Assessment Summary I (Pre-test/Post-test)

The participants for this portion of the results consisted of 10 Access classes (students who received free admission) and 17 additional classes for a total of 27 classes. Those students in the Access classes were all from elementary schools (grades 3-5) with the addition of one other class for a total of 11 elementary classes (41%); and, those students in the remaining classes were from middle schools (grade 6-8) for a total of 16 middle classes (59%). The Access classes along with one additional class participated in the program, Our Place in Space and the remaining classes participated in the program, Active Atmosphere. Classes that had incomplete pre and post-test data were not included in the assessment summary. The assessment tool used was the Classroom Performance System by E-Instruct. Participating students used wireless response pads to answer multiple choice and True/False-style questions. Students who participated in the Journey to Earth (grades 1-2) class were not assessed using the Classroom Performance System.

Question: What was the average pre-test class point score for all classes? For Access classes (those with free admission)?

When examining the pre-test class point scores for all classes (N=27), it was determined that the average score was 53.57%, ranging from 40.48% to 72.73%. For those students who received free admission (the Access classes), the average pre-test class point score (N=10), was 53.40%, ranging from 40.48% to 61.05%.

Question: What was the average post-test class point score for all classes? For Access classes (those with free admission)?
When examining the post-test class point scores for all classes (N=27), it was determined that the average score was 70.11%, ranging from 52.86% to 90.00%. For those students in the Access classes (N=10), the average post-test class point score was 66.61%, ranging from 52.86% to 77.37%.

**Question:** When comparing pre-test and post-test class point scores was there a significant difference in scores (either positive or negative)?

When comparing pre-test and post-test class point scores for the whole group (N=27), the average pre-test % was 53.57 and the average post-test % was 70.11, yielding a % difference of +16.54. While this % difference is positive, it was also found to be statistically significant. When a correlation was performed, the pre-test and post-test were significantly correlated at the 0.01 level (p=.01), meaning that the tests measure the same concepts. Further, the results of a T-test yield significance at the .001 level (p<.001***), meaning that for the whole group the difference between the pre-test average score and the post-test average score was statistically significant. The T-test was chosen because it assesses whether the mean (average) of two groups are statistically different from each other.

When comparing pre-test and post test class point scores for the Access group (N=10), the average pre-test % was 53.40 and the average post-test % was 66.61, yielding a % difference of +13.21. While this % difference is positive, it was also found to be statistically significant. When a correlation was performed, the pre-test and post-test were significantly correlated at the 0.05 level (p<.01**), meaning that the tests measure the same concepts. Further, the results of a T-test yield significance at the .001 level.
(p<.001***), meaning that for the Access group the difference between the pre-test average score and the post-test average score was statistically significant.

**Question:** What was the average increase or decrease in class point scores for the whole group? What was the average increase or decrease in class point scores for the Access group?

As previously mentioned, there was an average increase of +16.54% in class point scores for the whole group and an average increase of +13.21% in class point scores for the Access group.

**Question:** What percentage of classes showed improvement based on a significant increase in class point scores? Specifically, what percentage of classes showed at least a 10% increase in class point scores?

When considering the percentage of classes that showed at least a 10% increase in class point scores, overall 85% of the classes showed an increase of at least 10% or greater, ranging from 10.48% to 26.66%. More specifically, for the Access group 70% (N=10) of the classes showed at least a 10% increase in class point scores, ranging from 12.38% to 24.58%. For the remaining classes (N=17), 94% of the classes showed at least a 10% increase in point scores, ranging from 10.48% to 26.66%.
Assessment Summary II (Visitor/Public Survey)

*Earth and Beyond*

Descriptive statistics for the *Earth and Beyond* Program yielded the following: 10.3% of participants attended on Monday, 7.7% attended on Wednesday, 25.6% attended on Thursday, and 56.4% attended on Friday (N=39). In addition, participants were asked a series of general and content questions and were asked for additional questions/comments. The results indicated that 100% of the participants felt that the Science on a Sphere enhanced their visit to the McWane Science Center; 100% agreed that the Science on a Sphere images made a complex topic more understandable; 82% (17.9% missing) felt as if they learned/gained knowledge during their visit to the Science on a Sphere; and, 97.4% agreed that they would visit the Science on a Sphere exhibit again.

In regard to content questions, 100% of participants stated that Earth was NOT the only planet that has polar ice caps and 100% of participants stated that the Great Red Spot on Jupiter was NOT a crater.

Additional questions/comments included very well presented (knowledgeable presenter); fantastic, cool; see through version (transparent); add or change signs to show where SOS is located; I love this! So, so, etc. cool!; I love this exhibit but the problem I
have is the sound. I can never hear the sound due to all the surrounding noise. I think it would capture the children’s attention if they could hear.

*Journey to Mars*

Descriptive statistics for the *Journey to Mars* Program yielded the following: 45% of participants attended on Tuesday, 32.5% attended on Wednesday, and 22.5% attended on Saturday (N=40). In addition, participants were asked a series of general and content questions and were asked for additional questions/comments. The results indicated that 95% (5% missing) of the participants felt that the Science on a Sphere enhanced their visit to the McWane Science Center; 100% agreed that the Science on a Sphere images made a complex topic more understandable; 97.5% felt as if they learned/gained knowledge during their visit to the Science on a Sphere; and, 100% agreed that they would visit the Science on a Sphere exhibit again.

In regard to content questions, 92.5% of participants stated that Mars is tilted on its axis, while 7.5% answered no; and, 67.5% of participants stated that Mars is NOT called the Red Planet because of its temperature, while 32.5% answered yes.

No additional questions/comments were reported from this group of participants.

*General Question Only*

Descriptive statistics for the *General Question Only Survey* yielded the following: 18.2% of participants attended on Monday, 54.5% attended on Tuesday, 9.1% attended on Wednesday, and 18.2% attended on Friday (N=22). In addition, participants were asked a series of general questions and were asked for additional questions/comments. The results indicated that 100% of the participants felt that the Science on a Sphere enhanced their visit to the McWane Science Center; 100% agreed that the Science on a
Sphere images made a complex topic more understandable; 100% felt as if they learned/gained knowledge during their visit to the Science on a Sphere; and, 100% agreed that they would visit the Science on a Sphere exhibit again.

In regard to content questions, 100% of participants stated that Earth was NOT the only planet that has polar ice caps and 100% of participants stated that the Great Red Spot on Jupiter was NOT a crater.

Additional questions/comments included “this sphere is really cool! I wish I had one at home” and “I want one for my birthday”.