

Exhibiting Math in Science Museums

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Abstract

This thesis reports on a two-year study concerning (a) the status of mathematical exhibits in science museums and (b) the construction and evaluation of a specific math exhibition in a new science Museum in Holon, Israel.

The first part of this study includes a comprehensive review of existing math museums and mathematics exhibitions in science museums around the world. The review includes a summary of the only evaluation study that was found on a math exhibition.

The second part consists of a proposed framework for the categorization and characterization of math exhibits. The objective of this is to assist on the assessment of the potential of each exhibit independently and a priori.

In accordance with the review and the proposed categorization, a math exhibition was designed and constructed in the "Havayeda" science center in Holon. The third part includes a description of two of the exhibits thereof.

The fourth part presents some of the formative evaluation conducted on one of these exhibits. The evaluation includes the analysis of a part of videotape showing the interaction of children with the exhibits. This information served to better understand the possibilities of using the exhibits, to improve them and their labeling, and to design operational guidelines for the museum staff. The evaluation study also assisted in refining the previously proposed framework.