your visit today? Yes, it's child's favorite area

What did you learn from using this interactive? Supposed to learn about dog and animal parts

What do you think is the purpose of this interactive? Give the kids another area to explore and relax

Date: 7/11

Group Details: Father and young children

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: DZ

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 10 years

Why did you visit this enclosure today? Learn

What made you use the interactive? Reminded of beach - children

Do you think this element enhanced your visit today? Yes

What ~~did you~~ do you think kids are supposed to learn from using this interactive? kids - maybe learn sharing

What do you think is the purpose of this interactive? Give kids an activity some times they get bored just looking

Date: 7/3

Group Details: _____

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: MV

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 1 month

Why did you visit this enclosure today? Just wanted to see

What made you use the interactive? Walking through got my attn Who loves here

Do you think this element enhanced your visit today? Neutral

What did you learn from using this interactive? I'm better at than Maasai, can't ~~footwork~~ learned about flyswatter

What do you think is the purpose of this interactive? To teach visitors about another culture

Date: 7 31

Group Details: Grandparents + 2c

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: MV

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Last year

Why did you visit this enclosure today? Eating, looked interesting

What made you use the interactive?

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Low poop bar in the walls

What do you think is the purpose of this interactive? Not entirely sure

Date: _____

Group Details: Family

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: BA

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? never

Why did you visit this enclosure today? just exploring

What made you use the interactive? curiosity

Do you think this element enhanced your visit today? yes it was fun

What did you learn from using this interactive? Gives a small perspective of baboon habits

What do you think is the purpose of this interactive? To help people understand these monkeys

Date: 7/13/15

Group Details:

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: LP

Are you a member of the zoo? (Member) Non-Member

When was your last visit to the zoo? Last month

Why did you visit this enclosure today? To find the lions

What made you use the interactive? I wanted to see if our fat housecat really is as big as a lion.

Do you think this element enhanced your visit today? Yes, I guess.

What did you learn from using this interactive? That a lion is much, much bigger.

What do you think is the purpose of this interactive? To teach

Date: 7/21/15

Group Details: A husband/wife, little boy + girl

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: IT

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Year

Why did you visit this enclosure today? Making rounds

What made you use the interactive? Wayne

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Horns cats and lions are very similar

What do you think is the purpose of this interactive? Give people something they can relate to

Date: 7/11

Group Details: Parent + Stroller

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: LP

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 1 yr

Why did you visit this enclosure today? observation

What made you use the interactive? Comparation

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Similarity at Cats

What do you think is the purpose of this interactive? further knowledge

Date: 7-10-15

Group Details: Solo

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: UP

Are you a member of the zoo? (Member) Non-Member

When was your last visit to the zoo? two weeks ago

Why did you visit this enclosure today? To see the lion up close

What made you use the interactive? To compare our hands to a lions and the skull looked interesting

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? That a lion is really really long.

What do you think is the purpose of this interactive? To teach people about lions

Date: 7/24/15

Group Details: Older women w/ granddaughters

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: Lion Leap

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Last week

Why did you visit this enclosure today? My son wanted to see the lions

What made you use the interactive? My sons favorite animal is the lion, and anything about lions he wants to do.

Do you think this element enhanced your visit today? Yes.

What did you learn from using this interactive? How far a lion can jump.

What do you think is the purpose of this interactive? To teach kids like my son about the zoo's animals.

Date: 7/22/15

Group Details: A young mother and her son, son may be 6 years old and the mother was in her high 20s - low 30s

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: Lion Leap

Are you a member of the zoo? Member (Non-Member)

When was your last visit to the zoo? 5y

Why did you visit this enclosure today? Day at the zoo, just walking through the exhibits

What made you use the interactive? Saw the sign, jump 35 feet but only marked 25 feet, thought it was interesting.

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? How far a lion can jump.

What do you think is the purpose of this interactive? To teach dumbasses like me how far a lion can jump.

Date: 7/17/15

Group Details: Set of grandparents, 40s-50s y/o mother, young daughter

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: L2

Are you a member of the zoo? Member (Non-Member)

When was your last visit to the zoo? years ago

Why did you visit this enclosure today? Walking by, and to see the lions

What made you use the interactive? My son said "I bet I can jump 10 feet"

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? That my son cannot jump 10 feet.

What do you think is the purpose of this interactive? To show how far lions can jump

Date: 7/22/15

Group Details: Middle Aged women, 2 younger kids, and 2 10-12 y/o, one was a son and one looked like a friend.

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: LL

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Never

Why did you visit this enclosure today? Exploring the zoo

What made you use the interactive? The cut out got my attention

Do you think this element enhanced your visit today? yes, very much

What did you learn from using this interactive? How far away you need to stand from a lion!

What do you think is the purpose of this interactive? To help kids learn about and admire the natural fauna of our planet

Date: 7/6/15

Group Details: 1 adult

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: BP

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 6+ yrs

Why did you visit this enclosure today? Child wanted to see it

What made you use the interactive? Child ran over so we talked about it

Do you think this element enhanced your visit today? yes

What did you learn from using this interactive? interesting to see the similarities between the bones

What do you think is the purpose of this interactive? Maybe to show how things have been passed down

Date: 6-30

Group Details: family Grandparents + Child

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: BP

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? ~1 month

Why did you visit this enclosure today? bring child

What made you use the interactive? show differences in hands

Do you think this element enhanced your visit today? very much so

What did you learn from using this interactive? Oh just that the hands are similar

What do you think is the purpose of this interactive? to show that all animals are similar, kind of

Date: _____

Group Details: _____

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: BP

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? 2 weeks ago

Why did you visit this enclosure today? Walking by on our way to the elephants.

What made you use the interactive? I have never noticed that it was here before.

Do you think this element enhanced your visit today? Kind of, but it should be more noticable.

What did you learn from using this interactive? Size difference b/w humans and apes.

What do you think is the purpose of this interactive? To show that difference.

Date: 7/24/15

Group Details: Middle Aged Lady + 2 Daughters.

Survey for A Step Into Africa Interactives: Select one adult from every third (3) group if area is not busy, select one adult from every fifth (5) group if the area under observation is busy.

Introduce self and ask consent for participation in the study.

Hello my name is _____.
I am working with the zoo on a study about the use of our interactives, would you mind answering a couple questions about your visit today?

Area at which survey took place: Baboon ID

Are you a member of the zoo? Member Non-Member

When was your last visit to the zoo? Last years sometime

Why did you visit this enclosure today? To see the baboons

What made you use the interactive? So I could pick out which monkey is which.

Do you think this element enhanced your visit today? Yes

What did you learn from using this interactive? Which monkey is which

What do you think is the purpose of this interactive? To help ID the monkeys

Date: 7/17/15

Group Details: One male, one female, and one child. Very short/blunt with their answers.

Interactive Engagement 6-29

5:30 - 9:55 - Grizzle panels Baboon + WH
No visitors
Baboons were fighting
Heavy rain over the weekend / Still overcast
Not many members in early

10:05 - 10:55 - Maasai Video
Videos currently not working. Screen off
6-29 10:40 AM
4 members - Grandparents - 2 - 70-79
Children 2
Engagement 4
~~Rating~~ Overcast
No interactions / gestures

6-29 10:48
Family 2 parents 40-50
1 child
Engagement 4

6-29 11:05 - 11:55
On Sheets

R:
Ripped Pants
Reschedule afternoon

CLASS SCH
Time:
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

WEB

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Hoovers Bus
Comprehe
private a

6-30 Weather
Over Cast
10:15
BA: No visitors yet
- Week day morning
- end of the park
- African attendance might be lower in mornings simply due to distance from main gate

10:20
Heard the first yells of children for the day

10:37 Group of 5 adults 7 children
mount kids
- Walked right past pands and passed on Baboons
Spent about 6 minuts observing baboons
Questions about butts + fur
no research action

10:50 2 adults 4or 1 child
Mom: "Could these hurt you?"
Dad: Points to Read my lips pated at teeth - "Oh yes they could"

6/30 2:18 EL
No stop, read panel ~10s while walking
2:15
2 teens stopped, read panel and attempted activity.
Did not do it correctly and left after about 1 min
2:20
1 adult group of 2
Stopped and read panel ~1 min
no activity

2:45
When Elephants are out and around pool, most visitors stop at ET then go back up park
2:48
3 adults 1 stopped + read ~20s
2 kept going

7/1
9:30 - 10 Maasai Videos
Elephant Walking Saga was up till 3:45
No Visitors entered Area until 9:58 AM
Overcast - raining
10-11 LP
One family - 2 adults + young child entered area - 10:05
10:06 left after realizing lions were on rock
10:18 - Visitor asked whether or not the lions mate?
10:26 - 2 adult 1 child enter - quickly left after seeing where lions were
10:30 - 2 adults + 2 kids entered one child said lets go on the bus! they did..
10:44 - 2 adults entered - talked to each other ~30s then moved on
:49 1 adult 2 kids 20s in area "Lets go on the bus!"

11-12 Lion Loop
11:10 1 adult - 2 children - adult stopped and asked older child if they wanted pic - kid ran off to bus

11:13 1adult 1child
adult prompted child to try activity - no sign read
11:14 1adult - child in stroller 5s glance while walking past
:24 1a 2c
1c photo opt on lion
:27 1a 2c photo opt in front
:28 2a 3c 1c 5s glance no stop read to group no action
:30 3a 3c 2c ran by and jumped as play - no read
1c completed activity - no read
Adults no action
:34 5a 3c
1adult walking glances
:35 1a 1c photo opt

1-2 Dig Zone
1:09 ~~3a 2c~~ 3a 1c
Walked around pit 2a glance went to baboon cave
:11 1a 2c
Kids played for about 3min Mom sat on bench and observed another 2-3 minutes of exploring before mom patted them up

:22 1a 1c
Walked by - read "Go ahead dig for fossils" out loud - 5s glance while reading - kept moving

10-11 Baboon Panel 7/2
:25 1a 1c
Child entered area - read panel 10-20s - moved on - no adult attention

:37
1a 3c
2 of the kids broke off and started using panel. - make references to primate evolution - interacted 45-1min

:40 6c
Highschool kids + siblings 3 read panel 20-30s

:48 1a 5c
Entered hut and parent pointed out cast, whole group walked over and read 20-30s parent pointed out differences in specimens
:51 2c engaged panel for 1min
"Those skulls are really big!"

11-12 ET
Baboon keeper talk - will change schedule to reflect

7/3 11-12

3 groups in DZ at 11:05
primarily very young children
using area as sand box
2 groups left a 11:15

11:19 2 adults 2c in strollers
parents gave children tools to
dig with - kids too young to understand
:21 1a 1c
adult sat on edge / child used
DZ for play
:22 1a 1c
adult observed while child
used area
:24 did interview 2 ~~st~~ groups
with strollers arrived
:35 2a 3c
Walked towards field backs, looked
in between cave, came back to backs
for ~30s - 1min before going to Snakes
:40 Visitor asked if display panel
was accurate because they were having
trouble locating ~~bass.~~ Bs
~~:49 2 kids arrived and began~~
~~to use area as sandbox~~
~~:49 1 adult 2 children~~

12-1 ET

~~12:07 2 kids entered~~
12:15 2a 2c
One child used panels / touched, encouraged
mom to look through them. Did not attempt
to find on ground ~2 min
12:17 2a 3c
Kids walked over and used panel / talked
while parents looked at enclosure 1min 30s
12:19 child walked to panel, parent
called them back - bears
:20 1a 4c
2 older kids flipped through
panel / touched 1min 30
:26 3a 2c
kids flipped through panels
quickly, touched casts a few times - play
:31 2a 3c
One adult stopped and took
picture of panel
:34 2a 2c
Mom holding child to see elephants
kid wanted down to use panel mom + 2 c flipped
through panels, pointing, no activity ~3:30
:37 2 groups 2a 3c / 1a 2c
1c + 2c from each group flipped through
panel + touched casts 1c + 1c from group 1
located a few points on ground ~4:30 g1
~2:30 g2

:41 2a 3c
1a+1c flipped through panels ~1min
1c stayed behind 30s
:44 2a ~~3c~~ 1c
1c started using panel, rest of group joined, Adults using torso to orient map, C used panels - held open to read, pointed casts to other children ~1:30 - 2min
:48 1a 2c
Older child used panels / touched casts mom pointed prints out to children on panel w location on ground ~1:30
:52 1a 4c
Kids used panels / touched casts / pointed to panel ~2min before looking at elephants

7/3 1-2 BI+A
BI 1:10 Adult read panel ~30s looked in enclosure quickly - scanned panel again - moved on
:14 1a 1c BI
"Do you want to read about them?"
adult read panel to child, both tried to locate
3min
BA :20 ~~2c~~ 2 teens stopped / read panel >30s did not engage
BI :21 1a 1c
mom read both panel aloud / moved on

:23 3a 2c - stroller
read 3 names aloud, moved on
:27 1a 1c BA
read panel moved pieces did not look at enclosure and track. Adult read parts outloud
:30 1A 1C BA
Child played with pieces / adult read panel briefly >30s
:31 BA 2c
2min Older read panel to younger / moved pieces while reading / did activity >30s

:33 2a 2c BA
1 adult read panel 730s, pointed out to other adult "Oh they're named after divers"
:37 BI 1a 1c
Stop / read ~30s
:39 1a 3c BI → P → A
1 child read panel aloud / whole group attempted to locate ~1min, turned around to p skull cave
Same group moved around room attempting each activity for about 1min each

Lots of mentions of activities on abacus but no one completing activity
:46 2a 1c BA
Child read panel for 10-20s then played with pieces

:49 1a/teen
Sat and read panel ~1min
Stayed behind group to observe/no pointing

7/3 2-3 GU
Stationed ~~by baboon hut~~ between panels large group by watering hole obstructing view
EG BG
2:07 BG 1a 2c
Stopped and read panel/pointed at guides/entered Baboon Ht ~20s
2:09 EG 1a 2c
1c glance/read 710s
2:10 BG 1a glance
:12 1a walking glance BG
:14 2a 4c BG
2a Stopped and read >20s entered Hut
:18 1a 4c BG
Stopped by G to wait, children read panel before turning around 20s
:20 3a 4c EG
took photo in front of guides
:21 BG 3a 2c
1a glanced/read panel while entering 10s
:22 BG 3a group glanced/read panel while walking by/used side entrance to hut 5-15s read

:25 BG Glance 2c
:26 BG 4a Glance 2
:30 BG 1a 2c Walking read "Are you a primate" said to child
:31 BG 3a Stop/read 20s entered hut
:31 EG 3a 2c - 1a stop/read 5s
:33 EG 2a 1c - 1a stop/read 5s
:35 BG 2a 2c - 1c stop/read 2s
adults w/arm pointed inside hut - kids went in before reading guides
Most people trying to look around guides because elephants are behind
:39 1a 2c EG Stop/read by adult 15s - did not use track panel
BG :43 1a 1c Walking glance by adult went in hut
BG :48 1a 2 teens Walking/read did not enter
:52 2a walking read/entered hut

9:30-10 ET 7/5
Clear, Sunny
No Visitors
Member Morning Average 0

10-11 LL
Sunny, Clear
:08 1a 1c
adult walking read 10s
:15 2a 2c
1 adult walking glance
>5s
:24 1 adult walking read
>10s slowed down but kept
moving
:36 2a 2c
Mom stopped at pic picture
with cut out no read/activity
"Do you want to take a pic w the
lion?"
:53 4a 1c Ind adult
glance

→

7/5
11-12 Lion Pride
Clear Sunny Lions Sleeping
next to glass
11:10 Lots of visitors in cave 20+
None interacted with panel yet
lions main focus
:12 One child glance >5s
:15 2a 1c
"What's this?" child - adult "see how
big your hands are" placed hands on paw
print - child lost interest ~30s
:19 2a 1c
Adult glance
:23 Adult glance
:28 4a 1c
Child touched case/casts ~30s
Mom read panel 20-30s
:32 2a 2c
"look how big their teeth
are!" referring to side panel
no case/panel interaction
:35 2a 2c
"Mommy look at this!" kid about
case - Mom looked >20s went over to her.
Rest of group came, talked about case
in foreign lang. 30s-1min went back
to glass "Pappa"
:38 1a 1c
Child walked over touched
cast mom pulled them away

:51 3c touched casts / took picture "Those were bear skulls"
:52 1a 1c
Child said what each item was / mom made corrections 30s

1-2 NV
1:03 1 adult stopped and looked through gaps of hut ~1 min - did not enter
1&D 5a 4c
2 adults 2 children approached and used videos
3 videos ~15s each ~~at bottom~~
:13 2a 1c
Walked thru hut Stop/read 15s kept moving No video
:15 3a 2c pressed 2 videos 10-15s child pointed at 1 object or screen (unsure) only action observed
:18 3 adults walked through "I could make this"
:15 1c
pressed a few buttons and moved on
:22 1a walk through
"This is really cool" no activity

:27 1a 1c
Mom walked through, kid pressed each button, did not watch / locate
:27 3a
Entered hut looked around interior and exited
:30 1a 1c
Pressed buttons, looked around and found screen. Watched 1 video, no activity ~~left~~
:33 2a 3c
Kids walked in pressed 1-2 buttons and went to see goats, parents did not enter
:35 1c entered read panel 15s ~~left~~
:38 1a 2c
Watched 2 videos, did not locate objects ~1:30s
:39 2a. 2c
Watched 1 video, kids too young parents prompted to locate, kids didn't
:43 2a 5c
3c entered hut, watched vids + located each object 1:30s
:41 3a 2c
1a 1c entered adult tried to engage child in activity 2 videos ~ "Can you find it"
child uninterested

:46 2a 2c

Walking past food court "I want to learn about Maasai People"

Walked through hut, no videos/activity

:49 1a 3c

Oldest child watched 2 videos ~2min younger kids played w/ fence

:49 1a 1c

Mom pointed out a few objects to special needs child, no videos

:54 2c

Watched each vid, pronounced objects, Tried to locate objects [illegible] ~2min

Same kids obs using LL

2-3 GU

BG 2:10 Child walked up and pointed to sign rest of group entered hut

BG :13 2a walked by, One pointed and spoke, entered side of hut

EG :15 1a 2c child pointed to guide, mom turned / read?

BG :16 2a 4c 1c walking read group entering anyway

BG :22 2c walking read / point

BG :23 2a 2c Walking read 1a

EG Elephant at watering hole visitors looking around guides to see

Crowds dying down big time

BG :37 2a walking read / entered

BG :37 4a 3c 1c walking read did not enter

3-4 DZ

:12 1A 1C entered, mom sat on bench; Child searched for specimens pointed out objects 4min

:13 4a 1c ~~w~~ 3a 1c used hands to sift through left beds ~1min

:15 2a 3c

Kids entered "This isn't sand, it's rocks!" Mom told them to use tools and dig, kids got tools + located 2 specimens and looked through field book 3:30s

:21 1a 1c

Child used hands to go through side beds - "A called C away" "I want to keep digging for fossils!" 1min

:21 1a 3c Younger 2 c dug through area w/ tools older/mom sat bench 4min youngest playing

Lion Feeding Demo 3:30

:35 2a walked through looked at panels ~1 min
:36 2c entered area and signed tools to locate, 2 more C joined ~3 min
:38 1a 2c
Kids playing
:42 2a 1c 1:30
3a 2c
to adults sitting on stones kids playing in area
no mention of fossils, bones, panels
adults relaxing kids playing
:48 2a 2c
"Stop throwing" x10
Kids playing in area no tools/fossil mention 3 min
:50 3a 3c
Kids in strollers/diapers playing in sand 1 min - Removed by Parents for throwing

HO 10-11 ET
Clear/Sunny
10-10:15 no visitors yet
First visitors arrive at baboons 10:15
10:32 2a 2c 50-59 1 stroller
1c Older 1 walked over and touched prints / no flip panel (open on arrival) 2 adults no attention to interactive 3 min
:34 1a 2c 30-7
one child touched panel / no engage adult 1 min
:36 2a 16c camp group
kids flipped panels and touched prints / limited adult interaction / no activity to find prints 2 min
:40 2a 2c 40-7 stroller
1c walked over and touched prints lifted 2 panels 10s
:47 1a 2c 1 in stroller
One child flipped through panels rapidly ~20s for all, touched cards ~15s, repeat learn no activity

4 visitors have passed by and made mention of tracks on ground but no use of panel
Visitor Disconnect
:54 2a 2c 30s
Children seeing how loud they can make flip panels smack

*Still a hole in drum

11-12 EL

:02 1a 2c 40s

Older child read panel aloud and 2nd completed activity ~1 minute

:05 2a 2c 40s 60s

return visit to interactive

"My turn to talk this time!"

10s activity ran off

:06 1a 2c 60s grandma/gpcs

Adult read part of panel and instructed kids all completed activity

:08 1a 2c 30s

did not read panel, child attempted solo, mom joined, youngest joined 45s

:10 4a 2c 30s 40s 60s x2

Dad made vocals/kids put in Lands

:11 2a 40s 60s 3c

Cs attempted activity "Put your hand in and see if you can feel it" - Dad

Adults kept moving to do stayed 1 min

:12 2a 2c

Adult instructed/assisted young kids with activity ~45s - 1 min

:15 2a 20s

Attempted activity ~15s did not work / I walked away & read panel then left

:16 2a 2c 40s 50s

kids stopped to try activity, completed without reading, 1 adult stopped + read 1 min

:16 2c 1a 30s

Children stopped and attempted, mom read panel and made corrections for this activity ~45s

:18 1a 4c 40s

Children attempting activity "You have to bang on it to feel the vibration" Mom + demonstrated 1 min

:20 2a 1c 30s 40s

Child attempted activity, parents assisted + No reading of panel aloud "Put your hand in, I'll tap it" - Mom

:24 2c

Attempted activity "It feels weird" ~35s

:25 1a 1c

Completed activity, switched 40s

:27 2a 3c 30s

Kids attempted activity, "Come put your hand in here!" "I don't feel anything" Switched, changed sound dials to tube worked 3 knobs rotated + left ~1 min

11:30 Lunch time area empty

:34 1a 3c

:41 2a 4c 40s 60s
Children attempted activity
Varied success / move on 1min
:46 1a 2c 40s
"Guys I think its broken"
Kids attempted activity "I can hear her!" ~45s
:48 1a 2c 50s
Children attempted after 1min
older read panel, adult stop/read
1:30s
:50 1a 3c 40s
Adult walking read

Cooling off, Crowd Lessening
Overcast

12-1 4h
BG :05 3a 50s
One took photo of garden
EG :14 1a 1c 40s
Adult point / Both read ~10s no pond
EG :15 2a 3c
1 child stop / read then 1a no pond
then C2
BG :16 4c
3 stop read, touched panels
20s had just exited hut

EG :17 3c 1a stop rd panel 15s
interacted with EF read/touched panels
:24 1a 1c 30s
BG exited hut, read garden ~15s re-entered
:25 3a 1c 50s-70
BG 2 adults walking glance while >5
:32 2a 1c 30s
BG Walking read, entered hut
EG Same walking glance, point (no 3 step 3)
did not use panel
EG :36 2a 2c 50-70
one child stop read - turned to elephants
BG :37 2a 60s one adult w/c entered hut
BG :40 1a 1c 50s
Adult walking read. Child entered without reading
BG :41 1a 1c 40s
Child w/c adult entered without read
BG :42 2a 2c 40s
Children walking read / adults entered without reading

Elephants vocal and active
visitors taking pictures
BP :48 1a 2c 30s w/c adult
BG :49 2a 3c 40s one adult stop read >5s walking read / entered with rest of group
BG :52 1a 1c 20s
Took photo with guides

EG:52 2a 20s read panel whole obs. etc. then used panel ~1min later

2-3 MV 2oo teen table outside

:08 1a 2c 30s
Older child watched 1 video none located items

:10 3c pushed buttons for 2 videos watched part, located items from pictures

:10 1a walk through 20s

:11 1a 60s walk through

:11 2c Walked through, press buttons, no activity

:13 2c 2a 20-30s
"I found this so I'm going to press the button" located 2 objects ~2min engagement, Dad stayed behind and located additional objects

:16 2a 30-40s walked up to side but and looked inside, no engage

:17 Child entered, mom pulked them out

:19 2a ~~wait~~ Stop/look inside kept going

:22 One Child entered watched part of one video then left

:25 1a 2c 30s
Kids pressed buttons quickly did not watch full vid/activity 2min in hut

25 2a 40-50s
Walked through "It's really neat in here" Left w/o activity/videos

:29 1a 50s 1c
"Do you want to see the Maasai house?" -A ~~the~~ watched 1 video, located objects from panel pictures. 1min 30s

:31 1a 3c 60s
"They even have a widescreen tv!, Kidding" A Adult prompted kids to watch videos/find objects, Kids not too interested, made bracelet with 2oo teens

:33 1c Walked in + looked around mom "Do you want ice cream?" "Yes" -Child hit 2 buttons + ran off

:35 1a 1c 30s
Walked through watched partial 2 videos and located objects from panel pictures

locating vs lost glasses 5min gap

:40 1a 40s
Watched 3 videos fully, no verbal cues, probably located items visually 3:30s

:46 2 teens 1c 1a 40s
Watched 2 partial vids, Pointed at 3 objects pronunciation of 2 items

:48 1a 40s Stopped and looked through back wall while fam w/ it
:50 1c entered and pressed 1 button ~20s inside, adult stayed outside

7/7 DZ 10-11
10:35 First engagement
1a 2c child pointed "We can go in that later!"
:45 group returned - mom would not let kids use area
:52 Camp group arrived
1a ~~2~~ 22c
"Dig the dig zone"
"I don't think that's how you dig for fossils" A 12 used area, interacted with zoo team, 3-4 found fossils, no mention of ~~[illegible]~~
3 minutes Counselor moved them on

11-12 BI+A
:18 2a 2c 60s
One child touched ~~[illegible]~~ panel
Parents called away
:23 2a 3c 40s
1 child used ~~[illegible]~~ ~20s did not move pieces after observing, read panel 15s

:27 1a 1c 60s
Adult heard mention baboon behaviors
:32 Camp group 14c 0A

:39 1a 1c 30s
Child moving pieces for play more using RML panel 35s
:52 1a 2c
A+C read panel ~30s, A left kids used pieces for play

2-3 BP
:10 2a 3c ~40s 60s
2c walked up read panel 30-45s
Re-Engaged exhibit, returned to read panel 1min
:13 2a 30s
Read panel 30s
:15 3a 5c 2-30-40s 160s
2a stopped + read 25s; 2 children engaged case + touched 50s
:23 2a 30s 2c stroller
2a Stopped + read panel 1-30s moved on
Other adult stayed, touched text panel Compared hands 2min
:26 3c 2a 50s
2 kids ran in ahead glanced at text, touched panel case ~20s

:50 1a 5c
1 child approached, touched case observed panel ~30s
:55 1a 1c 30s
kid walked over touched case dad followed, explained panel + prod test ~1 min

3-4 ET
:03 3a 30s-60s 1a
(adult walking glance on approach ~5s - Child walked by then 2a began flipping panels and touching casts w/child 45s
:09 2a 2c 50s
Walking from watering hole "What are those?" points on ground
:10 3a 2c 2@ 35s 60s
Each adult and child touched casts and used flip panels, prompted kids to identify animal before flipping ~130 Herald returned to flip 3 times
:13 1a 30s +=
Both approached, adult looked ~2s Child used panel + touched casts ~1min before leaving at last more
:16 2a 40s-50s 1c
Adults leaning on panel to get better view of elephants

7/8 DZ BI+A

:21 Zoo Camp 3a ~20 kids
Counselor engaged panel with 5-6 kids and explained comparing prints briefly before moving group along ~30s 12 kids used panel - touches, flips, no prolonged engagement
:30 Zoo Camp 2a 14c.
7 kids approached and flipped panels briefly ~15c 2 stayed ~~back~~ ~~towards~~ using flip panels and casts for 2-3min
:30 Elephant Experience
:42 3 kids from camp began using flip panels again after experience
25-30s before camp left

Hot day, pretty humid less visitors than expected all day

7/8 Wednesday now Thursday
Forgot lunch Clear, Sunny, Cool - Should be visitors today
9:30 DZ
:35 No visitors in area, maybe park
:42 2a walked by looked at area for a few second while walking / kept going
10-11 BI+A
Enclosure being cleaned, no animals viewable
:10 Visitor asked where baboons were 1a 1c 40s
"The keepers are cleaning their enclosure" - Me
~~"Hungry"~~ "Where are they" - Child "They're cleaning their home" - Adult

Keeper meeting w/ contractors
by Enclosure
:21 first visitors 1a 2c 50s
Used BP full interaction and communication
& panel concept by adult and kids
:23 1a 1c stroller
Walked through looking for baboons / left
:27 Camp group came through looking
for baboon
:36 Baboons back out
:37 Camp group returned 1 kid looked
at chairs for 5s before running to mom
:49 Camp group ~14 kids 2c
One camper sat next to ID panel and
read 30s no attempt to locate

Back to Wednesday
12-1 MV
:19 1a 50s
Standing in observing playing
video - no buttons pushed
2 children joined and pushed
video button, no location 1min 30
:20 1a 3c 40s
Kids pressed 2 button, kids + a watched
2 videos ~1min
:20 2 children entered, pressed
button, mom+dad called them away
from food court

:25 1a 1c 40s
Walk through ~15s looking
for other child, glances at interest
:26 ~~4c+~~ 2a 7c
4 children entered, began watching
and locating, 2 more than last one and parent
joined - "Read the signs and see what its about" - Mom
~2min all in 3min just kids, kids mentioned
"monkey"
:30 1a 30s entered, observed
and looked at panels 30s - 1min
:30 3a entered, looked throughout
hut briefly, walk through 30s
:32 3c hit buttons repeatedly
and only watched 5s of videos, 1c stayed
behind and watched 1 video while looking
around hut 1min
:34 One adult asked zoo keeper
about size/accuracy of Mosasaurus hut.
:35 3a 2c entered and watched
2 videos ~45s
:36 1a 5a 3c
Adult asked ZT about hut, entered
hut a/c and used videos 2-3 and tried
to locate - 2min
Chester's roars drew crowds
away from hut to house
:39 1c entered and stood/hung on
fence ~30s.

:40 4c entered, older kinds pressed 1 button, tried to watch video, stopped youngers from pressing all buttons ~1min

:41 2c entered, watched video partially, friends came + got them ~45s

:49 2a 3c 60s+

1a 2c pressed button + watched briefly before rejoining group 45s

1-2 BP w Pt

:07 3c camp group

Touched panel, read label, ~~eyed~~ ~~3~~ 1min

:08 1a 3c 45

1a 2c approached and touched panel "why are they all primates?" c "cmon look at this" a → 3c ~1min

:15 1a 1c 60s group total 3a 2c

1a + 1c approached panel "What are these^ c A responded with each item + reading panel ~45s

:20 1a 2c 1 child stepped back from enclosure and read panel entirely ~1min

:21 2a 20s ~~total~~ walked in and glanced at skull case

:22 1a 40s stopped + ~~to~~ took 2 pictures of skull case

:23 2a 2c

1 child separated, looked at case + panel ~15s before returning

:24 2a 3c

2 children separated and used panel/case ~30s "Did you know baboons are like our cousins?" c → a

:27 2a 3c 30s

Group took photo by case, not in front, then turned to read panel/case 35s

:30 2a/teens walked up and read panel from a few feet, did not engage case ~30s

:32 1a w/stroller stop/look 15s before exiting

:37 1a 50s 1c

adult walking look at case while exiting but ~5-10s, child did not

:39 3a 1c

1a - 60s walking glance at case while exiting 10s

:43 1c read panel and touched case for 30s before moving over to RML panel

:44 2 teens entered and 1 pointed to panel and showed it to friend, did not go over to panel

:46 2a 60s read panel and observed case for 1min

:32 2a 5c 40-60s
4c engaged case/touched, read panel briefly ~40s
1a held small child and pointed to case ~30s before all moved on

2-3 LP
:07 2a 2c 40-70s
2a+1c approached, child read panel aloud and rest of group joined + touched casts 1:30
:05 2a 1c 50-60s
Child separated and cast panel while touching cases ~45s adults did not engage, Child pointed out side panel on exit, group stopped + read ~15s
:10 3 teens entered 1a 2c teen entered, 1 walking glance on entry
:12 3a 2c
Young children approached and touched casts
:20 2a 6c 30s
3 kids approached and touched case/panel ~40s
:24 1a 2a 40s
Children read panel aloud, touched casts/case, adult listened and talked in gaps 1:30

Several questions about cubs and reading from visitors
:32 4a 30s 2c 1a 2c 40
1 child approached and touched casts/panel playfully while reading panel ~35s
Lion moved from cave to top of rock, few visitors
:39 2a 1c 40s
All engaged panel and touched casts while each boy each looked/read panel ~1 min comment about cat at home
:40 Camp group 10c
1 separated from group and touched casts/panel quickly ~20s
:42 3a 40-60s 2c
1c separated and touched lion prints quickly before returning to group

female lion returned to cave and sat near glass, lots of vis for photos
:52 2a 20s 1c 1a 60s
1a walked over and compared hand to lion print, called over child "This is their paw" child touched "Which is a lion and which is a house cat?" other 2 all adults tracked prints only older adult read panel

10-11 EL

10:30 Rainy + Overcast

6 total visitors have passed by; no usage / looks

Docent by Elephant house

:36 1a 3b 2e

1c walked up and left

drum cover ~20s did not read

:38 1a 1c 50s

Child lift drum cover ~20s

adult read panel but did not correct behavior or read aloud.

:40 1a 2c 30s

Mom read panel, told child to do activity backward and helped

:44 2a 3b 1c

1a walking look ~5s

:45 Camp group 8e

1 walking look ~8s

:48 - 44 group returned child walked up and said hello in tube before running off

:49 1a 1c 50s

a read part of panel aloud child read, both did activity ~1 min

11-12 GH Really raining now, ~~limited~~ No vision of Elephant garden

:14 1a 1c 50s

Adult walking glance, followed kid into hut

:16 3a 2c

1a 1c walking look as they entered

:21 Club car parked in front of BG for Baboon Experience

:22 2 teens walking glance, did not enter hut

:30 2a 1c

1a walking glance ~~75~~ the other 1a walking read ~10s

:39 1a stopped and read while waiting for group, did not enter hut, "too crowded" ~10s

14 visitors have had the potential to glance / read EG panels - none moved from GH area to tracks panel

BG :50 3a 40-70s

1a walking glance, on their way in to hut

7/10 10-11 GW
Warm, Sunny, no visitor use yet (10:15) roughly 20 visitors have passed through area

:26 2a 30s 2c
By One adult walking glance, Pointed out guide to friend who laughed at "Bird Primate"
BP :33 2a 4a 2c
1a walking read, entered front of hut from ck, rest of group entered side
:38 1a 30s 1c
Stop/read Elephant guide w/child did not use panel ~20s, child ran over to panel ~3s before going to ck
:42 2c 1c 50s
running ahead of parent, stopped by guides, read ~10s, ran into hut adult followed ~30s later
:48 2a 40-60s 4c
3 kids walking read as group passed from ck ~8s each

11-12 MV
:00 3a 40-70s adult w/ parents
Entered, and looked around hut, speaking Spanish ~1:30
:01 1a 1c 50s
entered and looked around hut "Did they have a TV" C pressed buttons at the same time and didn't stay for whole video ~2min
:~~30~~03 2a 2c entered watched part of video ~30s
:04 2a 3c walked through
:05 3c in complaining that the other one keeps changing the video
:06 1a 1c entered, child pressed buttons quickly, tried to explain objects ~1min
:07 ~~1a1c~~ 2a entered and watched 2 videos fully before leaving could not see them locating objects
:08 2a 2c 50s
Dad + 1c stood + watched 20s of video "~~Do~~ Does that bed look comfy to you?"
:10 4c 2a Camp group
Watched parts of videos in groups of 2 2a left ~45s 2c 1:15 2c 2min
:11 3c
Camp ~~group~~ group kids walked up individually and left quickly ~10-15s

:11 1a 30s walked halfway and came back after 8 other people there

:15 4a 5c "No I want them off" C "They don't go off bud" M Kids complaining about switching videos, 2a were trying to explain objects, kind of worked ~2min in hut.

:18 1a 1c 40s walked through pressed 1/3rd button, followed chipmunk out...

:23 1a 1c stroller Walked through ~5s

:24 3c entered I watched 20s of video, other 2 looked and left ~10s

:27 1a entered and looked around hut, no vids, ~40s.

:31 2a 1 teen entered and looked around pointing to objects ~40s

:32 1a entered, stopped and looked ~15s

:34 2a 3c pressed 1 button group watched ~~30s~~ ~15s before looking around room and pointing out objects not on panels ~1min

:37 3a 4c walking looks from food court seating area.

:40 1a 3c 40s + 1c toddler Children entered first followed by dad and toddler, left ~20s, kids watched parts of videos and complained at pressing each buttons bottom 2min

:42 2 adults 50s walked through ~15s

:43 1a entered w stroller 40s rest of group 1a 2c 40s joined, pressed buttons not realizing where screen was 30s walk through

:44 2a 3c 30s watch 2 partial videos 1a + 2c left 40s 1a + 1c stayed and pointed at objects not refusing to panel 1:30

:46 2a + 2c 20s camp groups entered watched 1/3rd of vid, a's joked kids looked around + left after 1min

:47 1c entered and looked around no videos ~30s

:48 Different kid same thing

:52 2c enter from food court looked around + left ~20s

:53 2a 30-50s → 2c Walk through

12-1 LP

:06 Visitor approached me and said "We are very impressed with the zoo, you've done a great job here". FO Female

:07 2a 3c 40-60s
One child walked over to case "Mom!!" Grandma and other child walked over and adult explained specimens and answered kids questions ~2min

:12 1a 2c 40s adult stop/read ~15s before leaving after kids

:13 2a walked in taranted case and casts, ran off to find boys 30s.

:13 2a 3c 1c from groups walked over and touched case/casts 10s

:13 2a 5c 40s
1 adult stopped and turned back to read side wall row panel

:18 1a 40s
on phone stopped 5s read left the same way she entered

:22 Camp group 9c 1a 20s
2 walked over and pointed at case 710s before running after group

:25 1a 2c 1 child walking back at panel ~10s

:31 2a 1c
Child approached case, "Look at these little paws" Mom came over and checked out case 45s-1min

:32 1a 4c 3 children walking ~~toward~~ through to meet adult, 1 touched case ~10s

:32 Camp group 1a 7c
2c wandered away and observed case ~20s before returning to group

:35 2a 3c 20s-30s
1 adult took pictures, other prompted kids to identify specimens, kids answered questions and touched casts "are these bear butt prints?!" Group Emily 1c 3:30

:42 3-5a 20-30c
6 kids went and touched case/casts 20s before returning to group - no read

:43 1a 1c 40s ~~take~~ child and adult identified specimens + touched casts/case A read panel but not out loud kid did not

:44 1a 3c 40s
1 child ran over "Hey Guys look at this!" Group joined, adult prompted identification 1min

:47 1a 40s did not enter 3c entered 1c touched prints / read briefly ~20s

:51 1c from 2 groups
2a 40s 3c
1a 2c 30s
Each child walked over + touched prints / case ~20s before running back to groups
:52 2a 2c
Each child read the rear panel to different adult ~30s
:54 1a 1c 60s Gram + Child
Adult identified specimen for child who touched prints + looked at stuff ~1min

2-3 LL
:02 2a 3c 30s-50s
Each child climbed on cut out for picture, 2 read panel, same dad activity
:05 1a 10c Camp group 3 touched cut out, "how far can a lion jump" read one aloud
:06 2a 40-50s 1c
Stopped and took picture of child in front of cut out
:09 4 a/teens walked up "How far can a lion jump?" read one aloud, did activity only one 30s

:10 3a 30s-50s 1c
Walking point at cutout
:12 2a 50-60
1 stopped + read panel ~35s
:14 2a 1c in stroller 40s
Stopped and took pictures with cut out
:15 went to cave, Camp group in 4th grade
:16 2a 2c in stroller
Stopped to take photo at kids
:19 1a 1c & 2a 3c group stopped and read panel, both tried activity
:23 2a 1c 40s child asked why lions have to jump so far, couldn't hear mom/dad answer - did not jump
:24 1a 3c 40s
Children checked out cut out, mom read panel ~33
:30 1a 3c 50s
kids separated and ran back to jump before ~~return~~
:41 2a 60s Stop/read 30s
:44 3a 20-30s Stop read/do jump 35s
:45 1c 2teens "How can jump really far" C

:48 1a 3c 30s
Stopped to take photos
:51 Camp group 1a 6c
Walking read by 3c

7/11 9:30 – 10 EL
:40 2a 30-60s
1a Walking look at panel
~10s
:46 1a 1c 40s
Both stopped and touched, did activity, mom read ~30s
:51 1c walked up and tapped both openings while reading, fixed behavior
Rest of group joined 3a · 40-60s
All children tried activity 4c
before using tubes as drum
~3min 1a & ~2min 1a 2a +1:30
:56 1a +1c 56
Child approached and read panel
Did joined activity "Can you feel vibrations?"
~2min "yea they're saying elephants can hear with their feet"

ET EL
CL BP
LP BE+A
MV
GU
DZ

10-11 BP
:06 1a 1c 40s
Child approached case "Can I touch this?" Adult called them out of hut.
15s
:18 1a 60s
Stopped and observed case ~20s
"Let's look at the Bamboons"
:27 2a 1c 30s
1a walking glance 75c
:30 1a 30s stop/read main panel and observed case, did not touch 1:30
:32 2a 1c 30s
Child asking "What's this questions about panel and case, adults answer kid ~45s a ~1:30
:35 Visitor reported a visitor hitting glass in lion case – went to check it out –
Docent pacing at glass w/ lions playing
:40 1a/teen took picture of case on exit, moved on
:44 1a 60s stop/read ~45s
:46 2a 1c 30s
1a approached case – read panels ~1min
:52 2a 20s-30s stop/read
1a pointed at case, both read/talked about panels/case, no touch

Penguin Member Morning @ 9am most v of day
Clear, Sunny not as many v as expected

7/11 12-1 BI + A
:08 1a 1c 30s
Sat next to ID panel and read ~30s pointed into enclosure
:15 group parked stroller in front of Baboon
:23 group parked stroller in front of Baboon, use ID Panel
:24 1a 1c 30s
Child sat next to ID panel (too young) adult read briefly, tried to flip text panel
35s
:27 1a 1c 40s
Approached panel, both touched picture then read panel/walked away ~30s
:28 1a 50s 2c
"Oh look they even have names": A read all names to children, saw and ID'd Mandrill outloud ~1min
:32 1a 20s walking look @ Ab
:37 2a 2c 30-70s
"Can you tell me which is Jefferson?" 1a C- "Not one" pointed at panel 35s adult read panel ~20s
:42 2a 2c 40s
1 child moved person and read panel briefly >20s
:45 2a 20s-30s
1a read names about "Where Jefferson" Searched then Mandrill w/Friend - Both Read/Looked ~3mins
:47 1a 40s-50s 1c
Child approached ID panel, read briefly/stop tried to flip up text - moved on 20s
:51 2a - 30s 1 walking glance on exit >5s

7/13 9:30-10 BI + A
Mostly Clear, Sunny, Supposed to be a very hot day
9:48 - first visitor sighting - female, retiree out for morning walk - nice chat
No visitor use of panels, in total 3 visitors passed by baboon hut
10-11 FL
:14 - Zoo camp 1a 15-20c
"This shows how far a lion jumps if you guys want to try" - A none attempted
:30 1a 60s stop/read panel 35s no activity
:40 1a 1c 30s
"What's this?" Child asked pointing at lion cut out - mom pointed to lion and both went to bus
:44 Camp group 2a 14c
2/c in lion jumped 2 others stopped + read then jumped while group passed ~1:30
:52 1a 40-50s 3c
1 child walked up and touched cut out; no activity

12:1 DIG Zone

:05 1a 2c 4Os joined by 3 more adults and 1 more child

2a + 3c stayed in D2 area

kids used tools to dig while adults observed from side - 6min 1a+1c

~3min 1a+3c

:11 1a + 1c entered, child examined box specimens for ~10s then looked @ baboons, Both left to baboons ~35s

:13 Camp group 2a 7c

Counselors sat on bench, kids used tools/hands to explore.

~9min "I found Dinosaur bones!" said 7 separate

:20 2a 1c ~~1c~~ did not enter D2, stood around edge, child did not want to leave stroller

:24 2a 5c/2 in stroller 30s/40s

3c entered and began digging

No find of fossils, more play

-5min

:28 1a 2c 40s

Play, not searching for specimens or using panels - adult sat under nister tent 14min

:36 2a 3c

Kids playing Connin

:41 Camp group 2a 1c

4-5 kids playing rest crowd 400 lb to dig and find samples 7min

no panels used

:48 Camp group 1a 1c

kids jumping off rocks in to sand most ~6 gathered around box picked to look for fossils before running in to sand no mention of found fossils

:52 1a 3c 60s

Adult working w/ kids to locate sample ~45s kids lost interest + started playing 3 other adults from group came to observe, ~~1~~ adults talked about fossils and layers in walls together

1-2 ET

:07 1a 50s 2c

1 child used flip panels ~30s

:08 2a 2c 40s-60s

Children touching casts using panels / mom reading ~1min

:11 1a stopped + read panel fully moved r → c rest of group 4a 3c joined briefly before leaving ~1:30

:12 2c (separate) approached and flipped panels quickly 1 left after 20s the other stayed and went through panel closely ~1:30

:14 1a 40s 2c

All three touched panel + casts talked to each other after flipping up panel → next one

:16 2a 60s 1a walking around on approach 10s

:17 1a 4c 20s
2c + a used panel and touched casts ~40s
:19 2c used flip panels + touched casts 1 min
:21 2a 2c 50-60s
Children used panels / touched ~30s
:26 1a approached and read ~20s before returning to group
:21 Camp group 1a 11c
4c used flip panels rapidly before turning to elephants

Disconnect between tracks on ground and panel
No visitors have noticed the 2.

:24 3a 2c 40-60s
25s 1 adult read briefly, matched his foot to footprint on panel - 1 other adult stopped / read panel ~20s
:29 2a 3s 2c
Mom called over dad + kids to see panel all touched casts / flips mom read outloud
:33 2a 2c 40s-60s
1 child approached / used 3 panels and returned to group

:38 1a 2c 50s
Older child used flips for cin stroller put foot up to elephant cast ~45s
:41 2a 1c 40s
Parents used flips, then child used alone while parents asked "What is this one" Questions - young c learning to read 2min
:44 1a 2c 50s
Younger child approached and flipped panels, mom asked "Which is the elephant" child pointed out cast. ~30s
:45 2a 20s / teens approached + used flip panels together ~20s before observing 11c
:50 1a 2c 50s
1 child approached panel - touched 2 casts + flip before observing elc ~10s
Other child moved over to panel + both used all flips. ~40s
:52 2a 3c 50s
Oldest child began using panel / touch + flips / rest of group joined and went through whole panel ~1min

2-3 DZ
:06 1a 30s 2c
Kids playing 7min

:08 1a 30s 2c
Kids playing 4min
~~:08~~
:08 2a 40s 3c
1a + 3c digging for sample
6min "We found a triceratops!"
used panels to identify a helped c
Adult of first group → 3rd "I feel
like this spot is the most frustration
for parents when the kids don't want
to get out."

:24 ~~3a~~ 40s ~~4c~~
children digging, 1adult read
side panel by town fully ~1:30
"We found a dinosaur bone" -c
adult also looked through feild book
~20s in area 5min
:27 2a 2c 50s-60s
Kids playing adults observing
:28 2a 1c 30s
Young child ~2 playing 16m
→ Kids began searching for sampler
and using tools 14min
Child dug adults walked
around

:35 2c 1a 40s + 1 in stroller
Entered to look for sampler
"We need to get brushes" -c
"heres what youre looking for," -A pointing
kids to ID panel w/ tools 10min
:38 2a 60s + 1c
Grandpa and child searched for
fossils 6min
:49 2a 30s-40s 3c
1c + 1a used box sampler + feild book
~1min 2c → 3c digging more for play
older 2 located 1 object 4min
1a + 1c moved around and read
other panels ~35s

3-4 GU
BG :12 1a walking read followed
group in to hut g: 3a 4c
BG :16 1a + 1c child stop/read 15s
BG :27 2a 1c 30s
Walking read 1a, entering
through barn door
BG :30 2a 20s 1a walking glance >5s
EG :32 2a 40s 3c
1a+1c stop read 10s
:40 Africa Just about empty
8 visitors in Elephant house, none
in guide area
EG :50 2a[30s] walking read ~10s
BG :50 2a[40s] 1a walking read ~5s

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7/14 11-12 ET

Overcast windy, forecast: Rain

Africa fairly crowded, mentions of lets get through before the rain on my way through park

:14 1a 20s 2c Camp group Counselor assisting children, reading aloud ~45s

:15 2a 40s-70s 3c

Adults reading with 2c

Oldest child compared his foot to carts 1min

:18 2a 50s 2c

1a+1c using panel, adult asking about flips + pointing at ~~pa~~ carts -45s

:18 1a 2c Camp group 30s

Group quickly flipped 4 panels and moved on 25s

:20 1a 1c 40s

: Child flipping panels for fun, mom pointing at carts

:22 1a 1c 20s-30s

Touched carts and used flip panels did not search for tracks -30s

:22 1a 5c 50s

3c flipped panels quickly, mom joined + pointed @ panel / flipping slowed down 1:30s

:26 2c 3a 20s-30s camp grp

1c tried to sep. and use panel counselors called them back

:27 2a 60s-70s 3c

Both adults touched carts + panel - prompted kids to do the same 2min

:26 1a 60s + 1a 1c

Joined another group at panel, touched carts + flips, read 3 ID's aloud ~1:15

:32 1a 2c 30s

Walking look from all members 5-10s no engagement

:33 1a 2c 30s

Kids went over to panel, briefly tried to guess ID's ~40s 1c went to observe the other began using flips for play ~25s

All 3 engaged + touched panel+carts ~20s

:36 2a 30s 1c +1 in stroller

Dad holding child, using flips + trying to explain panel, child got down and touched carts 1:20

:37 1a 2c 30s

Child comparing foot to track cards 45s

:40 1a 2c

"Hey what are these?" Referring to tracks on ground", 1c knelt down to compare hand - Did not use panel

:42 1a 2c in stroller 40s

Stopped stroller and kids touched carts ~10s

:43 2a 3c 40s
2c using flip panels + reading
1c comparing feet to casts
2mm
:48 2a 50s
Compared feet to tracks on ground "Then what do you think made these?" Did not use panel
:50 1a 70s 2c
both kids used panel - casts + flips
~30s 1 stayed and kept reading
40s
:51 1a 5c Camp group
Kids slapping casts and using flip panels as fast as possible
"Don't break those" - C 30s
Counselor stopped them - Sound annoying

12-1 BT + A
:01 1a 60s 1c
Adult "Last thing here names" Read names aloud to child - child ran over to BP ~15s
:12 1a 60s
Stopped and read Above panel ~40s used DML panel ~15s
:18 2a
1a Stop read ID panel on exit
25s
:26 2a 3c
1C + 1a read panel briefly ~20s child read aloud 2 names - dad 2 names
:30 1a 1c 30s
Child used clicker for play - 20s
:41 1a stopped + read ID panel
~20s
:55 No more interactions
Started to rain around 12:45
:58 2a 20s
~~Also~~ Moved clicker piece according to actions they observed in enclosure
"Well we did see these 2 grooming when we came in" - 1a

1-2 EL

:05 2a 30s 8c Camp Group
Kids took turns doing both parts, pushing + complaining
Counselors said no more after 1 tell
1:35

:07 2a 20s
Stopped / Read panel both
tried activity 1 min

:14 1a 1c 40s
Child began using tube while dad read, child tapping on drum cover, didn't feel anything "No you're supposed to hum in to the other end" - A→C
Child corrected "oh cool!" - 1:20

:34 2a approached + read ~35s
rest of group 4c 2a 40s
Children all attempted activity did not read - left after ~1 min

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11-12 EL

:08 1a 4-5s 2c
2 children completed activity / switched
Dad observed + read panel 35s

:11 1a 4c 5c Camp Group
6 Children gathered around EL
no reading - kids pounded on drum cover and ran off (2) 4 swapped turns completing activity 1:30

:13 1a 30s 1 toddler
Child looking at pictures and touching tube / panel - put hand on drum cover - no activity 2 min

:15 2a 4c 2c
"Can we do that?" C pointing at tube
"Do you feel vibrations?"
Children + 1a completed 45s

:16 3a 5c / 2 strollers 20s-40s
1a read panel aloud to kids, kids tried + argued over turns 70s

:20 1a 13c Camp group
4c approached and ~~asked~~ completed activity - 1 read panel briefly - 15s
Group moved on after 1 min

:21 1a 4c → Mikes book

:23 1a 6c Camp group
Counselor observed with 1c
5c did activity "Did you hum?" C
Kids correcting each other 1:30

:25 2a 4Os 2c M.
:26 1a 6c Camp
"What's this?" C
kids banging on drum cover (2)
Others trying to do correctly 1 min
:26 M
:27 1a 3c 4Os
"What's this" C mom read
panel, kids went right to activity
"You have to turn" M - A helped
and kids took ~~turns~~ re-doing
activity 2 min
:30 2a 5Os ~~3~~ 5c
3 young c ~~in~~ trying activity
"No you have to put your hand
here" c → c Adults observing 4/5
:40 2a 13c camp group
7 kids banging on drum cover
no reading of panel - counselors stayed
with other kids at Elephants 1 min
:42 1a 3Os 6c
"I don't see nothin" - c kids
attempting activity solo - none doing
activity right or reading 45s
:43 8 teens camp A-nic
6 c attempted tapping cover and
listening through hole - I read and
corrected out loud "You need to hold
your hand there and make sound
here" 2 min

:47 Camp group 1a 7c
1 kid separated and banged on
cover - 5s ran back to group
:48 M
:49 1c approached + read panel
called for sibling 1a + 1c GA joined
1c explained to sibling - both did activity,
a kid found "Can you find 4?" a
group helped explain to next group 2 min total
:50 2a 32s 5c approached
kids ran up to other group who explained
and assisted, kids took turns doing correctly
group of 4-5 yrs, Mom stepped in when
struggles 2:25
:53 2a 4Os 2c
1a + 1c approached and read, next
joined - kids swapped activity parents read
joined in to hum 1:00

3-4 MV

:06 1a 60s 1c
"This is a massive house" a-c
No videos 25s walk thru
:7 3a 6c
20s watch 2 videos
Group lost focus after ~1min
began talking abt other exhibits
1:30 in hut
:08 1c separated from
grp @ goats - entered looked thru
inside over - left - 15s
:09 Different Child from
Zoateen table group - same actions
35s
:18 1a 1c 30s
Child entered - "Dad tried to call
away to goats "I wanna see this" - c
Watched 1 vid before leaving - Dad
called away 4-5 times 45s-1min
:22 2a 4c 40s
1c entered hut, looked around house
pressed 2 videos + watched mostly
1min
:23 1a 1c 40s
Entered, watched remainder of video
and looked around hut - 45s

:24 1c
Child stood in doorway and looked
around before shrugging and walking off
10s
:27 2a 20s-30s 2c in stroller
"there's a house right there" pointing
:27 1a 1c 39s
Adult looked around hut and inspected
items - no videos - child played while
mom looked ~1min in hut
:34 2a 40s 3c
Young 2c entered and pressed
video buttons "I want to see the TV"
no location & objects 1:35
"What do we do?" I stepped in
and explained the interactive to mom + 2 youngs
Group worked together to locate and watch
videos 1 at a time - spent another 2:45 doing
activity

:50 2a 30s-40s 1c
Child entered and looked around ~40s
Watched vid playing - did not watch
multiples
:52 1a 60s 2c
1 child did school project on Hawaii
Entered with group and explained a lot
re boat culture 3min lesson
:55 2a 2c 30s
2 kids pressed buttons watched ~30s of
2 videos started to hit buttons first

7/16 12-1 BP

Clear, Sunny day, main lot full on arrival, lots of visitors today

:07 1a 40s 1c

Child pointed at case "I want to see this" "Ew thats a big hand" ~20s Mom called away

:08 1c 30s 2c

1 Child approached and put hand on case ~15s other child called away

:08 1a 50s 2c

Same as above ~~date~~ + 1 diff child

:13 2a 1c 30s

Walked by case, both adults scanning/observing case + panel ~25s

:14 2 teens

1 explained panel and case to other ~35s point/read

:15 Camp grp 1a 11c

2c approached case - read/touched case ~35s - Counselor joined, 1c explained and 3 talked about case - 3 other c joined

2c 35s 1a 1c 1min 1a 5c 55s

:18 1c tapped on case + moved down line ~20s maybe read case?

:19 Camp grp 1a ~~2c~~ + 1c 6c

Counselor reading to self, 6c pointing and talking about panel, looking in case 1:45

:21 1a 50s 3c

Children (4-5) looking in case + at panel ~45s pointing at pictures

:23 1a 1c 40s

Mom looked at panel on exit, was passing child pulled over - touched case - compared hand ~35s

:24 3a teen 1c 20s-50s

teen + 1c approached case - looked at lemur samples before going back to group

:26 2a 1c 20s-30s

1a + 1c in stroller "Did you see these pictures?" a → c other adult came over, a² pointed at panel - said names of species 40s - a² took picture ~30s

:28 2a 20s

1a stopped + read panel ~30s

:32 2a 5c 30s-40s

1 child approached and looked at case ~30s "Do you guys want to see something?" grp didn't join

:32 2a 70s 1c

1a stop read 45s

:33 1a 40s 4c

2c ran over + touched case before going back to group ~30s

:36 1a 40s 2c

"We're all related" A "What are these black hands?" C

A answering Qs from kids - highly engaged 1:15

:38 1a 2c 40s
Walked in walking read at panel by A - Child approached and touched case 25s
:39 1a 40s 1c
"There are Orang hands?" C - Adult answered Question about case - 45s
:40 1a 50s
Asked what would happen if there were no fencing - Referred him to case to see teeth + hands - Spent 1:30 inspecting case/panel
:44 2a 2c
1c approached case - looked around 15s
:44 1a 1c
Dad reading, child touching case 30s
:46 1a 9c Camp grp
4c walking look/read at case/panel on exit
:47 1a 1c 50s
approached case on entrance - A read + observed case, child touched case + talked 40s
:50 1a 1c/teen
teen stopped + took pic of panel and case - 20s

:31 1a 20s approached + read panel/looked in case - 35s
:34 1c entered + looked in case - Adult called from outside hut - ran out

1-2 MV
:04 3c + 1a Entered - camp grp A stayed - 20s 3c pressed 3 vid buttons and looked around hut 1:15
:05 1a 60s 1c
Watched 1 vid fully - read didactic panels, no pointing to objects - 1:10
:07 1c from outside - "Whats in here?" - Got group - 1a 3c total to enter and look around hut - 45s
or watched vid already on - no buttons
scanned objects in hut
:10 1a Walk thru scan 15s
:10 Camp grp 14c? 3a?
"Can you find Maasai objects?" 1c read aloud - most gathered and left quickly - 30s 4 stayed and watched video - 1min
:12 4c enter 2 hitting buttons quickly "I turned off the TV" Oldest getting annoyed trying to watch video
Adult (mom) took picture of kids inside 1min
2 youngest re-entered 3 times just hit buttons for 20s - left - repeat

:15 1a 40s 1c
Entered watched all videos ~ 25s c each - 2c from last grp still hitting buttons - group left - Located objects on panels - pointing 1:45 in hut
:18 1a 50s 2c
Entered - looked around hut.
"Can you imagine living here?" A
Adult read panels + looked for objects
Kids looked around - Adult more eng.
1:45
:24 Camp grp 1a 30s 6c
Children pressed vid buttons for play 2 ~~ab~~ scanned inside of hut ~~[illegible]~~ "Stop hanging on that" A
:26 Camp grp 16c 3a?
"Whats in here?" c Kids trying to locate objects - watched 1 video ~30s - 1 stayed and took picture of inside hut 1:25
:28 1a entered and looked around inside - inspected Structure - 1min
:29 2c entered - looked around for objects - "I bet thats an instrument or something" Watched 2 vids 2min
:31 2a/teen 2c
Walk through 25s
:32 1c entered - Slapped buttons a bunch.
Just there to hit buttons
"I'm Warning" → C outside

:35 1a 1c 40s
Entered - located objects from ~~first~~ panels did not watch videos
:38 1c entered - hit 2 video buttons did not watch - mom called away from outside 15s
:42 2a 40s-70s 4c
Kids hitting buttons - "It doesn't work" didn't look for TV panel - adults looking around inside + talking to kids "See that fireplace? thats where they cook". 1min
:44 2a 2c
Entered watched 20s of 1 video and left, no ID of objects
:45 3c entered + hit all buttons no watching or locating 20-30s
:48 4c 1a 50s
young c's slapping buttons - Older "No press one and watch" - "If you don't want to watch we will leave" - kept slapping - left 1min
:51 2a 40s-50s 4c
Kids hitting buttons - Adults trying to explain - kids not interested 45s
:53 1a 60s 3c
Watched 2 vids - 30s each
Scanned room and located 3 objects from panels 2min

2-3 ET Loan 7/9

:04 1a 40s 3c
Stop/read - Adult looked at panel ~35s
kids used flips + touched carts 1min

:08 2a 30s 2c + 1c
Adults + 2c used panel briefly parents
read outloud as 2c used 3 flips then
moved on 35s

:09 1a 70s 1 teen
Both stop/read panel ~ 25s teen
took picture of panel

:11 1a 1c 90s child reading panel
touched 2 carts - rejoined mom to see etc

:12 1a 70s Stopped and read
panel - no use of flips - Did not touch 1:20

:15 1a 3c 30s
Kids using flips for play
Mom tried to stop + have them read - rope
2 min

:19 2 grps 1a 1c 60s + 1a 30s 4/c
1a + 1c touched carts / read panel - Adult
actually made connection between ground + panel
1 min / 3c from other group used flips Last
35s

:23 2a 30s 1c
Child walked over to panel - read 2
flips - rejoined parents 20s

:23 2 2 teens standing in front of
panel blocking / not using :31 moved

:26 1c approached and read thru
flips fully before going back to group 45s

:27 1c Different c read 4 flips 25s

:31 2a 40s 1c
1a + 1c used 2 flips - child continued
use just flipping 40s

:33 1 teen stopped + read panel
no flips / touch 40s next to grp 2a 50s
young sibling walked over and used flips 35s possible read

:36 1a 30s 2c All touched at least 1 card
mom used flips for kids - kids read aloud
1:20

:39 2a 5c 2 in Stroller
3c approached - started reading + touching
carts - both Adults joined - kids reading to
each other 2c from other groups joined - all reading
together 2:20 first grp

:41 2c that joined - joined by 3a 4s - 60s + 1c
kids talking to adults, pointing to cards 1:40
2 adults used flips

:44 1a 20 5c camp group
3c using flips 1a + 1c reading from behind
50s

:46 1c read panel ~ 30s compared
hand to 2 cards before going back to grp

:47 1a 60s 2 teen walking look >15s
1 teen made size of elephant track with hands
"Did you see how big their feet are?"

:49 1a 50s 2c
Both children using flips 1 at a 1 by self
1 min engagement

3-4 EL
:10 1a 60s 2c
Children doing activity - Adult read instructions aloud when kids were doing it incorrectly 45s
:12 3a 40s-60s 5c
"What is that" c 1 adult read panel aloud for whole group - kids still did activity wrong - adults corrected + kids took turns 2:25
:15 1 teen walked up + read panel - 20s
:17 2a 20s 1c child went and tried activity solo - adults observed c/c 35s
:19 1a 40s 2c
Children did activity quickly + right 35s
:21 2a 60s 1c
Adults read panel + joined c in activity - all completed 1:15
:24 2c 30s-40s 3c
Grandma read panel + instructed activity kids completed + took turns 1:25

:25 1a 40s 2c
Adult read panel aloud - kids did activity - switched
"Do you feel it?" A → C "Not a lot" 1 min
:28 2a 3c ~~30s~~ 1a read panel aloud and instructed kids who took turns - Adult did activity too 1:05
:30 1a 40s 2c
Kids did activity Dad observed 45s
:30 2a 2c walked past "Scientists think they listen w/ their feet" "That's really cool!"
:30 1 Teen 2a Teen instructed briefly and let kids do activity - correct 40s
:33 1c approached - did activity solo 40s
:35 2a 40-50s 1c
1a + 1c attempted 35s - other a read panel
:36 1a 4c 40s
A read panel aloud + instructed kids Adult took over humming, kids took turns putting hand in 1:25
:38 1a 3c 40s
1c called over group - Adult read panel in Spanish kids did activity 1:40
:39 Group of 4c - Tapping down cover - no panel reading - joined by adult

:42 2a 1c 40s
1a read - other assistant child
Doing activity 1:15 switched
:54 1a 40s 3c adult read
panel to kids, kids switched
1:15

7/17 12-1 Lion Leap
Mostly cloudy, T-Storms expected
this afternoon
:13 3a 14c camp group
Counselor pointed at lion cut out
to kids 55s
:13 1a 4c 40s
1c running jumps on passing
no read
:15 2a 2c 40s
Child pointed to cut out "Oh great
there's a good photo op" = # -2c
Other adult took pictures at both 2 min
:21 2c stopped + took photo 1c jumped 45s
:22 2a 20s stop/ read panel 35s
:25 2a 60s 2c - stop/read by
adult, both kids jumped 55s
:29 1a 35s 2a kids ran
over to take picture w/ cut out 30s
:30 2a 20s 1c
took pictures w/ cut out 1m
:32 3a 40s-60s 1c stopped + took
picture 50s
:34 Camp grp 4a 9c
3c ran over + fonded cut out
:38 3a/trees stop/read
noticed markings on ground first
1 Adult activity 1:15
:39 2a 40s-60s 1c stop/picture

:39 4a 7c 20s-50s-70s
Stopped and took pictures of 3-
2:25
:40 4a 4c 40s
Stopped + took pic of 1c and 1a
:42 2a 30s 3c
Stopped + took pics of 3c + 1a 45s
:43 1a 40s 2c 1c ran over
and touched cut out
:46 4a 40s-50s-70s 2c
Stopped + took pictures of kids
adults read panel prompted kids
to try activity - they did 3:40
:50 2a 40s-50s 1c stroller
1 adult stop/read panel 1:20
no activity - Walked out 35ft all friend
"That's really impressive, this is about
35 ft..." a-a
:52 1a 30s 2c kids hopped
along 25ft markings - Mom read
part of panel - 25s "That's like 7 of me!"
1 min total engagement

1-2 L&P Mike Soto
Drew Surveys

3-4 LP Zooteens set up in
cave as well - Started raining lightly - 3pm
:18 2a 3c 50s
Oldest child walked over and touched
lion prints ~15s
:32 Zoo camp 2a 12c?
1c approached and read panel 45s
:43 3a 50s-60s
1a sitting on bench reading panel
and looking in case 50s
:45 Zoo camp returned 2c touched
paw casts 35s each

7/28 3-4 BI+A / BP
Very hot, sunny, not many visitors
lots of camp groups here earlier

:03 1a 50s - leaned on case, looking
at enclosure BP
:04 1a 30s read panel, looked through
case, group joined 3a all read panel/case
1a 1:40 group :35s BP
:06 1a 30s BI
Stop/read 1:15
:06 4c BP Camp group
Children stop read, touched case 1:00
:08 1a 1c 50s
Adult read panel, child touched case
took picture 35s

:10 2a 1c 40s BP
child approached, touched cave, adult
read panel 1:30
:07 3c children + Zofteen
read BI panel, talked about baboons
:12 1c stop read 45s BP
:13 1c walking look at cave 20s
:13 1a 50s stop/read, looked at
cave 050s
:18 2ctr playing with geiser 1a 3c 32s
"How do you do this?" child pointed BA
at chasm "I don't know we have to go" Dad
:20 1a 40s 2c BP
adult leaned on cave looking at
enclosure, children compared bands :25s
:21 1c from group stop/read BI
:33 2a 1c 20s-30s BP
Stop read panel 40s
:41 1a 1c touched cave, read BP
panel briefly
:43 1a 3c 2 children BP
approached cave, touched 25s
:43 1a 30s stop read panel BP BA
moved to chasm, moved + grooming pose 05s

7/31
9:30-10 Zero visitors
Elephants walking signs up
have only seen 1 groups :38 2a 2c
:50 Warm, Sunny Clear
lots of visitors expected today
:53 - first visitors to Africa
Entrance

EL 12-1
06 3c 1c 32s
1 adult approached, tapped top
of tube, child attempted activity 35s
:07 2a 3c 60-70s
Adults observed, read panel, children
attempted activity, took turns 1:15
:08 3c 50s
1a walking, glance
:10 2a 3c
2 children approached, then 1a 1c
adult read panel aloud, children took
turns
:12 Camp group 2a 15c
4c walking glance
:14 Camp group 2a 7c
1 child ran over and did activity solo 20s
:14 camp grp 1a 5c
"can we do this?" "This is how elephants hear"
Children read panel, completed activity
1m

:18 3c 2a 50s
1a approached, read panel
children completed activity
45s
:20 1a 4c
3c ran over and attempted
activity 35s
:20 Camp group 1a 5c
Counselor read panel aloud
children completed activity
:22 ~~comp~~ 1a 4c
3c ran over, attempted
activity, 1 did correct, others banging
on tube :50s
:23 2a 60s
completed activity, read panel
40s
:24 Camp group 2a 11c
children hitting tube, Counselor
read panel about, made sounds
for birds
:26 2a stop read, completed
45s
:26 "Oh I love that!" c 2c
ran over, did activity 45s
:27 "Grandma put your hand in there"
1a 2c 60
All completed activity

:27 1a 3c
Adult read panel quickly, children
completed activity 50s
:27 3a 1c 50s
Adults observed, read panel, child
did activity solo
:31 Camp group 2a 9c
"I can feel the vibration," "What's this?"
2c ran over read panel, group joined
c did activity, turns
:32 1a 2c 60s
Kids hitting cover at first, adult read
panel, instructed birds 1:10
:34 2c approached, did activity
:36 1c ran over and did activity
solo 25s
:37 1a 1c
Completed activity, no read 25s
:39 2a 2c 40-
1a 2c attempted, no read, kids
playing
:40 1 ran completed activity 45s
:41 1a 3c
Children completed, took turns 1m
:42 Camp group 9c
attempted activity, using tube as drum
I pointed at panel 6c completed
2:15m

:46 1a 2c 4b

1m 2c completed activity

4B 1c ran over put hand

10s in tube, read part of panel, left

:50 2a 3b

stop read panel ~~complet~~

pair completed activity once 40s

:52 1a 4c

1c ran over, 3c followed

3 completed activity 40s

:52 1a 1c 7b

1c ~~stop~~ put hand in tube

adult observed

:55 camp group 2a 15c

1c went over, tapping on

tube, yelling in wrong hole, "Okay

everyone get off, it's Counselor

1:35m

:54 1a 5c camp

to be giving instructions, read panel

Whole group completed, "Can you feel it?" c

1:25

3-4 2 I

:07 2a 5c 40s

Adult pointed, stop - read no

activity 40s

:05 1a 1c 39s

Child touched cut out

:21 Child walking Glance

:21 2c touched cut out

Group 2a 3c adults took photo

w/ kids

:30 Lion Experience

45 visitors in area

2 kids standing on rock

Stroller blocking panel, adult leaning

on cut out

:41 3c climbing on cut out

:47 2a 2c 40s

Adults took photo of kids

:54 1 adult walking glance