

*D-12*  
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# PEOPLE, PLACES & DESIGN RESEARCH

PROFILE OF MUSEUM VISITORS  
The Children's Museum  
Boston, Massachusetts  
Summer 1986



## PROFILE OF MUSEUM VISITORS

### INTRODUCTION

**RATIONALE:** As part of the evaluation process for the NSF traveling science exhibits, we have been collecting information about the age, sex, and group type of exhibit users. However, in the absence of data about museum visitors as a whole, we have been unable to interpret the age-appeal and other factors for specific exhibits. Therefore, this part of the research and evaluation process focused on a description of museum visitors as an important piece of context for other data about specific exhibits.

**METHOD:** A thorough and scientifically-sampled study of visitors to The Children's Museum was conducted in August. Visitors were interviewed as they exited from the museum; The sampling period was distributed to represent the variety of circumstances and conditions for the summer, including four weekdays and two weekend days (a Saturday and Sunday from different weekends); two sunny/hot days, three partly sunny days, and one rainy day. A total of 506 visitor groups were interviewed, reflecting an acceptance rate of approximately 95%. Recognizing that these data represent the summer season, it will be important to consider a follow-up study during the school year.

**ANALYSIS:** The data were coded, computerized, and tabulated under the supervision of the evaluation consultant for the NSF project (Jeff Hayward of People, Places & Design Research). Analysis of the data revealed highly reliable sampling across all days in terms of variables such as the age of children and the number of children in a group (see graphs in Appendix). Separate data from the museum's attendance figures were used to establish the reliability of the sample in terms of other parameters such as visits by "families" vs. "community groups." With confidence in the sample, this report focuses on the results of the data analysis, emphasizing issues that have special relevance to the NSF project, such as the age, sex, duration of visit, and favorite exhibit.

## FIRST-TIME VISITORS

There were slightly more visitors who were visiting the museum for the first time (55%), compared to those who had visited before (45%). Considering the nature of the summer season, we would expect the percentage of repeat visitors to be higher in other seasons. For the NSF science exhibits, these data suggest that there are many children (and adult visitors too) who are seeing the exhibits as part of a novel experience -- their first visit to The Children's Museum. They may have fewer specific expectations, compared to repeat visitors who know a little more about what they can do here. For first-time visitors, the "image" of a place is a prime influence on their expectations; in this case it might be a disadvantage if people arrived expecting a "play" experience for younger children. However, this is apparently not a problem, as the museum seems to attract a broad audience including a substantial segment of school-aged children.

## AGES OF MUSEUM VISITORS

Slightly more than half of the museum's visitors are children (54%), and almost half are adults (46%). Although the NSF exhibits are intended to promote children's learning about science concepts, it is important to realize that adults are a very large portion of the visitor audience. A graph illustrating the distribution of all visitors is presented as Figure 1, on page 8. (All graphs and tables appear after the text).

A more detailed analysis was conducted to represent the ages of children. This information is useful because the NSF exhibits are often described in terms of their value for school-aged children (ages 6-12), but it has been common speculation at the museum that the majority of children are pre-schoolers. According to the summer sample, the median age of children visitors is 6.5 years, with 47% of the children being 0-5 years old (another indicator of reliability: this figure is 46% during our sampling days, according to the museum's complete attendance data; for the entire month of August the figure was 43%).

A graph depicting the age distribution for children is presented as Figure 2. It is interesting that the 6-9 year-olds represent the single largest group, about 37% of all children. (Note that these age categories are not equivalent, with the first two categories covering a three year range and the remaining categories covering four years each. Still, the strength of the middle category is undeniable.) With this information, it's obviously appropriate that the NSF exhibits can be designed for a school-aged audience and be suitable for use (and pre-testing) at The Children's Museum.

Using the museum's own attendance data, it's reasonable to speculate that this summer audience is considerably older than the school-year audience. In February and March, for example, the majority of children were 5 or under (54% and 59% respectively, compared to only 43% in August).

#### SEX DISTRIBUTION

In the summer season, The Children's Museum attracts a nearly-equal percentage of girls and boys (49% to 51%). This appeal to both sexes also occurred within each age group, as illustrated by the graph in Figure 3. For the purposes of the NSF exhibits, this information is extremely important, because the exhibits are expected to be "non-sexist" by appealing to both boys and girls. The present data will be used as comparative information when interpreting the data for specific exhibits.

#### SIZE OF GROUPS

Visitors to The Children's Museum come in groups -- many of them in groups of 4 or more people (70% of all groups). Clearly, this is a family audience: the median group size is 4.5 persons, with a median of 2.1 children per group (approximately 25% of the groups contained only one child, nearly half of the groups contained two children, and the remaining 29% of visitor groups contained three or more children). A full distribution of the size of groups is presented in Figure 4.

In this sample, 5.6% of the people came in organized groups (e.g., day care or community groups), which compares favorably with the 6.3% of museum visitors who were listed under "Mass. Council Groups" in the museum's regular attendance data for these sampling days. Obviously this percentage is quite low compared to the school-year period; the summer audience is dominated by family groups (see Figure 5). Interestingly, "family groups" do not necessarily mean a single nuclear family: approximately three-fourths of the family groups were from a single family (including adult relatives such as aunts and grandparents), and one-fourth of these groups consisted of two or three families (children from different households).

## DURATION OF VISIT

The duration of a visit to The Children's Museum varies widely, ranging from half an hour to seven hours. However, the great majority of visitors stay for 1.5 to 3 hours (median=2.1 hours), as illustrated in the graph in Figure 6. There was no difference between groups with younger children (5 and under) compared to groups with older children (6 and over); however, groups with BOTH younger and older children stayed for slightly longer visits (different ages need time to see age-appropriate exhibits).

Although this study does not provide data about the duration of use of specific exhibits, it's clear that this museum experience does not fit with the typical research finding that people spend an average of 30-45 seconds at exhibits (such findings have been seen in museums, fairs and exhibitions, nature centers, etc.). Considering the fact that half of the visitor groups stay for longer than 2 hours, we can safely conclude that the exhibits here offer a different kind of experience. The participatory, interactive, hands-on, play-experience philosophy has produced a pattern of use with greater duration, and perhaps a greater opportunity for learning. Two of the NSF exhibits, for example, have an average duration of use of about 6 to 8 minutes. This measure of exhibit use should continue to be monitored.

## FAVORITE EXHIBITS

As part of the interviews with adults as they were leaving the museum, a randomly-selected child in each group was asked about their favorite exhibit (this is NOT the adults' opinions about their child's preferences). A complete tabulation of these answers is shown in Table 1, on page 14.

As a preface to these results, it's obviously useful to know which exhibits are popular (a "favorite" exhibit, or "what you liked the best today"). However, favorite or popular exhibits should not be confused with "successful" exhibits: an exhibit could be successful without being popular, and vice versa.

The climbing structure ("the cage," "the maze," "the climbing sculpture" or "climbing thing") was the most popular exhibit overall, with about 25% of the children saying it was their favorite. This feature of the museum was popular among all ages. Many other exhibits were also mentioned, including Clubhouse, Raceways, Bubbles (only a partial version installed at the time of this study), Playspace, Computers and Waterplay. In all, 27 different features were mentioned.

Children's preferences for exhibits varied considerably according to their age. Although this conclusion may seem "obvious," it must be seen in the context of the museum's philosophy that exhibits are for everyone -- adults as well as children, and so on. For example, only a few exhibits are labelled for age-appropriateness (Playspace, Clubhouse), and indeed these two exhibits show dramatic differences in children's opinions about favorites. For many other exhibits, the pattern of answers indicated that they do appeal to a wide range of ages. Especially interesting for the NSF exhibits is the fact that some exhibits "peak" among 6-9 year olds (e.g., Raceways and Computers); it is also interesting that Bubbles appeals to a broad age range, including children over 10 years old. For an overview comparison of the popularity of exhibits by age group, see the graphs in Figure 7. A full list of children's favorites according to age groups is presented in the appendix.

#### VISITOR COMPLAINTS

It was very clear that visitors enjoyed their experience at The Children's Museum. However, to probe any possible dissatisfactions, we asked what visitors didn't like or what problems they might have encountered. The great majority (76%) expressed no problems, but among the others the comments were quite diverse. On busy days, there were frequent comments about the crowded and noisy conditions; there were also complaints about specific aspects of exhibits, about other visitors, and about building services. A full listing of visitor comments is presented in Table 2, page 16; please use great caution in drawing conclusions from this list, because many comments represent only one visitor's opinion.

#### GEOGRAPHIC DISTRIBUTION OF VISITOR GROUPS

Although it may have less relevance for the NSF exhibits, a detailed audience profile would not be complete without information on where visitors come from. As illustrated in Figure 8, The Children's Museum attracts a national audience with about half of the visitors coming from Massachusetts. Only 5% of summer visitors came from Boston, and an additional 19% came from "greater Boston" (inside route 128); other Massachusetts visitors comprised an additional 30%, bringing the Massachusetts total to 54% of the summer audience. More than one-fourth of the sample came from outside New England.



Most of the local visitors (Boston and greater Boston) had visited the museum before (74%) and some were visiting for the first time (26%). However, visitors who did not live in the local area were more likely to be visiting for the first time (62%) rather than being a repeat visitor (38%).

Weather conditions and weekend-weekday differences did affect the composition of the visitor audience, especially among groups who might come on day trips. Across six sampling days, the percentage of "other U.S." visitors was nearly identical, but the percentage of visitors from greater Boston and Massachusetts varied widely.

### FUTURE AUDIENCE PROFILES

Considering the interest expressed by several departments of the museum, this research provides a useful and necessary perspective on the composition of the visitor audience. However, it should not be regarded as a one-shot study; obvious seasonal variation suggests that additional data should be collected by the museum to allow future analysis and monitoring of the audience. Therefore, the following strategies are recommended to continue this initiative.

1. ASK FOR ZIP CODE: As visitors are admitted at the front desk, a staff person should ask each group for a zip code (representing the children of the group). The code should be entered in the computer along with group size and type.
2. RECORD GROUP SIZE: As the front desk receives information about the number of children and adults in a group, the data should be stored in a format which would allow tabulations by: number of children per group and total group size. (Unfortunately, this method will underestimate the number of multi-family groups, as parents from different households are likely to pay separately. In any case, the data will be valid for many purposes.)
3. INVESTIGATE THE AGES OF CHILDREN DURING THE SCHOOL YEAR: Considering the importance of the age distribution of children at the museum, this summer sample should not be the only source of information. During the school year, the front desk should be required to ask about the ages of children in every 10th group (presumably, the computer program could be modified to ask for and record this information). This procedure could be used for ten sampling days in a designated month; it would not have to be done continuously. During this same sampling period, the tally sheets for organized groups should be modified to ask for actual ages of children, rather than general age categories.

4. DO A BRIEF STUDY OF VISITOR EXPERIENCES DURING THE SCHOOL YEAR. For 8 to 10 days during a selected month, use volunteers, interpreters, or other staff to interview visitors as they leave the museum (interview only one person per group). These interviews can be extremely short, emphasizing these questions: how long was your visit? what didn't you like here? and for one of the children in the group, what did you like the most? (record the age and sex of the child who was asked). To aid in the tabulation and interpretation of these questions, other information would be extremely useful, including: where do you live? have you ever been here before; and also the type of group (family, multiple family, school group, community group, other). A draft of a simplified interview form is included in the appendix to this report.

How often should an audience profile be done? It depends on how much the audience varies from season to season. Obviously, the summer is different from the school year, but how different are the seasons of the school year? Unless there is a strong need to profile specific periods, it seems sufficient to select only one sampling period during the school year.

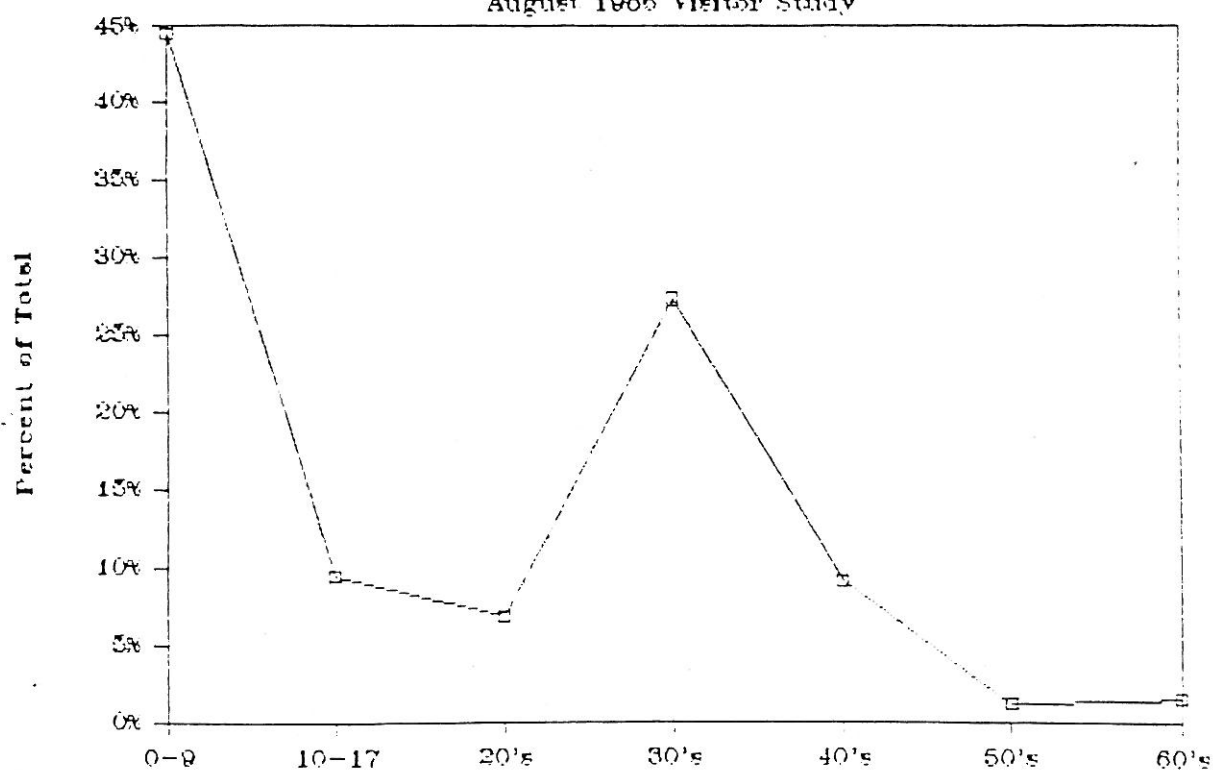
With these new procedures (using the front desk to record zip codes and group size, designating a sampling month for the school year, interviewing randomly selected visitor groups), the museum will have an ongoing planning tool for understanding its audience. This information could be used in exhibit development, marketing and promotion, as well as accountability for grants and fund-raising.



FIGURE 1

## AGE OF MUSEUM VISITORS

August 1986 Visitor Study

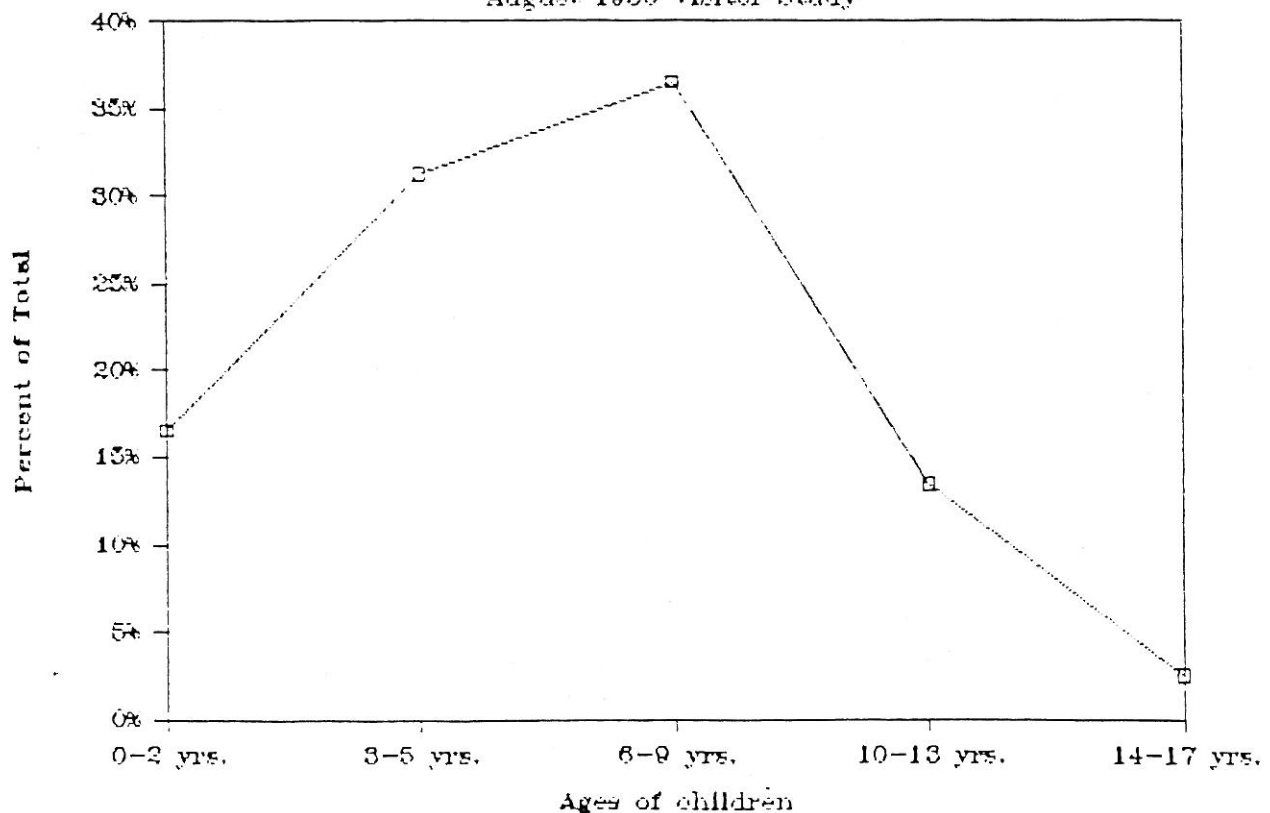


This graph illustrates the ages of the museum's visitors; the pattern shows a 'family audience' -- adults in their late 20's to mid-40's, and young children.

FIGURE 2

## AGES OF CHILDREN

August 1986 Visitor Study

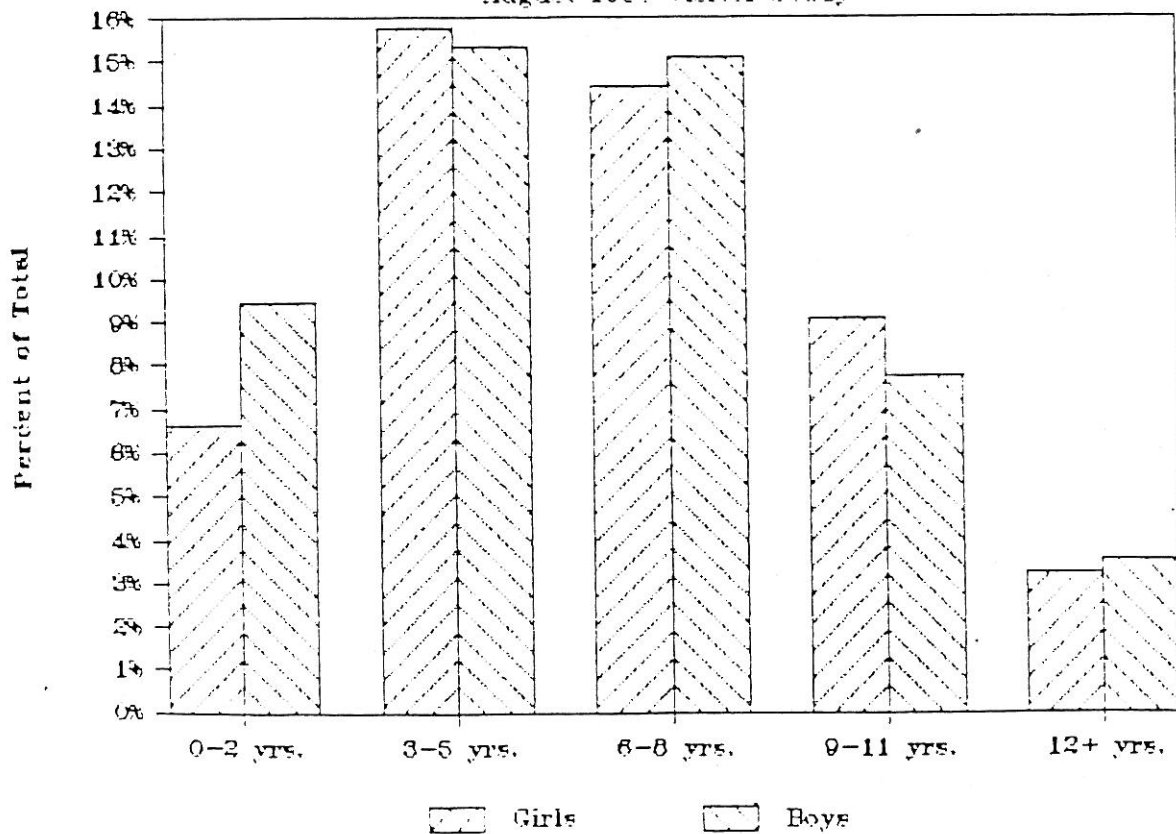


This profile of the ages of children indicates that the most common ages are between 3 and 9 years old. In this summer sample, the median age of children visitors was 6.5 years. Other data from the museum's attendance figures indicate a younger median age during the school year.

FIGURE 3

## DISTRIBUTION OF SEX BY AGE

August 1986 Visitor Study

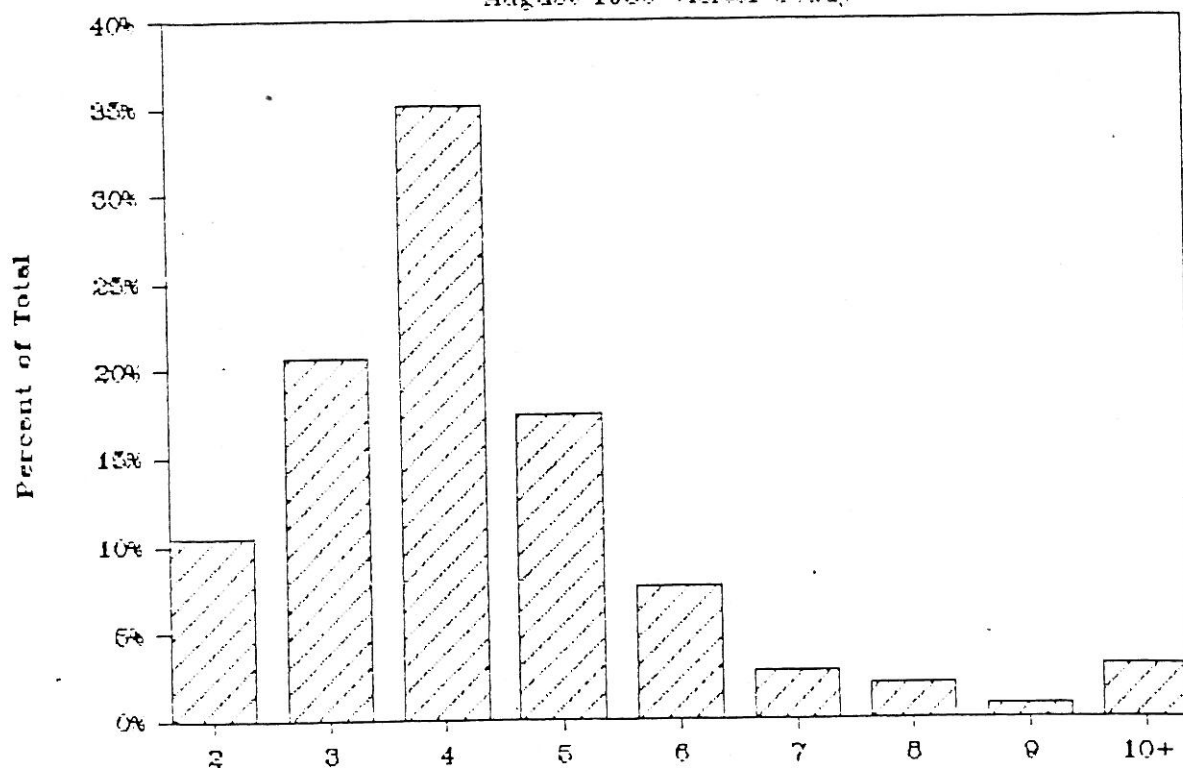


This graph shows a nearly-equal distribution of boys and girls in each age group. Overall, this sample suggests that the visitor audience consists of 49% girls and 51% boys.

FIGURE 4

## SIZE OF VISITOR GROUPS

August 1986 Visitor Study

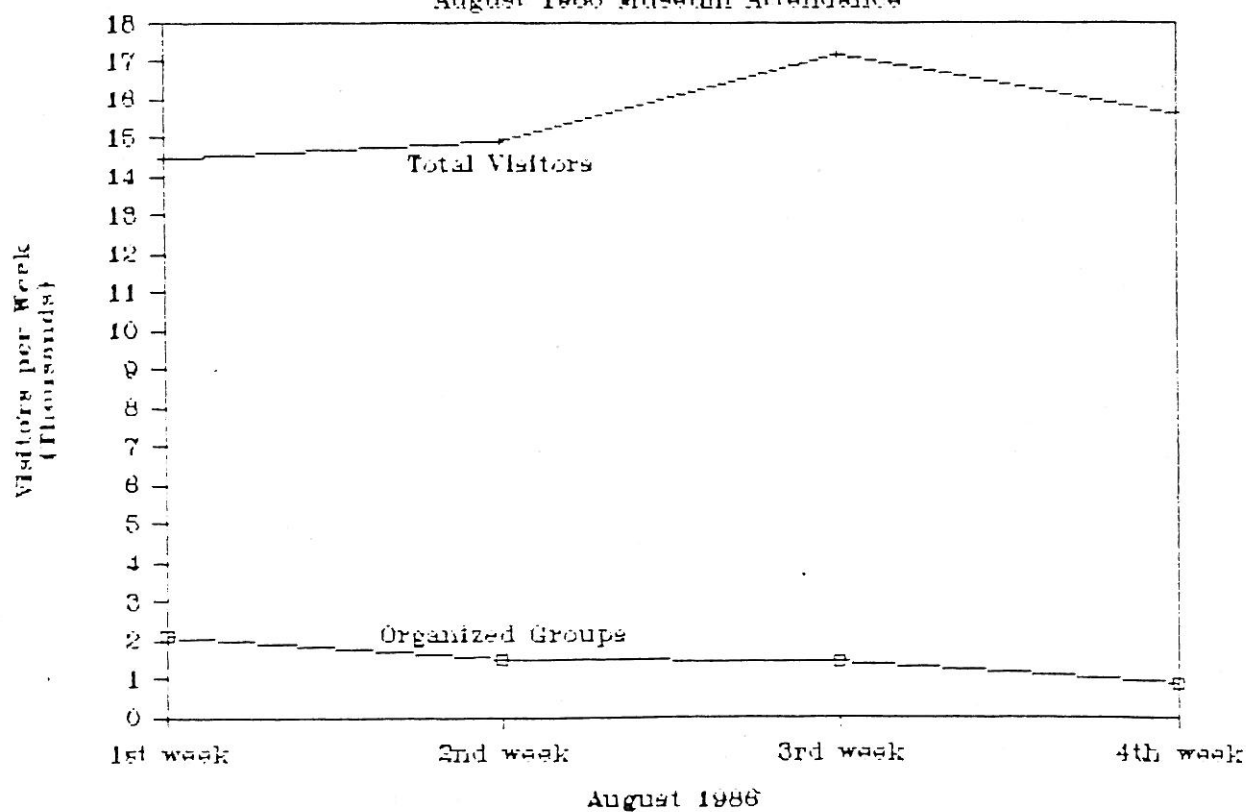


During the summer, this research indicates that family groups are dominant, with a median group size of 4.5.

FIGURE 5

## GROUPS vs. TOTAL VISITORS

August 1986 Museum Attendance

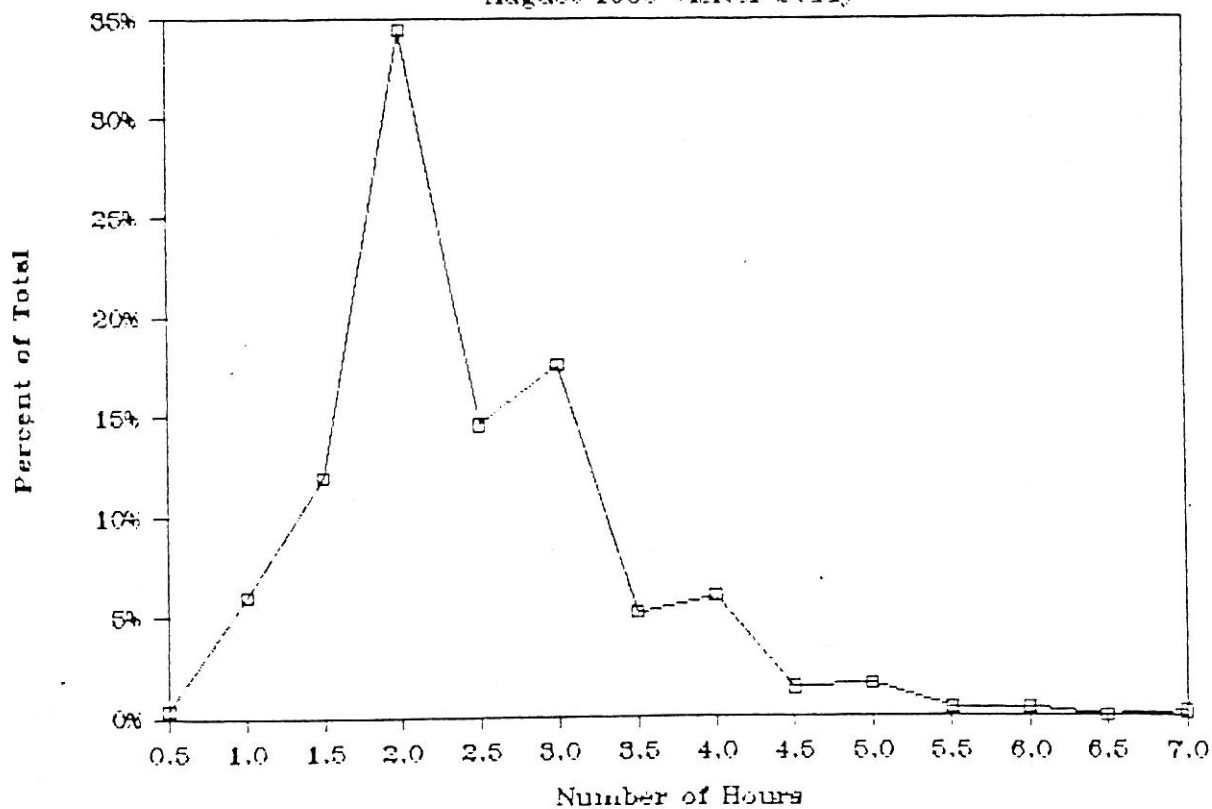


This graph illustrates the proportion of organized groups in comparison to the total museum audience. The data are based on weekly museum attendance figures in a form which can easily be compared to other months of the year.

FIGURE 6

## HOW LONG IS A VISIT?

August 1986 Visitor Study



The duration of a museum visit varies from a half hour to seven hours, but most visitors spend between 1 1/2 to 3 hours. The median visit duration was 2.4 hours.



What was your favorite thing to do here?

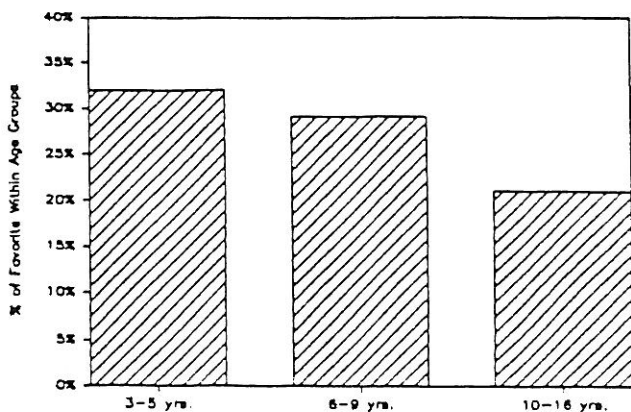
TABLE 1

Climbing Sculpture	26%
Clubhouse	10%
Raceways	8%
Bubbles	8%
Playspace	8%
Computers	7%
Waterplay	5%
Grandma's House	3%
Dollhouses	3%
Japanese House	3%
Factory	2%
Manhole	2%
Zoetrope	2%
Giant's Desk	2%
Everything	2%
Legos	2%
Mechanic Shop	2%
Recycle	1%
Living Things	1%
Museum Shop	1%
Supermarket	1%
Indian House	*
Tops (try-out)	*
WKID	*
Chinese Checkers	*
Mirrors	*
Nothing	*
Resource Room	*
Rubber Stamps	*

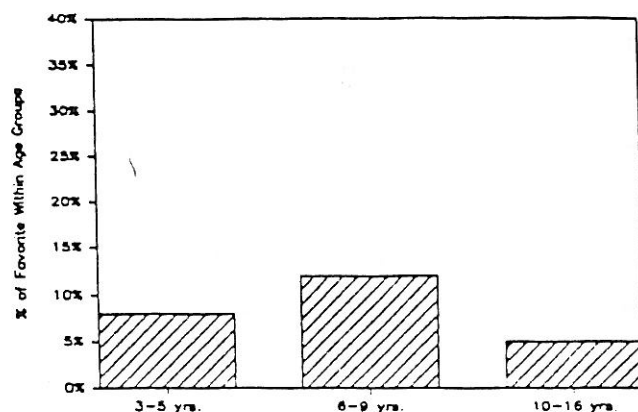
\* less than 1%

FIGURE 7

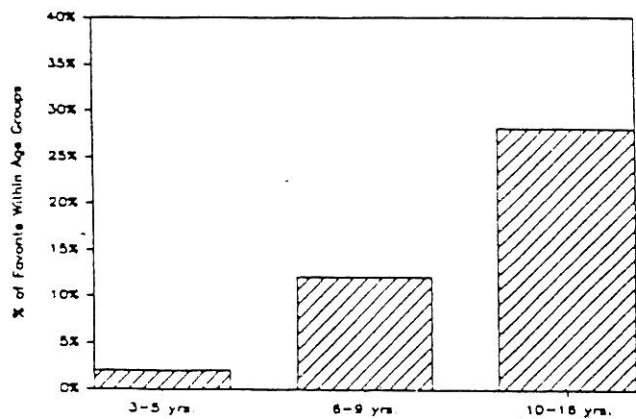
## "CLIMBING CAGE" IS FAVORITE



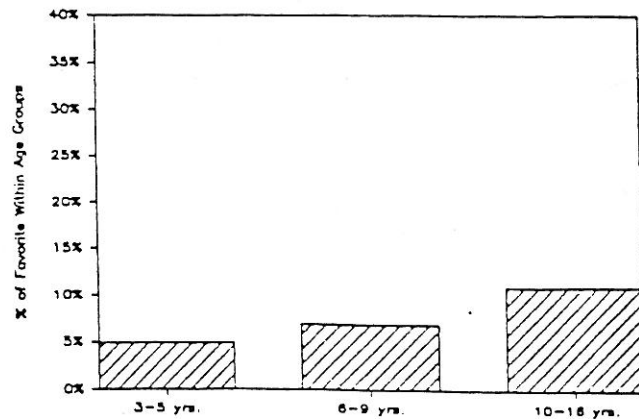
## "RACEWAYS" ALSO POPULAR



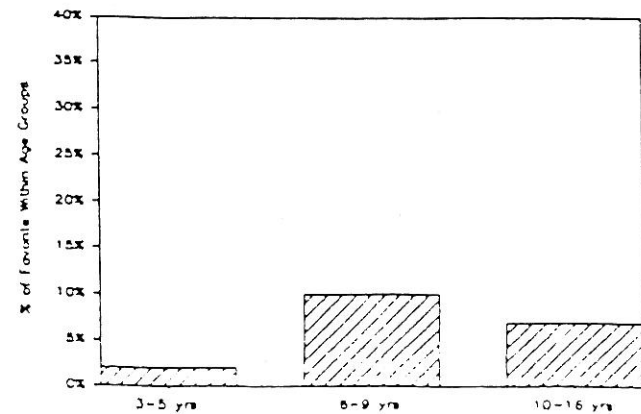
## "CLUBHOUSE" A HIT



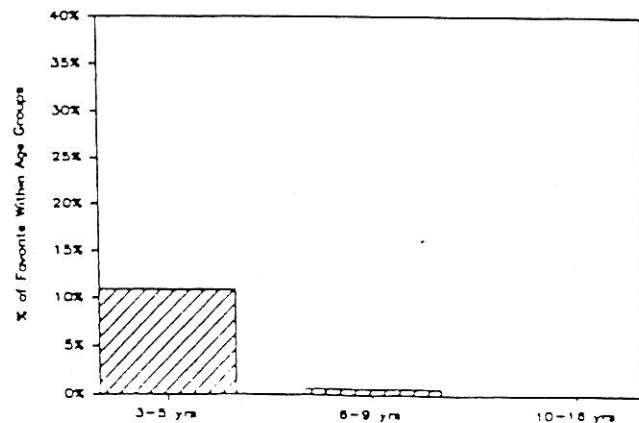
## ALL AGES LIKE "BUBBLES"



## SCHOOL AGE KIDS LIKE "COMPUTERS"



## "PLAYSPACE" FOR YOUNGER KIDS



## WHAT DIDN'T YOU LIKE?

TABLE 2

GENERAL

crowded [29]  
noise [4]  
lines at exhibits [2]  
large groups - hectic  
parking [10]

EXHIBITS

some exhibits closed [14]  
lots of little kids in the Clubhouse [4]  
Playspace closed to older kids [2]  
not enough golf balls in raceways [2]  
clothing in Grandma's Attic in disrepair/more clothing needed  
supermarket needs attention  
fruits in store missing  
sewer too little  
Indian exhibit boring  
6 yr. old's feelings hurt by not being able to go in Clubhouse  
need more space for Legos; bins too deep  
structure of house inaccurate  
need time limit in computer room  
having to take turns in the car  
Toddler Playspace  
Waterplay  
Resource Room never open

seems unstructured  
poor staffing at Factory  
Manhole and Japanese House need more supervision  
supervision is loose  
not enough guidance

geared too young [4]  
need more for little ones [3]  
seems to be a gap in age appeal  
no special area for 5-9 yr. olds  
limited age span: 7-10 yrs. old  
need more for 10-11 yr. olds  
expected more for 6 yr. olds  
12 yr. old didn't get much out of it

Japanese House used to have a display and explanations that  
made it more interesting  
miss the handicap exhibit  
miss the doctor and dentist exhibit  
missed having any kind of performer

could use more change  
would like more 'hands-on' [4]  
didn't like non-'hands-on'  
would like to see a train exhibit  
thought there'd be animals

Continuation of: What didn't you like?

**TABLE 2. CONTINUED**

INTERPRETATION

need more information about the activities  
more explanations so it can be explained to kids  
need more information, better explanations  
there's no one to answer questions

VISITORS

adults don't control their own children  
other parents pushing  
some unsupervised older children  
too many kids running wild  
  
larger kids dominate many areas  
little kids couldn't get access  
older kids butting in front of little ones  
places where older kids mixed with younger ones  
  
the kids  
the little kids

PHYSICAL ENVIRONMENT

bathrooms: inadequate, out of order [2]  
too warm [2]  
long wait to get on elevator  
no elevators  
too many stairs  
not enough places to sit  
wasn't totally accessible (daughter on crutches)  
daughter fell on stairs by Bubbles  
should give you a floor plan to take with you

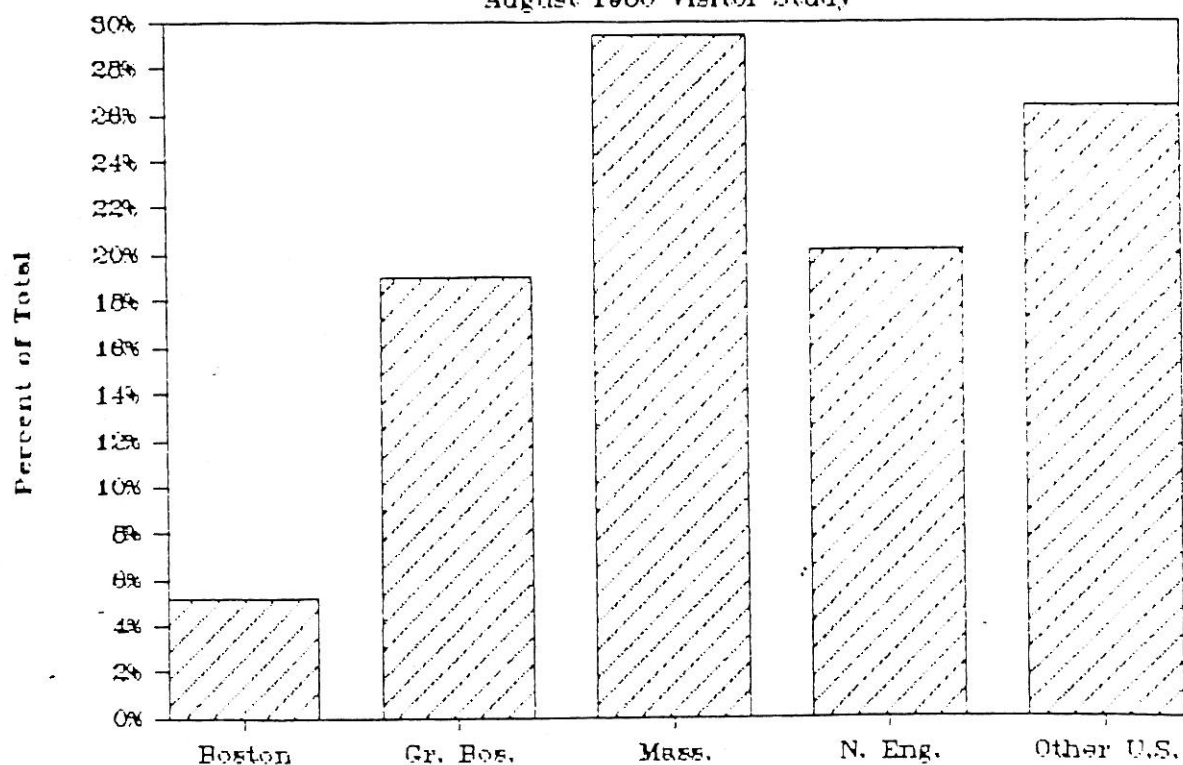
MISCELLANEOUS

closing time is too early  
insufficient supplies  
keep the 'help' off Pac-Man  
wish had information about age range [of museum]  
the whole thing - there was nothing unique; simple  
  
someone took son's coat from rack  
couldn't find the place  
traffic  
transportation  
McDonald's was a zoo  
restaurant

FIGURE 8

## WHERE DO VISITORS COME FROM?

August 1986 Visitor Study



The Children's Museum attracts a regional and national audience. In the summer, only about one-fourth of the audience lives inside the Route 128 circle.

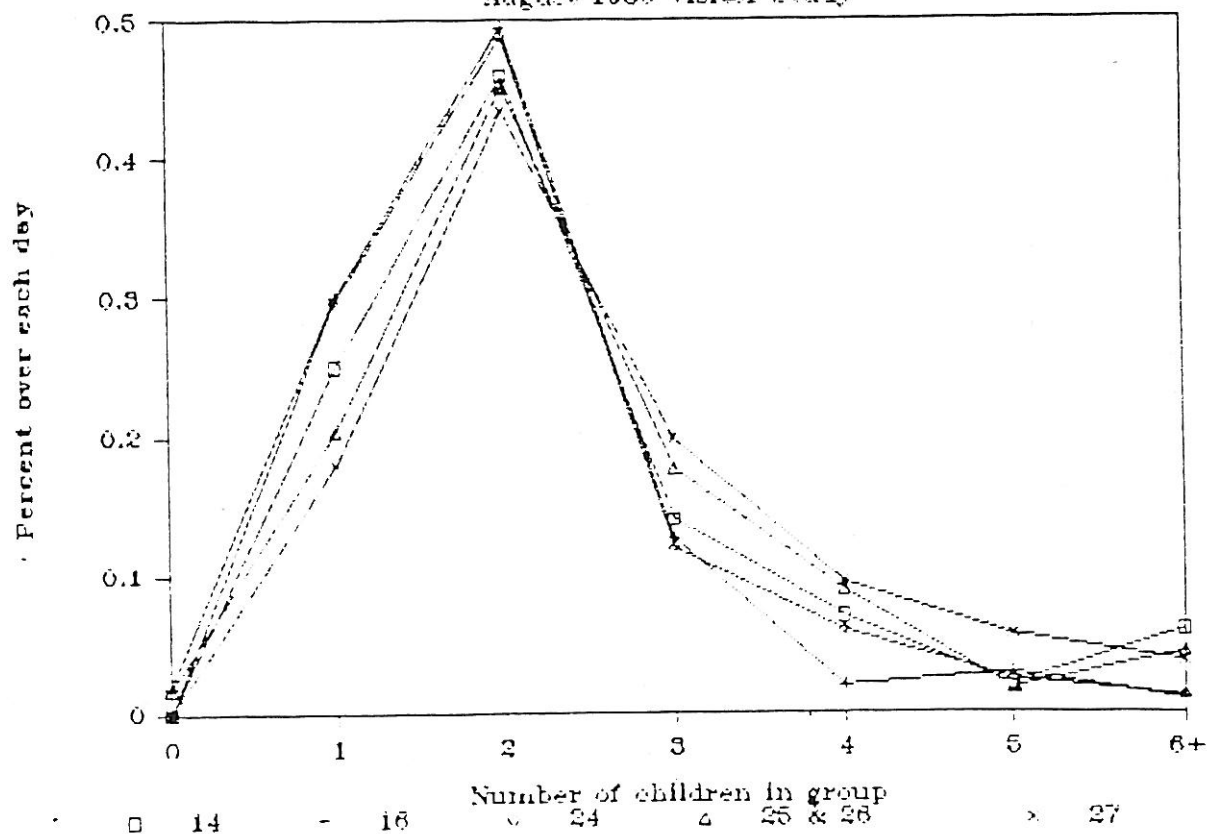
## APPENDIX

Reliability: Number of Children . . . . .	1
Reliability: Ages of Children . . . . .	2
Reliability: Where Visitors Come From . . . . .	3
Interview Form . . . . .	4



## RELIABILITY OF SAMPLING DAYS

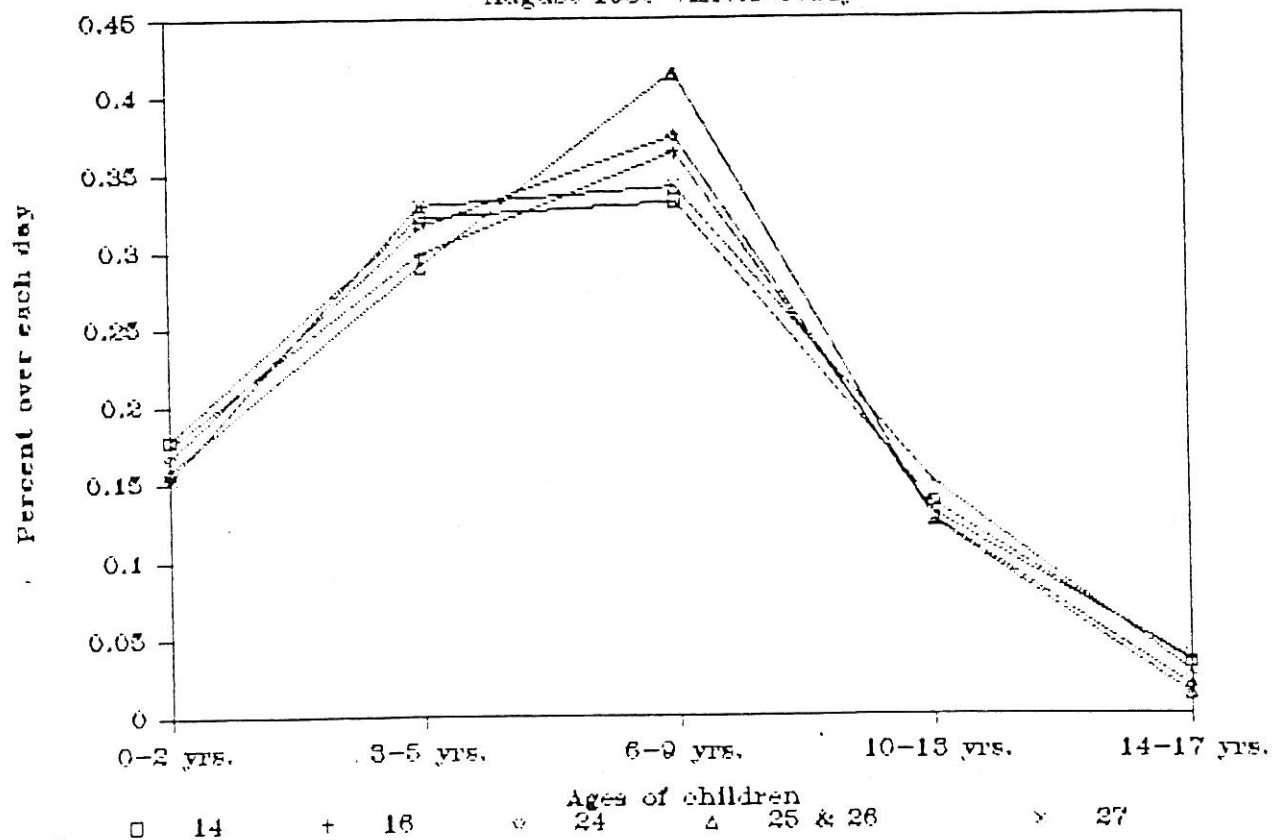
August 1986 Visitor Study



This graph demonstrates the high reliability of sampling in this research. Each line on the graph represents a separate day, and the similarity of the lines indicates that similar data was obtained on different days.

## RELIABILITY OF SAMPLING DAYS

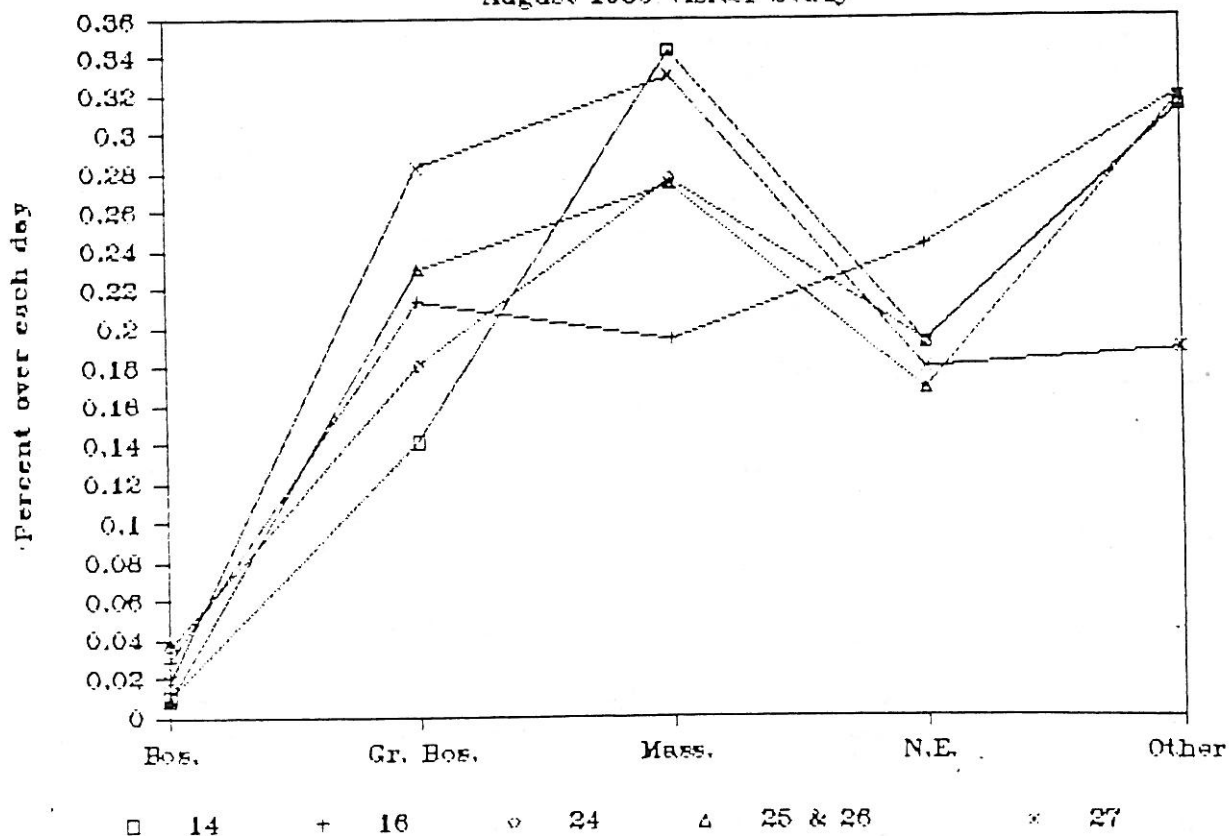
August 1986 Visitor Study



In this graph, similar lines (from different days) indicate high reliability of the sampling.

## RELIABILITY OF SAMPLING DAYS

August 1986 Visitor Study



During different days of the research, there were minor variations in where visitors came from. Although the percentage of visitors from outside New England ("other U.S.") was nearly the same, the appeal to local and regional visitors was affected by weather and by weekend vs. weekdays.

BOSTON CHILDREN'S MUSEUM  
Exit Interview

August 1986  
Visitor Survey

Hi, I'm working with the Children's Museum and we'd like to know more about our visitors. May I ask you some short questions about your visit?

1. Have your (these) children been here before? ☐ yes ☐ no

IF YES: How many times a year do you come to the museum?  
☐ # times per year (☐ # prior visits)

Are you a member? ☐ yes ☐ no

2. Whose idea was it to visit the museum today?  
☐ adult's ☐ child's ☐ both ☐ other: \_\_\_\_\_

3. How many adults and children are there in your group?

☐ adults ☐ children

4. What are the ages of the children? ☐ ☐ ☐ ☐ ☐  
Which are boys, which are girls? ☐ ☐ ☐ ☐ ☐

(If a large group, get an approx. # by age, e.g., # of 7's & 3 of 6's  
and sex, e.g., # of boys, # of girls)

5. How many hours did you spend here? ☐ hours

6. Did you ☐ drive today ☐ > Where did you park? \_\_\_\_\_  
or ☐ take public ☐ > Which one? \_\_\_\_\_  
transportation?

7. What DIDN'T you like here? (anything that disappointed you?)  
\_\_\_\_\_

8. [Randomly select a kid in the group] age  
What was your favorite exhibit today? \_\_\_\_\_ sex \_\_\_\_\_

9. Could I have your \_\_\_\_\_  
name and address? \_\_\_\_\_

If NO, ask for town: \_\_\_\_\_  
(zip)

☐ Male ☐ Female Age: teen 20's 30's 40's 50's 60's 70+

Group: ☐ # of families ☐ school ☐ camp/community rec. program  
☐ other: \_\_\_\_\_