Instructions for Completing the Enrichment Evaluation Form for Behavioral Goal and Duration of Use
Developed by the AZA Behavioral Advisory Group

Purpose of this form

Zoo keepers are committed to providing the animals in their care with enriching opportunities; however, they are typically faced with the challenge of objectively evaluating the effectiveness of the environmental enrichment offered.

The Association of Zoos and Aquariums requires that member zoos “must have a formal written enrichment and training program that promotes species-appropriate behavioral opportunities “(1.6.1). Within this program, it is necessary to document the enrichment offered and the animals’ responses to that enrichment, and then evaluate the degree to which the enrichment was effective in meeting the goal for that item. The AZA Behavioral Advisory Group has developed a form to aid animal care staff in evaluating the effectiveness of an enrichment item in terms of whether the item elicited the behavioral goal from the animal, and for how long. Goals for this evaluation include:

a. Simple to fill out.
b. When asking “did it work” we know what that means, i.e., we know what it is we are evaluating.
c. Designed to allow both qualitative and quantitative methods of evaluation.

In addition to the forms, a Microsoft Excel spreadsheet has been provided with sample data in order to illustrate how to enter data from these forms and conduct simple analyses using pivot tables. A blank template is also included in that file, with the formula included for 100 rows of data. If you have more data, simply highlight the bottom cell with the formula as well as any cells below it that you need to calculate and hit Ctrl D to fill the formula into all highlighted cells.

Filing out the forms

There are two forms: 1 for a single animal, and another for a group of animals that will be evaluated individually, but on the same piece of paper.

The forms are designed to be completed electronically as a Microsoft Word template or printed out and filled out manually. When using the template, a new document opens each time the file is opened and is a fill-in-the-blank format. The document can be saved by using the “Save As” function on the File menu.

These forms are not intended for use every time an enrichment item is offered. Instead, care staff might choose to conduct observations with a particular enrichment item or activity periodically. For example, a new item might be evaluated each time it is offered for the first few weeks after it is approved, and then maybe once per week for a month, and then once per month for several months and then again on a quarterly basis. This should help give care staff an idea of the novelty and effectiveness of the item over time.
Instructions by section

Be sure to fill out all the lines at the top of the form, which are designed to provide background information on the animal and the enrichment item. This information is important for analysis later.

- Line 1: enter the date, enrichment item (the name given by your institution), and the observer’s initials
- Line 2: enter the animal’s house name and species
- Line 3: enter the time the enrichment was given to the animal and the time you started watching and recording observations of the animal with the enrichment
  - Depending on your schedule, this could be anywhere from a few seconds to several minutes (or more) after the enrichment was given, and is important to know for analysis purposes
- Line 4: enter the amount of time you spent observing the animal with the enrichment. This may be anywhere from 5 minutes to 30 minutes (or more or less).

Behavioral Goal Table

- List the specific animals that you will be observing in the far left column (group evaluation form only)
- Check the box of each behavior you hope to encourage (Foraging, Sensory, etc.)
- In the “Occur” column under each behavioral goal, check the “yes” box if the behavior was observed, and the “no” box if the behavior was not observed.
- For each behavior with a check in the “yes” box, write the TOTAL amount of time the behavior was observed during the entire session.
  - This is total time, so the animal may start and stop the behavior multiple times

Specific Behavioral Goal

- List the specific goal you hope this enrichment item will help you achieve. For example, digging to find food for 20 minutes.

Undesirable Behavior

- Check “yes” and then list the specific behavior if this enrichment item is intended to decrease an undesirable behavior such as pacing, hair plucking, etc.
- Provide additional data on the specific undesirable behavior (this will help with future analysis)

Food Element

- Indicate if the enrichment contains food and how quickly the food was consumed
- Also indicate if the animal continued to interact with or went back to the item AFTER the food was gone.

Long Term Use

- Indicate whether the animal returned to the enrichment item later in the day, either to use the item or simply investigate or examine it (or check “Don’t know”/”N/A”).

Indirect Evidence

- If you were not able to observe the animal with the enrichment, or if the animal did not interact with the enrichment during your observation, is there any indication that interaction occurred later on? For example, the item may have been moved to a different location.

Additional Enrichment

- Indicate whether any other enrichment items were offered at the same time and if the animal showed preference for the focal item or another enrichment offered.

Goal Met

- Indicate whether you think the “specific goal” listed above was met and what evidence you have to support your findings.
Pivot Chart Analysis

In the Excel data spreadsheet, click on the **INSERT** menu. Then in the **Charts** section, click on **PivotChart**. You can choose from a pivot chart (graph) only or a pivot chart with a corresponding data table. This choice is a personal preference.

Select the range of data for analysis by either accepting the entire spreadsheet, or using the mouse to choose the columns to include in the analysis. It is easy to select all the data in the spreadsheet and then choose the variables for the analysis from there. Then choose whether to place the pivot chart in a new worksheet, or in the current worksheet under the rows of data. Then click **OK**.

You are now presented with a list of variables for analysis. Click on the variables you’d like to graph. For example, if foraging was a goal, click **For #Min** and then click **Date** (top of the list) and Item. You’ll then see a graph that shows each day a particular item was offered, and how long foraging occurred. If you want to know how soon the animal began to forage, click **For Delay** and that adds a column to the graph showing the number of minutes each day that the animal waited before it began to forage.

To look at how often the behavioral goal was met, click **Item**, then **# Times offered** and then click **Goal met Y/N** (toward the bottom of the list). You’ll then be presented with a graph showing the number of times the goal was met and not met for that item. If you want to know specifically on which dates the goal was met, then click **Date** to add those data to the graph.

In addition to checking the boxes of the variables for graphing, it is also possible to drag them to the various fields to the right of the list. This will populate the graph based on where the variables are dragged, allowing for easy modifications of the graphs. For example, to determine the duration of each goal behavior for each date offered, drag **Item** and **Animal** under the **LEGEND (SERIES)** field. Then drag **Date** under the **AXIS (CATEGORIES)** field. Then drag **For #Min**, **Soc #Min** and **Sen #Min** to the **Σ VALUES** field. The corresponding graph will show each date enrichment was offered and how long each behavior was observed. More detail can be added if desired – for example to determine how often foraging was a goal versus how often it was observed, drag **Foraging** and **For Y/N** to the **Σ VALUES** field. Or to look at how long foraging was observed, drag **For #Min** under **Σ VALUES** field as well.

If at any time the fields list disappears, simply click on the white area of the graph to bring the list back.

**A caution about pivot charts**

The pivot chart is not a statistical analysis. However, it can provide a visual overview of the effectiveness of some of the enrichment goals with just a few clicks. When interpreting graphs, it is important to consider all of the information included in the graph, as well as the information from your data set that is not included. Just because it appears in a graph, does not mean that other factors do not affect the results. For example if we look at the amount of time spent foraging, we must also consider the amount of time spent observing the animals, and whether the animal continued to forage after the observer left. Thus, the graph may not tell the complete story. For additional help with pivot charts, see [https://support.office.com/en-us/excel](https://support.office.com/en-us/excel).