The Reinforcement Science Skills Project of the Cleveland Public Schools is designed to meet the science education needs of urban elementary and junior high school students. The project provides specially designated materials and teacher training in their use at selected and inservice sessions for teachers in nontargeted schools. Results at the elementary level in 1982-83 indicate that (1) 65.2 percent of fifth graders in the selected schools showed a pre-posttest gain of 10 percent on a locally developed test measuring understanding of physical science concepts; (2) although responses to the inservice sessions for teachers from the selected schools were positive, they fell short of the objective level of 80 percent; (3) at least 80 percent of the elementary science teachers in grade 5 who took part in a series of inservice workshops rated them as successful; and (4) elementary science teachers in the nontargeted schools received appropriate inservice training. Results at the secondary level show that students at the selected schools did not attain the targeted gain of a pre-posttest measure of their achievement; junior high school teachers received appropriate inservice training; and the inservice training was judged by at least 80 percent of those receiving it to be successful. (CMG)
1982-1983
FINAL EVALUATION REPORT

Prepared by
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Evaluator

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Cleveland Public Schools
RESEARCH AND ANALYSIS DEPARTMENT
July, 1983
REINFORCEMENT SCIENCE SKILLS PROJECT
1982-1983 DPPF Final Evaluation

PURPOSE AND OVERVIEW

The Reinforcement Science Skills Project is designed to meet the science education needs of the urban student at the elementary and junior high school level. The provision of specially designed materials and teacher training in their use is the primary approach utilized to enhance the science curriculum for students in selected schools in grades 1 through 8. Also inservice sessions for teachers in non-targeted schools is provided.

SERVICE SUMMARY

Pupils Served: 6800 elementary
1000 secondary
Grades: 1-8
Years in operation: 15
Schools: 87 elementary
23 junior highs
109 total
Staffing:
1 Project Manager FT
2 Consultant Teachers FT
2 Clerks FT

TOTAL DPPF Expenditures: Per Pupil Cost:

SUMMARY OF FINDINGS

The four elementary and three secondary objectives of the Reinforcement Science Skills project for the 1982-1983 academic year provided for the enhancement of the delivery of science instruction to students for grades 1 through 8 through the provision of materials and teacher training in the area of science instruction. Grades 5 and 7 were targeted (in selected schools) for the SCIS II Energy Sources Kit and the Life Science Kits for the intensive services while all schools availed themselves of inservice consultation and workshop activities.

At the elementary level, two objectives were partially attained while two were completely attained. The project's one product objective achieved well above the targeted gain score (18.30% as opposed to 10.0%) yet the targeted gain was only achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved insofar as the targeted response level was narrowly missed. The provision of consultative service for the "non-concentrated" school was successful.

At the secondary level, one objective was not achieved while two were achieved. Students at the five schools chosen to participate in the concentrated service aspect of the project did not attain the targeted gain of a pre-post measure of their achievement. The provision of teacher training through workshops and consultative visits were very successful for secondary project participants.
OBJECTIVES AND OUTCOMES

Objective 1: At least 75% of the grade five children in the 15 schools receiving concentrated services will show a pre-post gain of 10% on a locally developed test measuring understanding of physical science concepts (as result of using the SCIS II--Energy Source Lab.)

Outcome: The objective has been partially achieved.

The recipients of the concentrated inservice and implementation assistance were identified prior to the end of the first semester. A list of schools participating in the SCIS II Energy Sources Labs is contained in Appendix A.

In January, 1983, testing materials and instructions were distributed to project teachers in the 15 selected schools for pre-testing. Teachers administered the pre-test during the first week of the second semester to provide data for the assessment of the first objective. Approximately 1150 fifth grade students were tested at the start of the SCIS Energy Sources Lab project which operated throughout the course of the second semester.

During the seventeenth week of the second semester, the locally developed post-test was administered to 783 project students. A pre-to-post test matching procedure yielded a sample of 687 matched record for assessment of the objective. Table 1 contains a summary of the test results. While the entire test sample evidences a pre-to-post mean score gain of 18.30 percent (well above the objective 10 percent) the frequency distribution of individual performance indicates that 65.2 percent of the sample tested gained 10% or more percent on pre-to-post test administrations during the project duration.

<table>
<thead>
<tr>
<th>TEST</th>
<th>N</th>
<th>MEAN SCORE</th>
<th>GAIN</th>
<th>Percent of Sample Gaining 10.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post</td>
<td>687</td>
<td>62.60</td>
<td>18.30</td>
<td>65.2</td>
</tr>
</tbody>
</table>

Objective 2: At least 80 percent of the Grade 5 teachers receiving concentrated inservice and implementation assistance for using SCIS--II Energy Sources Labs will state that the:

"hands-on" approach has value for teaching science to disadvantaged students.
...inservice has prepared them to use the SCIS II Energy Source lab in their classroom with students.

...inservice methods and implementation assistance were comprehensive and appropriate.

Outcome: This objective was partially attained.

Project teachers in the fifteen schools selected from the poverty eligibility list did receive concentrated preservice and project implementation assistance on January 11, 1983 (See Appendix A for a list of the participating elementary schools).

The preservice session was attended by 34 teachers who reacted to the session as reported on Table 2. (A copy of the reaction sheet is contained in Appendix B.)

### TABLE 2

<table>
<thead>
<tr>
<th>ITEM</th>
<th>RESPONSE TOPIC</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clarity of purpose</td>
<td>4.79</td>
</tr>
<tr>
<td>2</td>
<td>Content understandable</td>
<td>4.97</td>
</tr>
<tr>
<td>3</td>
<td>Sufficiency of time</td>
<td>4.91</td>
</tr>
<tr>
<td>4</td>
<td>Opportunity to interact</td>
<td>4.66</td>
</tr>
<tr>
<td>5</td>
<td>Effectiveness of discussion</td>
<td>4.63</td>
</tr>
<tr>
<td>6</td>
<td>Acquisition of new knowledge</td>
<td>4.65</td>
</tr>
<tr>
<td>7</td>
<td>Practicality of Information</td>
<td>4.71</td>
</tr>
</tbody>
</table>

The immediate response to the preservice session was most favorable. However, to address the specific issues identified in the stated objective, a survey of project teachers was conducted at the project's conclusion concerning the three aspects of the SCIS II Energy Sources Labs mentioned above.

Table 3 illustrates the summary of responses to the project teacher survey. A copy of the survey instrument is included in Appendix D.
TABLE 3
Project Teacher Responses to the Three Stated Objective Items
(N=27)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Yes responses (%)</th>
<th>NO responses %</th>
<th>Did not Respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>The SCIS II &quot;hands on&quot; approach is of value for teaching science to disadvantaged students.</td>
<td>24 (89)</td>
<td>0 (0)</td>
<td>3 (11)</td>
</tr>
<tr>
<td>The inservice prepared use the SCIS II kits in your classroom.</td>
<td>21 (78)</td>
<td>2 (7)</td>
<td>4 (15)</td>
</tr>
<tr>
<td>The inservice methods and implementation assistance were appropriate and comprehensive.</td>
<td>20 (74)</td>
<td>3 (11)</td>
<td>4 (15)</td>
</tr>
</tbody>
</table>

The responses stated above indicate a most favorable reaction to the SCIS II kit for use in the elementary classroom and to the inservice sessions. Responses to the inservice sessions and the methods used in the sessions were most positive, however did fall short of the objective 80 percent level.

Objective 3: 80% of the teachers of elementary science in grade 5 who participated in a series of inservice workshops on instructional techniques for classroom use and continuing supplementary materials will assign these workshops a rating of a least 4 on a 5 point scale measuring adequacy of the information, practicality of the information, opportunity for participation etc.

Outcome: This objective has been achieved.

Sixteen workshops were conducted during the 1982-83 academic year. The location, participation, and reaction records for each of these workshops is summarized in Table 4. (A copy of the evaluation form is contained in Appendix B.)

An analysis of the Mean Response values for each session and in total indicates that the objective has been achieved. Individual item response means and standards deviations were computed for each meeting. These values (though not reported here) would indicate that 80% or more of the respondents rated the sessions with at least 4 on a 5 point scale.
<table>
<thead>
<tr>
<th>DATE</th>
<th>SCHOOL</th>
<th>Clarity of Purpose</th>
<th>Understand Ability</th>
<th>Sufficiency of Time</th>
<th>Discussion Effectiveness</th>
<th>Acquisition of New Knowledge</th>
<th>Practicality of Information</th>
<th>Session Beneficial</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-10-82</td>
<td>Chas Orr</td>
<td>5.00</td>
<td>5.00</td>
<td>4.78</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>11-17-82</td>
<td>Robert Fulton</td>
<td>4.79</td>
<td>4.97</td>
<td>4.91</td>
<td>4.66</td>
<td>4.65</td>
<td>4.71</td>
<td>4.88</td>
</tr>
<tr>
<td>11-18-82</td>
<td>FCE</td>
<td>4.69</td>
<td>4.73</td>
<td>3.92</td>
<td>3.70</td>
<td>3.96</td>
<td>4.54</td>
<td>4.54</td>
</tr>
<tr>
<td>11-19-82</td>
<td>Gordon</td>
<td>4.50</td>
<td>4.60</td>
<td>4.70</td>
<td>4.40</td>
<td>4.11</td>
<td>4.40</td>
<td>4.40</td>
</tr>
<tr>
<td>11-19-82</td>
<td>Wm. C. Bryant</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>4.67</td>
<td>5.00</td>
<td>4.00</td>
<td>4.67</td>
</tr>
<tr>
<td>12-03-82</td>
<td>Wm C Bryant</td>
<td>4.85</td>
<td>5.00</td>
<td>5.00</td>
<td>4.83</td>
<td>4.43</td>
<td>5.00</td>
<td>4.86</td>
</tr>
<tr>
<td>12-14-82</td>
<td>D. Morgan</td>
<td>5.00</td>
<td>4.63</td>
<td>2.89</td>
<td>3.94</td>
<td>4.05</td>
<td>4.94</td>
<td>4.94</td>
</tr>
<tr>
<td>01-19-83</td>
<td>Tremont</td>
<td>4.70</td>
<td>4.70</td>
<td>3.20</td>
<td>4.16</td>
<td>4.25</td>
<td>4.45</td>
<td>4.21</td>
</tr>
<tr>
<td>02-08-83</td>
<td>Giddings</td>
<td>4.67</td>
<td>4.75</td>
<td>3.75</td>
<td>4.22</td>
<td>4.22</td>
<td>4.66</td>
<td>4.56</td>
</tr>
<tr>
<td>02-17-83</td>
<td>Wm Harper</td>
<td>4.81</td>
<td>4.81</td>
<td>4.81</td>
<td>4.42</td>
<td>4.56</td>
<td>4.81</td>
<td>4.81</td>
</tr>
<tr>
<td>03-02-83</td>
<td>A. Rickoff</td>
<td>4.95</td>
<td>4.86</td>
<td>3.50</td>
<td>4.18</td>
<td>4.35</td>
<td>4.80</td>
<td>4.80</td>
</tr>
<tr>
<td>03-16-83</td>
<td>Tremont</td>
<td>4.83</td>
<td>4.80</td>
<td>4.45</td>
<td>4.41</td>
<td>4.41</td>
<td>4.76</td>
<td>4.62</td>
</tr>
<tr>
<td>04-19-83</td>
<td>Woodland Hills</td>
<td>5.00</td>
<td>4.60</td>
<td>4.40</td>
<td>4.80</td>
<td>5.00</td>
<td>4.60</td>
<td>4.80</td>
</tr>
<tr>
<td>04-20-83</td>
<td>Bolton</td>
<td>4.92</td>
<td>4.92</td>
<td>4.21</td>
<td>4.46</td>
<td>4.56</td>
<td>4.80</td>
<td>4.80</td>
</tr>
<tr>
<td>06-01-83</td>
<td>A. Wayne</td>
<td>4.94</td>
<td>4.94</td>
<td>4.88</td>
<td>4.63</td>
<td>4.50</td>
<td>4.75</td>
<td>4.75</td>
</tr>
<tr>
<td>*Summary</td>
<td></td>
<td>4.84</td>
<td>4.81</td>
<td>4.59</td>
<td>4.42</td>
<td>4.68</td>
<td>4.67</td>
<td>4.68</td>
</tr>
</tbody>
</table>

*Average of all reported Mean Response Values
Objective 4: Elementary teachers of the schools not identified as one of the 15 concentration schools will receive inservice training focused on skills needed to implement:

- primary and upper elementary science curriculum
- lesson plan structure

Outcome: This objective has been achieved.

Project records indicate that every elementary school in the system was visited by the elementary consultant teacher at least once during the first year. Elementary school/teacher visits were designed to focus upon the requisite skills needed to implement the science curriculum and lesson planning by conferring with the individual teachers or small groups of elementary teachers.

Objective 1 (Secondary): At least 75% of grade seven students in the schools receiving concentrated services in life science will show a pre-post gain of 10% on a locally developed test measuring understanding of cell and plant concepts.

Outcome: This objective was not achieved.

The project consultant and evaluator developed, produced, and distributed pre-test materials to project teachers for pre-testing during the week of January 31, 1983. Life Science laboratory kits were distributed to the five project schools which had been targeted for concentrated service. The project functioned at five schools for six weeks during the second semester.

Post-test materials and instructions were distributed (as above) to the focal schools for administration upon the completion of the project. Approximately 350 students at Charles Mooney, Harry E. Davis, Thomas Jefferson, Willson, and Charles Elliot junior high schools comprised the population for concentrated services by the secondary consultant.

Test results were organized for a pre-post analysis which yielded a sample of 178 matched pairs. Table 5 contains a summary of the results of the analysis. The tested sample of project participants evidenced an average gain of 8.45 percent with 43.7 percent of the sample population gaining 10.0 percent or more on the pre-to-post test exercise. Neither of the stated criteria were achieved for this objective.
TABLE 5
Secondary Project Student's Life Science Test Results

<table>
<thead>
<tr>
<th>TEST</th>
<th>N</th>
<th>MEAN SCORE (%)</th>
<th>GAIN(%)</th>
<th>PERCENT OF SAMPLE GAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>178</td>
<td>34.92</td>
<td>8.45</td>
<td>43.7</td>
</tr>
<tr>
<td>Post</td>
<td>178</td>
<td>43.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Objective 2 (Secondary): Junior high school teachers will receive inservice training focused on skills needed to:

- integrate Reading Skills and Science content
- implement lesson plan structure
- improve methodology
- accommodate students having difficulty in achieving science objectives

These skills will be used by teachers to improve students individual achievement.

Outcome: This objective was achieved.

During November, 1982 two inservice sessions were scheduled for "Structured Lesson Plans in Science" and "Integration of Reading Skills in Science". Reactions to the inservice sessions to date are reported in Tables 6 and 7. Mean response values reported for each of the areas mentioned in the objective exceed 4.00 on a response scale of 1.00 to 5.00. In each case, a clear majority of the respondents (78-88 percent of the sample) rated the objective component of the positively (X 40). Additionally, two workshops were conducted during the second semester in February and March for the project. Improvement of instructional methodology and the accommodation of students with achievement difficulties were the topics of primary discussion at the two initial meetings of the second semester. Rating instruments were not analyzed for these sessions.

Objective 3 (Secondary): At least 80 percent of the teachers receiving inservice through the secondary teacher consultant will assign the service rating of at least 4 on a 5 point scale measuring the extent to which the visits helped them to:
### Table 6
MEAN VALUES OF REACTION
SPECIFIC INSERVICE TOPICS
Scale = 1-5 (positive)

<table>
<thead>
<tr>
<th>RESPONSE TOPIC</th>
<th>NUMBER OF RESPONDENTS</th>
<th>% Rating 4 or 5</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity of understanding the DPPF project</td>
<td>34</td>
<td>88</td>
<td>4.67</td>
</tr>
<tr>
<td>Thoroughness of protest objective knowledge</td>
<td>16</td>
<td>88</td>
<td>4.50</td>
</tr>
<tr>
<td>Practicality of Science</td>
<td>16</td>
<td>81</td>
<td>4.56</td>
</tr>
<tr>
<td>Ability to incorporate process skills in daily</td>
<td>14</td>
<td>79</td>
<td>4.19</td>
</tr>
<tr>
<td>Ability to incorporate science teaching methods</td>
<td>18</td>
<td>70</td>
<td>4.22</td>
</tr>
<tr>
<td>into classroom management strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 7
MEAN VALUES REACTION TO GENERAL INSERVICE TOPICS
SCALE = 1-5 (positive)
WORKSHOPS I and II

<table>
<thead>
<tr>
<th>ITEM</th>
<th>RESPONSE TOPIC</th>
<th>NUMBER OF RESPONDENTS</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Clarity of purpose</td>
<td>34</td>
<td>4.73</td>
</tr>
<tr>
<td>2.</td>
<td>Content understandable</td>
<td>34</td>
<td>4.50</td>
</tr>
<tr>
<td>3.</td>
<td>Sufficiency of time</td>
<td>34</td>
<td>4.33</td>
</tr>
<tr>
<td>4.</td>
<td>Opportunity of interest</td>
<td>34</td>
<td>4.29</td>
</tr>
<tr>
<td>5.</td>
<td>Acquisition of new knowledge</td>
<td>34</td>
<td>4.17</td>
</tr>
<tr>
<td>6.</td>
<td>Practicality of information</td>
<td>34</td>
<td>4.56</td>
</tr>
<tr>
<td>7.</td>
<td>Session beneficial</td>
<td>34</td>
<td>4.57</td>
</tr>
</tbody>
</table>
integrate Reading skills with science content

implement their teaching methodology

incorporate process skills in daily planning and teaching with emphasis in grades 7-9

The teacher evaluation will be used to refine the services to students in subsequent years.

Outcome: This objective has been achieved.

The project's secondary consultant has made 303* junior high school building visits throughout the academic year. These visits involved 324* teacher conferences to strengthen skills in the areas specified by the objectives stated above. Additionally, 108 senior high school visits involving 64* individual teacher conferences were completed during the school year.

Near the close of the second semester, a questionnaire designed to assess the impact of Reinforcement Science Skills Project upon the secondary project teacher population was distributed to participating teachers through the school department chairmen. A total of 24 completed instruments were returned (of 75 produced for distribution). A copy of the questionnaire is included in Appendix D.

The sample responded as follows:

Ten teachers indicated that they participated in science inservice workshops for a total of 25 times.

Eighteen teachers viewed or listened to instructional improvement tapes 57 times.

Eighteen teachers participated in individual inservice conferences 45 times.

Twenty one teachers indicated that they received other DPPF project related services 59 times throughout the school year.

Table 9 illustrates the response to the specific items which document the attainment of the objective.

*Duplicated Count
TABLE 9
Responses to Secondary Science Teacher Survey
Scale = 5-1 (low)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>N</th>
<th>MEAN</th>
<th>4 OR 5 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Using supplementary science materials to improve teaching methods.</td>
<td>20</td>
<td>4.30</td>
<td>85</td>
</tr>
<tr>
<td>b. Planning effective science lessons with structured lesson plans.</td>
<td>14</td>
<td>4.29</td>
<td>79</td>
</tr>
<tr>
<td>c. Teaching reading skill in the content area of science</td>
<td>15</td>
<td>4.33</td>
<td>80</td>
</tr>
<tr>
<td>d. Incorporating science process skills in daily planning and teaching</td>
<td>11</td>
<td>4.55</td>
<td>100</td>
</tr>
</tbody>
</table>

CONCLUSIONS

The four elementary and three secondary objectives of the Reinforcement Science Skills project for the 1982-1983 academic year provided for the enhancement of the delivery of science instruction to students in grades 1 through 8 through the provision of materials and teacher training in the area of science instruction. Grades 5 and 7 were targeted (in selected schools) for the SCIS II--Energy Sources Kit and the Life Science Kits for the intensive services while all schools availed themselves of inservice consultation and workshop activities.

At the elementary level, two objectives were partially attained while two were completely attained. The project's one project objective achieved well above the targeted gain score (18.30% as opposed to 10.0%) yet the targeted gain was only achieved by 65.2% of the sample tested. The concentrated inservice objective was also partially achieved-insofar as the targeted response level was narrowly missed. The provision of consultative services for the "non-concentrated" schools was successful. Workshops as well as individual school visits and teacher conferences were evidenced throughout the school year and rated well within the goals of the stated objectives.

At the secondary level, one objective was not achieved while two were achieved. Students at the five schools chosen to participate in the concentrated service aspect of the project did not attain the targeted gain on a pre-post measure of their achievement. The provision of teacher training through workshops and consultative visits were very successful for the secondary project participants. Both objectives evidenced successful achievement based on the stated criteria.
The following recommendations are made to maintain or improve this project.

**Elementary**

1. Reduce the number of stated objectives by one. The inservice objectives would be more consistent and more easily interpretable if they were stated as those in the Secondary area. One objective could address the inservice activity associated with the concentrated activity while another could address inservice activities at non-concentrated schools.

2. Continue to provide the workshop and consultative service for elementary teachers--especially those who need assistance in science content or method approached.

**Secondary**

1. Continue to provide the workshops and consultative services for those teachers in need of assistance in the areas of science content or method approaches in teaching.

2. Select an alternate exercise for those schools targeted for concentrated services. The life science kit appears to exceed reasonable grade level expectations.
### Elementary Schools

1. Adlai Stevenson  
2. Alfred A. Benesch  
3. Almira  
4. Andrew J. Rickoff  
5. Anthony Wayne  
6. Anton Grdina  
7. Artemus Ward  
8. Benjamin Franklin  
9. Bolton  
10. Brooklawn  
11. Buckeye-Woodland  
12. Buhrer  
13. Captain A. Roth  
14. Case  
15. Charles Dickens  
16. Charles H. Lake  
17. Charles Orr  
18. Chesterfield  
19. Clark  
20. Corlētt  
21. Cranwood  
22. Daniel E. Morgan  
23. Denison  
24. Dike  
25. Douglas Mac Arthur  
26. East Clark  
27. East Madison  
28. Emile B deSauze  
29. Euclid Park  
30. Forest Hill Parkway  
31. Fullerton  
32. Fundamental Ed. Center*  
33. Garfield  
34. George W. Carver  
35. Giddings  
36. Gordon  
37. Gracemount  
38. Halle  
39. Harvey Rice  
40. Hazeldell  
41. Henry W. Longfellow  
42. Hicks Montessori*  
43. Iowa-Maple  
44. John W. Raper  
45. Joseph F. Landis  
46. Kenneth W. Clement  
47. Kentucky  
48. Lafayette Academy*  
49. Louis Agassiz  
50. Louis Pasteur  
51. Margaret Ireland  
52. Marion Seltzer  
53. Marion-Stirling  
54. Mary Martin  
55. Mary M. Bethune  
56. McKinley  
57. Memphis  
58. Miles  
59. Miles Park  
60. Miles Standish  
61. Milford  
62. Moses Cleveland**  
63. Mound  
64. Rt. Auburn  
65. Mt. Pleasant  
66. Nathaniel Hawthorne  
67. Oliver H. Perry  
68. Orchard  
69. Paul L. Dunbar  
70. Paul Revere  
71. Riverside  
72. Robert Fulton  
73. Robinson G. Jones  
74. Scranton  
75. Stephen E. Howe  
76. Tremont  
77. Union  
78. Valley View  
79. Verda Brust  
80. Wade Park  
81. Walton  
82. Warner  
83. Watterson-Lake  
84. Waverly  
85. Willow  
86. William C. Bryant  
87. William R. Harper  
88. Woodland Hills  
** Not eligible

### Junior High Schools

1. Albert B. Hart  
2. Alexander Hamilton  
3. Audubon  
4. Carl F. Shuler  
5. Central  
6. Charles Mooney  
7. Charles Eliot  
8. Clara Westropp  
9. Empire  
10. Franklin D. Roosevelt  
11. Harry E. Davis  
12. Joseph M Gallagher  
13. Lincoln  
14. Margaret Spellacy  
15. Martin L. King  
16. Nathan Hale  
17. Newton D Baker  
18. Patrick Henry  
19. Robert H. Jamison  
20. Thomas Jefferson  
21. Whitney M. Young  
22. Wilbur Wright  
23. Willson  
24. Aviation*  
25. Collinwood  
26. East  
27. East Technical  
28. Glenville  
29. James F. Rhodes  
30. Jane Addams*  
31. John Adams  
32. John F. Kennedy  
33. John Hay  
34. John-Marshall  
35. Health Careers*  
36. Lincoln-West  
37. Max S. Hayes*  
38. South  
39. West Technical

*City-Wide Schools

1. A. G. Bell  
2. Cleveland School of Arts  
3. Cleveland School of Law  
4. Cleveland School of Science  
5. Sunbeam-Ortho. Hand
## RESEARCH AND EVALUATION

**THE REINFORCEMENT SCIENCE SKILLS PROJECT**

**WORKSHOP - I Secondary Science Teachers**

**11-23-82**

Please indicate the clarity of and your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

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GENERAL REACTIONS (respond as above.)

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**GENERAL REACTIONS (respond as above.)**

| **PURPOSES WERE CLEAR** | 5 | 4 | 3 | 2 | 1 |
| **CONTENT UNDERSTANDABLE** | 5 | 4 | 3 | 2 | 1 |
| **TIME SUFFICIENT** | 5 | 4 | 3 | 2 | 1 |
| **OPPORTUNITY TO INTERACT** | 5 | 4 | 3 | 2 | 1 |
| **NEW KNOWLEDGE ACQUIRED** | 5 | 4 | 3 | 2 | 1 |
| **INFORMATION IMPractical** | 5 | 4 | 3 | 2 | 1 |
| **SESSION BENEFICIAL** | 5 | 4 | 3 | 2 | 1 |
THE REINFORCEMENT SCIENCE SKILLS PROJECT

Inservice Workshops

School ___________________________ Date ___________________________
Grade ________________

Directions: Please give your impressions of today's session by circling the number along each continuum which most closely represents your feelings concerning each item. Note that a "5" represents the most positive response, while a "1" represents the most negative response.

PURPOSES WERE CLEAR 5 4 3 2 1 PURPOSES WERE UNCLEAR
CONTENT UNDERSTANDABLE 5 4 3 2 1 CONTENT CONFUSING
TIME SUFFICIENT 5 4 3 2 1 INSUFFICIENT TIME
EFFECTIVE DISCUSSION 5 4 3 2 1 INEFFECTIVE DISCUSSION
NEW KNOWLEDGE ACQUIRED 5 4 3 2 1 NO NEW KNOWLEDGE ACQUIRED
INFORMATION PRACTICAL 5 4 3 2 1 INFORMATION IMPRACTICAL
SESSION BENEFICIAL 5 4 3 2 1 SESSION OF NO BENEFIT

List one-two commendable points of this workshop:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

List recommendations to improve future workshops:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

COMMENTS:

____________________________________________________________________
APPENDIX C

RESEARCH AND EVALUATION

THE REINFORCEMENT SCIENCE SKILLS PROJECT
WORKSHOP - I Secondary Science Teachers
11-23-82

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| PURPOSES WERE CLEAR                                                 | 5 | 4 | 3 | 2 | 1  |
| CONTENT UNDERSTANDABLE                                             |   |   |   |   |    |
| TIME SUFFICIENT                                                    |   |   |   |   |    |
| OPPORTUNITY TO INTERACT                                            |   |   |   |   |    |
| NEW KNOWLEDGE ACQUIRED                                             |   |   |   |   |    |
| INFORMATION PRACTICAL                                              |   |   |   |   |    |
| SESSION BENEFICIAL                                                 |   |   |   |   |    |
| NEW KNOWLEDGE ACQUIRED                                             |   |   |   |   |    |
| INFORMATION IMPractical                                            |   |   |   |   |    |
| SESSION OF NO BENEFIT                                              |   |   |   |   |    |
| LITTLE UNDERSTANDING OF THE DPPF PROJECT                            |   |   |   |   |    |
| LITTLE KNOWLEDGE OF PROJECT OBJECTIVES                              |   |   |   |   |    |
| LITTLE OR NO INSIGHT INTO SCIENCE CLASSROOM MANAGEMENT STRATEGIES  |   |   |   |   |    |
| LITTLE OR NO INSIGHT INTO THE LESSON PLAN STRUCTURE                 |   |   |   |   |    |

COMMENTS:
APPENDIX C
CLEVELAND PUBLIC SCHOOLS
RESEARCH AND EVALUATION
THE REINFORCEMENT SCIENCE SKILLS PROJECT
WORKSHOP - II Secondary Science Teachers
11-30-82

Please indicate the clarity of your understanding of the following workshop objectives by circling the appropriate number (5=highest; 1=lowest).

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APPENDIX D

DPPF
SECONDARY REINFORCEMENT SCIENCE
Cleveland Public Schools
1982-1983
Science Teacher Survey

To evaluate the impact of the DPPF Reinforcement Science Project, you are asked to respond to the items on this survey. Any suggestions you can make to improve the project will be appreciated. COMPLETE-FOLD-STAPLE-MAIL

1. How many times during the 1982-1983 school year did you:
   a. Participate in science inservice workshops? ______
   b. View video tapes/listen to cassettes to improve instructions? ______
   c. Receive other DPPF project related services? ______
   d. Participate in individual inservice conferences? ______

2. Please check (✓) the DPPF Project target area(s) in which you received assistance. For the areas checked, rate the effectiveness of the service by circling the appropriate rating using this scale:

   5 4 3 2 1
   Very effective Very ineffective

   ___ a. Using supplementary science materials to improve teaching methods. 5 4 3 2 1
   ___ b. Planning effective science lessons with structured lesson plans. 5 4 3 2 1
   ___ c. Teaching reading skills in the content area of science. 5 4 3 2 1
   ___ d. Incorporating science process skills in daily planning and teaching. 5 4 3 2 1

3. What was the most beneficial aspect of the DPPF Project?

   __________________________________________
   __________________________________________
   __________________________________________

4. What change(s) could you suggest to improve the DPPF Project?

   __________________________________________
   __________________________________________

CONTINUE ON BACK IF NECESSARY