

# 2018 PROGRAM EVALUATION 

WEST VIRGINIA ARIZONA

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## Statistical Tests

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Exhibit 1
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona
Mean Score I mprovement \& Percentage I mprovement by State/ School

| State | School | Student Count* | Knowledge of Nutrients |  | Push-Ups |  | Sit-Ups |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Mean Change | Mean \% Change | Mean Change | Mean \% Change | Mean Change | Mean \% Change |
| AZ | Moon Mountain | 73 | 5.22 | 170.1\% | 5.37 | 55.1\% | 14.19 | 75.9\% |
| AZ Total |  | 73 | 5.22 | 170.1\% | 5.37 | 55.1\% | 14.19 | 75.9\% |
| WV | Wilkerson | 27 | 4.22 | 128.1\% | 9.30 | 154.9\% | 10.15 | 44.0\% |
|  | Crescent | 137 | 2.13 | 49.7\% | 7.11 | 209.7\% | 11.42 | 121.4\% |
|  | Chesapeake | 16 | 3.50 | 101.8\% | 2.13 | 16.8\% | 10.67 | 59.0\% |
|  | Adamston | 21 | 1.00 | 15.7\% | 0.67 | 12.0\% | 0.71 | 12.1\% |
|  | Anne Bailey | 17 | 41.76 | 114.5\% | 5.12 | 92.6\% | 9.71 | 300.0\% |
|  | Cheat Lake | 24 | 1.71 | 32.8\% | 5.88 | 34.9\% | 9.71 | 32.4\% |
|  | Coalton | 24 | 4.42 | 132.5\% | 2.71 | 17.7\% | 0.50 | 1.6\% |
|  | Crab Orchard | 22 | 5.36 | 140.5\% | 1.73 | 39.2\% | 2.95 | 21.1\% |
|  | Cranberry Prosperity | 9 | 1.56 | 107.7\% | 10.67 | 168.4\% | 17.00 | 119.0\% |
|  | Eastbrook | 21 | 4.62 | 116.9\% | 4.86 | 107.4\% | 5.81 | 29.7\% |
|  | Gilbert Middle | 15 | 1.87 | 57.1\% | 1.00 | 10.1\% | -3.80 | -9.4\% |
|  | Jumping Branch | 30 | 0.50 | 10.3\% | 5.67 | 44.2\% | 19.47 | 129.2\% |
|  | Mercer | 21 | 3.14 | 124.5\% | 3.58 | 43.3\% | 11.10 | 78.4\% |
|  | Milton | 22 | 3.36 | 98.7\% | 21.60 | 1107.7\% | 13.38 | 638.6\% |
|  | New Manchester | 15 | 1.93 | 64.4\% | 4.14 | 290.0\% | 14.60 | 663.6\% |
|  | New Martinsville | 33 | 2.88 | 43.6\% | 5.44 | 57.8\% | 4.33 | 19.8\% |
|  | Overbrook | 23 | 2.48 | 77.0\% | 8.71 | 569.2\% | 21.00 | 619.2\% |
|  | Sophia Soak Creek | 42 | 1.98 | 50.6\% | 9.87 | 1133.3\% | 2.76 | 8.6\% |
|  | Southside | 20 | 4.90 | 107.7\% | 3.55 | 120.3\% | 4.95 | 31.6\% |
|  | Spanishburg | 18 | 2.50 | 50.0\% | 6.17 | 45.1\% | 6.28 | 18.6\% |
| WV Total |  | 557 | 3.88 | 75.1\% | 6.23 | 94.1\% | 8.92 | 53.7\% |
| Total |  | 630 | 4.03 | 81.9\% | 6.12 | 86.9\% | 9.58 | 56.8\% |


| State | School | Student Count* | Systolic Blood Pressure |  | Diastolic Blood Pressure |  | Resting Heart Rate |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Mean Change | Mean \% Change | Mean Change | Mean \% Change | Mean Change | Mean \% Change |
| AZ | Moon Mountain | 73 |  |  |  |  |  |  |
| AZ Total |  | 73 |  |  |  |  |  |  |
| W | Wilkerson | 27 |  |  |  |  |  |  |
|  | Crescent | 137 | -5.79 | -6.0\% | -2.31 | -3.6\% | -2.35 | -3.2\% |
|  | Chesapeake | 16 |  |  |  |  |  |  |
|  | Adamston | 21 | -1.00 | -0.8\% | -0.67 | -0.8\% | -0.81 | -1.0\% |
|  | Anne Bailey | 17 | -3.71 | -3.7\% | 1.53 | 2.4\% | -2.94 | -3.7\% |
|  | Cheat Lake | 24 | -1.00 | -1.0\% | -0.42 | -0.6\% |  |  |
|  | Coalton | 24 |  |  |  |  |  |  |
|  | Crab Orchard | 22 |  |  |  |  |  |  |
|  | Cranberry Prosperity | 9 | -22.88 | -19.1\% | -10.38 | -14.3\% | -2.25 | -2.4\% |
|  | Eastbrook | 21 |  |  |  |  |  |  |
|  | Gilbert Middle | 15 |  |  |  |  |  |  |
|  | Jumping Branch | 30 |  |  |  |  |  |  |
|  | Mercer | 21 | -0.10 | -0.1\% | 1.52 | 2.5\% | 3.05 | 3.7\% |
|  | Milton | 22 | 0.72 | 0.8\% | -0.61 | -0.9\% | -4.83 | -5.5\% |
|  | New Manchester | 15 | -9.86 | -9.1\% | -4.86 | -7.0\% | -4.29 | -4.8\% |
|  | New Martinsville | 33 |  |  |  |  |  |  |
|  | Overbrook | 23 | 0.38 | 0.5\% | -0.62 | -1.1\% | 0.38 | 0.5\% |
|  | Sophia Soak Creek | 42 |  |  |  |  |  |  |
|  | Southside | 20 |  |  |  |  |  |  |
|  | Spanishburg | 18 |  |  |  |  |  |  |
| WV Total |  | 557 | -4.28 | -4.3\% | -1.63 | -2.5\% | -1.88 | -2.4\% |
| Total |  | 630 | -4.28 | -4.3\% | -1.63 | -2.5\% | -1.88 | -2.4\% |

[^0]Exhibit 2
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona

Mean Score I mprovement \& Percentage I mprovement by School/ Classroom

| School | Classroom | Student Count* | Knowledge of Nutrients |  | Push-Ups |  | Sit-Ups |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Mean Change | Mean \% Change | Mean Change | Mean \% Change | Mean Change | Mean \% Change |
| Wilkerson | Eva Jeng | 27 | 4.22 | 128.1\% | 9.30 | 154.9\% | 10.15 | 44.0\% |
| Moon Mountain | Alexander | 23 | 6.13 | 276.5\% | 5.38 | 59.8\% | 23.42 | 152.3\% |
|  | Caraway | 27 | 5.04 | 144.7\% | 6.74 | 69.4\% | 13.94 | 69.3\% |
|  | Cave | 23 | 4.52 | 131.6\% | 3.33 | 31.1\% | 3.64 | 17.7\% |
| Chesapeake | Allison Sigman | 16 | 3.50 | 101.8\% | 2.13 | 16.8\% | 10.67 | 59.0\% |
| Adamston | Alan Bashnett Jr | 21 | 1.00 | 15.7\% | 0.67 | 12.0\% | 0.71 | 12.1\% |
| Anne Bailey | Brandy Copen | 17 | 41.76 | 114.5\% | 5.12 | 92.6\% | 9.71 | 300.0\% |
| Cheat Lake | Brianna Parks | 24 | 1.71 | 32.8\% | 5.88 | 34.9\% | 9.71 | 32.4\% |
| Coalton | Ashley Kimble | 24 | 4.42 | 132.5\% | 2.71 | 17.7\% | 0.50 | 1.6\% |
| Crab Orchard | Breanna Rider | 22 | 5.36 | 140.5\% | 1.73 | 39.2\% | 2.95 | 21.1\% |
| Cranberry Prosperity | Angela Hughes | 9 | 1.56 | 107.7\% | 10.67 | 168.4\% | 17.00 | 119.0\% |
| Crescent | Carrie Austin | 24 | 3.83 | 90.2\% | 8.43 | 206.4\% | 8.78 | 74.1\% |
|  | Katelyn Cooper | 22 | 2.18 | 61.5\% | 4.25 | 154.5\% | 7.45 | 131.2\% |
|  | Kimberly Dalton | 18 | 1.39 | 35.2\% | 5.19 | 218.4\% | 6.11 | 88.7\% |
|  | Lisa Della Mea | 27 | 1.48 | 31.7\% | 6.29 | 181.9\% | 11.61 | 105.2\% |
|  | Katie Ringwald | 24 | 1.79 | 43.0\% | 7.94 | 234.4\% | 12.68 | 112.6\% |
|  | Bethany Kirby | 22 | 2.00 | 39.6\% | 9.94 | 255.7\% | 23.26 | 278.0\% |
| Eastbrook | Donald Pauley | 21 | 4.62 | 116.9\% | 4.86 | 107.4\% | 5.81 | 29.7\% |
| Gilbert Middle | Clay Campbell | 15 | 1.87 | 57.1\% | 1.00 | 10.1\% | -3.80 | -9.4\% |
| Jumping Branch | Jessica Collins | 12 | 0.17 | 4.4\% | 6.00 | 116.1\% | 20.50 | 282.8\% |
|  | Pam Mounts | 18 | 0.72 | 12.9\% | 5.44 | 30.3\% | 18.78 | 92.6\% |
| Mercer | Angie Neal | 21 | 3.14 | 124.5\% | 3.58 | 43.3\% | 11.10 | 78.4\% |
| Milton | Davota Lowe | 22 | 3.36 | 98.7\% | 21.60 | 1107.7\% | 13.38 | 638.6\% |
| New Manchester | Cara McMahan | 15 | 1.93 | 64.4\% | 4.14 | 290.0\% | 14.60 | 663.6\% |
| New Martinsville | Marlee Amos | 19 | 4.74 | 95.7\% | 6.21 | 61.8\% | 5.63 | 18.4\% |
|  | Valerie Cain | 14 | 0.36 | 4.0\% | 4.31 | 50.9\% | 2.57 | 25.5\% |
| Overbrook | Brooke Bias | 23 | 2.48 | 77.0\% | 8.71 | 569.2\% | 21.00 | 619.2\% |
| Sophia Soak Creek | Samantha Gordon | 42 | 1.98 | 50.6\% | 9.87 | 1133.3\% | 2.76 | 8.6\% |
| Southside | Kristen Austin | 20 | 4.90 | 107.7\% | 3.55 | 120.3\% | 4.95 | 31.6\% |
| Spanishburg | William Harmon | 18 | 2.50 | 50.0\% | 6.17 | 45.1\% | 6.28 | 18.6\% |
| Total |  | 630 | 4.03 | 81.9\% | 6.12 | 86.9\% | 9.58 | 56.8\% |



[^1]Exhibit 3
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona
Mean Score I mprovement \& Percentage I mprovement by Grade Level

| Grade | Student Count* | Knowledge of Nutrients |  | Push-Ups |  | Sit-Ups |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Mean Change | Mean \% Change | Mean Change | Mean \% Change | Mean Change | Mean \% Change |
| 3 rd | 199 | 2.65 | 75.8\% | 5.13 | 88.4\% | 7.52 | 42.7\% |
| 4th | 268 | 5.92 | 99.1\% | 7.40 | 112.9\% | 12.29 | 85.9\% |
| 5th | 163 | 2.62 | 53.0\% | 5.13 | 55.9\% | 7.69 | 38.4\% |
| Total | 630 | 4.03 | 81.9\% | 6.12 | 86.9\% | 9.58 | 56.8\% |


| Grade | Student Count* | Systolic Blood Pressure |  | Diastolic Blood Pressure |  | Resting Heart Rate |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Mean | Mean \% | Mean | Mean \% | Mean | Mean \% |
|  |  | Change | Change | Change | Change | Change | Change |
| 3rd | 199 | -7.64 | -7.5\% | -2.86 | -4.4\% | -1.33 | -1.6\% |
| 4th | 268 | -2.28 | -2.3\% | -0.58 | -0.9\% | -1.67 | -2.1\% |
| 5th | 163 | -3.79 | -3.9\% | -1.92 | -2.9\% | -3.19 | -4.4\% |
| Total | 630 | -4.28 | -4.3\% | -1.63 | -2.5\% | -1.88 | -2.4\% |

[^2]Exhibit 4
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona




Exhibit 5
Operation Tone-Up
2018 Program Evaluation
2018 Program




Exhibit 6
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona



Exhibit 7
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona
Pre \& Post Test Scores for Knowledge of Nutrients

| School | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \hline(\mathrm{d})=(\mathrm{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wilkerson | 27 | 3.30 | 7.52 | 4.22 | 128.1\% |
| Moon Mountain | 73 | 3.07 | 8.29 | 5.22 | 170.1\% |
| Crescent | 137 | 4.29 | 6.42 | 2.13 | 49.7\% |
| Chesapeake | 16 | 3.44 | 6.94 | 3.50 | 101.8\% |
| Adamston | 21 | 6.38 | 7.38 | 1.00 | 15.7\% |
| Anne Bailey | 17 | 36.47 | 78.24 | 41.76 | 114.5\% |
| Cheat Lake | 24 | 5.21 | 6.92 | 1.71 | 32.8\% |
| Coalton | 24 | 3.33 | 7.75 | 4.42 | 132.5\% |
| Crab Orchard | 22 | 3.82 | 9.18 | 5.36 | 140.5\% |
| Cranberry Prosperity | 9 | 1.44 | 3.00 | 1.56 | 107.7\% |
| Eastbrook | 21 | 3.95 | 8.57 | 4.62 | 116.9\% |
| Gilbert Middle | 15 | 3.27 | 5.13 | 1.87 | 57.1\% |
| Jumping Branch | 30 | 4.87 | 5.37 | 0.50 | 10.3\% |
| Mercer | 21 | 2.52 | 5.67 | 3.14 | 124.5\% |
| Milton | 22 | 3.41 | 6.77 | 3.36 | 98.7\% |
| New Manchester | 15 | 3.00 | 4.93 | 1.93 | 64.4\% |
| New Martinsville | 33 | 6.61 | 9.48 | 2.88 | 43.6\% |
| Overbrook | 23 | 3.22 | 5.70 | 2.48 | 77.0\% |
| Sophia Soak Creek | 42 | 3.90 | 5.88 | 1.98 | 50.6\% |
| Southside | 20 | 4.55 | 9.45 | 4.90 | 107.7\% |
| Spanishburg | 18 | 5.00 | 7.50 | 2.50 | 50.0\% |
| Total | 630 | 4.92 | 8.95 | 4.03 | 81.9\% |

Exhibit 8
Operation Tone-Up
2018 Program Evaluation
West Virginia \& Arizona
Pre \& Post Test Scores for Push-Ups

|  | Student <br> Count | (a) <br> Pre Test <br> Mean Score | (b) <br> Post Test <br> Mean Score | (c) $=\mathbf{( b )}-\mathbf{( a )}$ <br> Mean <br> Change | (d) $=(\mathbf{c}) /(\mathbf{a})$ <br> Mean <br> Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wilkerson | 27 | 6.00 | 15.30 | 9.30 | $154.9 \%$ |
| Moon Mountain | 78 | 9.74 | 15.12 | 5.37 | $55.1 \%$ |
| Crescent | 115 | 3.39 | 10.50 | 7.11 | $209.7 \%$ |
| Chesapeake | 15 | 12.73 | 14.87 | 2.13 | $16.8 \%$ |
| Adamston | 21 | 5.57 | 6.24 | 0.67 | $12.0 \%$ |
| Anne Bailey | 17 | 5.53 | 10.65 | 5.12 | $92.6 \%$ |
| Cheat Lake | 24 | 16.83 | 22.71 | 5.88 | $34.9 \%$ |
| Coalton | 24 | 15.29 | 18.00 | 2.71 | $17.7 \%$ |
| Crab Orchard | 22 | 4.41 | 6.14 | 1.73 | $39.2 \%$ |
| Cranberry Prosperity | 6 | 6.33 | 17.00 | 10.67 | $168.4 \%$ |
| Eastbrook | 21 | 4.52 | 9.38 | 4.86 | $107.4 \%$ |
| Gilbert Middle | 15 | 9.87 | 10.87 | 1.00 | $10.1 \%$ |
| Jumping Branch | 30 | 12.83 | 18.50 | 5.67 | $44.2 \%$ |
| Mercer | 19 | 8.26 | 11.84 | 3.58 | $43.3 \%$ |
| Milton | 20 | 1.95 | 23.55 | 21.60 | $1107.7 \%$ |
| New Manchester | 14 | 1.43 | 5.57 | 4.14 | $290.0 \%$ |
| New Martinsville | 32 | 9.41 | 14.84 | 5.44 | $57.8 \%$ |
| Overbrook | 17 | 1.53 | 10.24 | 8.71 | $569.2 \%$ |
| Sophia Soak Creek | 31 | 0.87 | 10.74 | 9.87 | $1133.3 \%$ |
| Southside | 20 | 2.95 | 6.50 | 3.55 | $120.3 \%$ |
| Spanishburg | 18 | 13.67 | 19.83 | 6.17 | $45.1 \%$ |
| Total | $\mathbf{5 8 6}$ | $\mathbf{7 . 0 4}$ | $\mathbf{1 3 . 1 5}$ | $\mathbf{6 . 1 2}$ | $\mathbf{8 6 . 9 \%}$ |

Pre \& Post Test Scores for Sit-Ups

| School | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test <br> Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} (d)=(c) /(a) \\ M e a n \\ \% \text { Change } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wilkerson | 27 | 23.07 | 33.22 | 10.15 | 44.0\% |
| Moon Mountain | 79 | 18.68 | 32.87 | 14.19 | 75.9\% |
| Crescent | 133 | 9.41 | 20.83 | 11.42 | 121.4\% |
| Chesapeake | 15 | 18.07 | 28.73 | 10.67 | 59.0\% |
| Adamston | 21 | 5.90 | 6.62 | 0.71 | 12.1\% |
| Anne Bailey | 17 | 3.24 | 12.94 | 9.71 | 300.0\% |
| Cheat Lake | 24 | 29.96 | 39.67 | 9.71 | 32.4\% |
| Coalton | 24 | 31.25 | 31.75 | 0.50 | 1.6\% |
| Crab Orchard | 22 | 14.00 | 16.95 | 2.95 | 21.1\% |
| Cranberry Prosperity | 7 | 14.29 | 31.29 | 17.00 | 119.0\% |
| Eastbrook | 21 | 19.57 | 25.38 | 5.81 | 29.7\% |
| Gilbert Middle | 15 | 40.33 | 36.53 | (3.80) | -9.4\% |
| Jumping Branch | 30 | 15.07 | 34.53 | 19.47 | 129.2\% |
| Mercer | 20 | 14.15 | 25.25 | 11.10 | 78.4\% |
| Milton | 21 | 2.10 | 15.48 | 13.38 | 638.6\% |
| New Manchester | 15 | 2.20 | 16.80 | 14.60 | 663.6\% |
| New Martinsville | 33 | 21.88 | 26.21 | 4.33 | 19.8\% |
| Overbrook | 23 | 3.39 | 24.39 | 21.00 | 619.2\% |
| Sophia Soak Creek | 42 | 32.12 | 34.88 | 2.76 | 8.6\% |
| Southside | 20 | 15.65 | 20.60 | 4.95 | 31.6\% |
| Spanishburg | 18 | 33.72 | 40.00 | 6.28 | 18.6\% |
| Total | 627 | 16.86 | 26.45 | 9.58 | 56.8\% |

Exhibit 9
Operation Tone-Up
2018 Program Evaluation
West Virginia
Pre \& Post Test Scores for Systolic Blood Pressure

|  | Student <br> Count | (a) <br> Pre Test <br> Mean Score | $\mathbf{( b )}$ <br> Post Test <br> Mean Score | $(\mathbf{c})=\mathbf{( b )}-\mathbf{( a )}$ <br> Mean <br> Change | $(\mathbf{d})=(\mathbf{c}) /(\mathbf{a )}$ <br> Mean <br> \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Crescent | 137 | 97.06 | 91.27 | -5.79 | $-6.0 \%$ |
| Adamston | 21 | 119.29 | 118.29 | -1.00 | $-0.8 \%$ |
| Anne Bailey | 17 | 10.47 | 96.76 | -3.71 | $-3.7 \%$ |
| Cheat Lake | 24 | 99.00 | 98.00 | -1.00 | $-1.0 \%$ |
| Cranberry Prosperity | 8 | 120.00 | 97.13 | -22.88 | $-19.1 \%$ |
| Mercer | 21 | 98.86 | 98.76 | -0.10 | $-0.1 \%$ |
| Milton | 18 | 95.39 | 96.11 | 0.72 | $0.8 \%$ |
| New Manchester | 14 | 108.00 | 98.14 | -9.86 | $-9.1 \%$ |
| Overbrook | 21 | 83.05 | 83.43 | 0.38 | $0.5 \%$ |
| Total | $\mathbf{2 8 1}$ | $\mathbf{9 9 . 2 7}$ | $\mathbf{9 4 . 9 9}$ | $\mathbf{- 4 . 2 8}$ | $\mathbf{- 4 . 3 \%}$ |

Pre \& Post Test Scores for Diastolic Blood Pressure

| School | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \hline(\mathrm{d})=(\mathrm{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Crescent | 137 | 63.58 | 61.27 | -2.31 | -3.6\% |
| Adamston | 21 | 82.33 | 81.67 | -0.67 | -0.8\% |
| Anne Bailey | 17 | 63.12 | 64.65 | 1.53 | 2.4\% |
| Cheat Lake | 24 | 72.08 | 71.67 | -0.42 | -0.6\% |
| Cranberry Prosperity | 8 | 72.75 | 62.38 | -10.38 | -14.3\% |
| Mercer | 21 | 61.14 | 62.67 | 1.52 | 2.5\% |
| Milton | 18 | 70.83 | 70.22 | -0.61 | -0.9\% |
| New Manchester | 14 | 69.71 | 64.86 | -4.86 | -7.0\% |
| Overbrook | 21 | 56.24 | 55.62 | -0.62 | -1.1\% |
| Total | 281 | 65.98 | 64.35 | -1.63 | -2.5\% |

Pre \& Post Test Scores for Resting Heart Rate

| School | Student Count | (a) Pre Test Mean Score | (b) <br> Post Test <br> Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \text { (d) }=(\mathbf{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Crescent | 137 | 73.43 | 71.08 | -2.35 | -3.2\% |
| Adamston | 21 | 81.19 | 80.38 | -0.81 | -1.0\% |
| Anne Bailey | 17 | 79.71 | 76.76 | -2.94 | -3.7\% |
| Cranberry Prosperity | 8 | 93.75 | 91.50 | -2.25 | -2.4\% |
| Mercer | 21 | 82.95 | 86.00 | 3.05 | 3.7\% |
| Milton | 18 | 87.56 | 82.72 | -4.83 | -5.5\% |
| New Manchester | 14 | 89.00 | 84.71 | -4.29 | -4.8\% |
| Overbrook | 21 | 77.62 | 78.00 | 0.38 | 0.5\% |
| Total | 257 | 78.07 | 76.19 | -1.88 | -2.4\% |

Exhibit 10
Operation Tone-Up
2018 Program Evaluation
West Virginia

Pre \& Post Test Scores by Systolic Blood Pressure Range

| Systolic Blood Pressure |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Systolic Pre Test Range | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} (c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \end{gathered}$ | (d) $=(c) /(a)$ Mean \% Change |
| $0<\mathrm{X} \leq 114$ | 246 | 96.11 | 92.97 | -3.14 | -3.3\% |
| $114<\mathrm{X} \leq 125$ | 31 | 119.65 | 107.90 | -11.74 | -9.8\% |
| $>125$ | 4 | 135.75 | 119.25 | -16.50 | -12.2\% |
| Total | 281 | 99.27 | 94.99 | -4.28 | -4.3\% |

Pre \& Post Test Scores by Diastolic Blood Pressure Range

| Diastolic Pre Test Range | Diastolic Blood Pressure |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Student Count | (a) | (b) | $(c)=(b)-(a)$ | $(\mathrm{d})=(\mathrm{c}) /(\mathrm{a})$ |
|  |  | Pre Test | Post Test | Mean | Mean |
|  |  | Mean Score | Mean Score | Change | \% Change |
| $0<\mathrm{X} \leq 75$ | 222 | 61.94 | 61.60 | -0.34 | -0.6\% |
| $75<\mathrm{X} \leq 85$ | 52 | 79.73 | 73.37 | -6.37 | -8.0\% |
| $>85$ | 7 | 91.86 | 84.71 | -7.14 | -7.8\% |
| Total | 281 | 65.98 | 64.35 | -1.63 | -2.5\% |

Pre \& Post Test Scores by Resting Heart Rate Range

| Resting Heart Rate |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| RHR Pre Test Range | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} (c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $(d)=(c) /(a)$ Mean <br> \% Change |
| $0<\mathrm{X} \leq 80$ | 179 | 72.32 | 72.59 | 0.26 | 0.4\% |
| $80<\mathrm{X} \leq 100$ | 62 | 87.31 | 81.81 | -5.50 | -6.3\% |
| $>100$ | 16 | 106.56 | 94.81 | -11.75 | -11.0\% |
| Total | 257 | 78.07 | 76.19 | -1.88 | -2.4\% |

Exhibit 11
Operation Tone-Up
2018 Program Evaluation
West Virginia
Systolic Blood Pressure Range $0<$ X $\leq 114$

| Systolic Blood Pressure (Pre Test Score less than or equal to 114) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (a) | (b) | $(\mathrm{c})=(\mathrm{b})-(\mathrm{a})$ | (d) $=(\mathrm{c}) /(\mathrm{a})$ |
|  | Student | Pre Test | Post Test | Mean | Mean <br> \% <br> Change |
| School | Count | Mean Score | Mean Score | Change | \% Change |
| Crescent | 129 | 95.65 | 90.60 | -5.05 | -5.3\% |
| Adamston | 4 | 113.50 | 115.50 | 2.00 | 1.8\% |
| Anne Bailey | 17 | 100.47 | 96.76 | -3.71 | -3.7\% |
| Cheat Lake | 24 | 99.00 | 98.00 | -1.00 | -1.0\% |
| Cranberry Prosperity | 4 | 107.75 | 95.25 | -12.50 | -11.6\% |
| Mercer | 18 | 95.44 | 98.89 | 3.44 | 3.6\% |
| Milton | 18 | 95.39 | 96.11 | 0.72 | 0.8\% |
| New Manchester | 11 | 105.09 | 98.18 | -6.91 | -6.6\% |
| Overbrook | 21 | 83.05 | 83.43 | 0.38 | 0.5\% |
| Total | 246 | 96.11 | 92.97 | -3.14 | -3.3\% |

Systolic Blood Pressure Range $114<$ X $\leq 125$

| Systolic Blood Pressure (Pre Test Score less than or equal to 125 and greater than 114) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} (\mathrm{d})=(\mathrm{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| Crescent | 8 | 119.75 | 102.00 | -17.75 | -14.8\% |
| Adamston | 14 | 119.21 | 118.86 | -0.36 | -0.3\% |
| Cranberry Prosperity | 3 | 122.67 | 92.33 | -30.33 | -24.7\% |
| Mercer | 3 | 119.33 | 98.00 | -21.33 | -17.9\% |
| New Manchester | 3 | 118.67 | 98.00 | -20.67 | -17.4\% |
| Total | 31 | 119.65 | 107.90 | -11.74 | -9.8\% |

Systolic Blood Pressure Range > 125

| Systolic Blood Pressure (Pre Test Score greater than 125) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (a) | $\mathbf{( b )}$ | $\mathbf{( c ) ~ = ~ ( b ) ~ - ~ ( a ) ~}$ | (d) = (c) / (a) |
|  | Student | Pre Test | Post Test | Mean | Mean |
| School | Count | Mean Score | Mean Score | Change | \% Change |
| Adamston | 3 | 127.33 | 119.33 | -8.00 | $-6.3 \%$ |
| Cranbery Prosperity | 1 | 161.00 | 119.00 | -42.00 | $-26.1 \%$ |
| Total | $\mathbf{4}$ | $\mathbf{1 3 5 . 7 5}$ | $\mathbf{1 1 9 . 2 5}$ | $\mathbf{- 1 6 . 5 0}$ | $\mathbf{- 1 2 . 2 \%}$ |

Exhibit 12
Operation Tone-Up
2018 Program Evaluation
West Virginia
Diastolic Blood Pressure Range $0<X \leq 75$

| Diastolic Blood Pressure (Pre Test Score less than or equal to 75) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Student Count | (a) <br> Pre Test Mean Score | (b) Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \hline(d)=(c) /(a) \\ M e a n \\ \% \text { Change } \\ \hline \end{gathered}$ |
| Crescent | 123 | 61.72 | 60.62 | -1.11 | -1.8\% |
| Anne Bailey | 16 | 62.00 | 63.69 | 1.69 | 2.7\% |
| Cheat Lake | 13 | 66.31 | 66.46 | 0.15 | 0.2\% |
| Cranberry Prosperity | 6 | 66.83 | 58.33 | -8.50 | -12.7\% |
| Mercer | 18 | 58.00 | 61.67 | 3.67 | 6.3\% |
| Milton | 16 | 68.81 | 70.38 | 1.56 | 2.3\% |
| New Manchester | 9 | 64.22 | 64.67 | 0.44 | 0.7\% |
| Overbrook | 21 | 56.24 | 55.62 | -0.62 | -1.1\% |
| Grand Total | 222 | 61.94 | 61.60 | -0.34 | -0.6\% |

Diastolic Blood Pressure Range $75<\mathrm{X} \leq 85$

| Diastolic Blood Pressure (Pre Test Score less than or equal to 85 and greater than 75) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Student Count | (a) <br> Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $(d)=(c) /(a)$ <br> Mean <br> \% Change |
| Crescent | 14 | 79.86 | 67.00 | -12.86 | -16.1\% |
| Adamston | 17 | 80.06 | 79.94 | -0.12 | -0.1\% |
| Anne Bailey | 1 | 81.00 | 80.00 | -1.00 | -1.2\% |
| Cheat Lake | 11 | 78.91 | 77.82 | -1.09 | -1.4\% |
| Cranberry Prosperity | 1 | 80.00 | 50.00 | -30.00 | -37.5\% |
| Mercer | 3 | 80.00 | 68.67 | -11.33 | -14.2\% |
| New Manchester | 5 | 79.60 | 65.20 | -14.40 | -18.1\% |
| Grand Total | 52 | 79.73 | 73.37 | -6.37 | -8.0\% |

Diastolic Blood Pressure Range > 85

| Diastolic Blood Pressure (Pre Test Score greater than 85) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Student Count | (a) Pre Test Mean Score | (b) <br> Post Test Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \hline(\mathrm{d})=(\mathrm{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| Adamston | 4 | 92.00 | 89.00 | -3.00 | -3.3\% |
| Cranberry Prosperity | 1 | 101.00 | 99.00 | -2.00 | -2.0\% |
| Milton | 2 | 87.00 | 69.00 | -18.00 | -20.7\% |
| Grand Total | 7 | 91.86 | 84.71 | -7.14 | -7.8\% |

Exhibit 13
Operation Tone-Up
2018 Program Evaluation
West Virginia

Resting Heart Rate Range $\mathbf{0}<\mathrm{X} \leq \mathbf{8 0}$

| Resting Heart Rate (Pre Test Score less than or equal to 80) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Student Count | (a) Pre Test Mean Score | (b) <br> Post Test <br> Mean Score | $\begin{gathered} \hline(c)=(b)-(a) \\ \text { Mean } \\ \text { Change } \\ \hline \end{gathered}$ | $\begin{gathered} \hline(\mathrm{d})=(\mathrm{c}) /(\mathrm{a}) \\ \text { Mean } \\ \% \text { Change } \\ \hline \end{gathered}$ |
| Crescent | 120 | 71.70 | 70.23 | -1.47 | -2.0\% |
| Adamston | 10 | 75.70 | 76.30 | 0.60 | 0.8\% |
| Anne Bailey | 9 | 70.56 | 69.89 | -0.67 | -0.9\% |
| Cranberry Prosperity | 1 | 79.00 | 79.00 | 0.00 | 0.0\% |
| Mercer | 12 | 72.67 | 84.50 | 11.83 | 16.3\% |
| Milton | 6 | 74.83 | 81.67 | 6.83 | 9.1\% |
| New Manchester | 6 | 76.00 | 75.67 | -0.33 | -0.4\% |
| Overbrook | 15 | 72.93 | 75.73 | 2.80 | 3.8\% |
| Grand Total | 179 | 72.32 | 72.59 | 0.26 | 0.4\% |

Resting Heart Rate Range $\mathbf{8 0}<\mathrm{X} \leq 100$

| Resting Heart Rate (Pre Test Score less than or equal to 80 and greater than 100) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (a) | (b) | (c) $=(\mathrm{b})-(\mathrm{a})$ | (d) = (c) / (a) |
| School | Student Count | Pre Test <br> Mean Score | Post Test <br> Mean Score | Mean <br> Change | Mean \% Change |
| Crescent | 17 | 85.65 | 77.06 | -8.59 | -10.0\% |
| Adamston | 11 | 86.18 | 84.09 | -2.09 | -2.4\% |
| Anne Bailey | 6 | 85.00 | 81.00 | -4.00 | -4.7\% |
| Cranberry Prosperity | 5 | 88.80 | 84.80 | -4.00 | -4.5\% |
| Mercer | 6 | 89.00 | 84.00 | -5.00 | -5.6\% |
| Milton | 9 | 91.22 | 82.56 | -8.67 | -9.5\% |
| New Manchester | 3 | 88.00 | 88.00 | 0.00 | 0.0\% |
| Overbrook | 5 | 87.20 | 83.20 | -4.00 | -4.6\% |
| Grand Total | 62 | 87.31 | 81.81 | -5.50 | -6.3\% |

Resting Heart Rate Range > 100

| School | Resting Heart Rate (Pre Test Score greater than 100) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (a) | (b) | $(c)=(b)-(a)$ | $(\mathrm{d})=(\mathrm{c}) /(\mathrm{a})$ |
|  | Student Count | Pre Test Mean Score | Post Test Mean Score | Mean Change | Mean \% Change |
| Anne Bailey | 2 | 105.00 | 95.00 | -10.00 | -9.5\% |
| Cranberry Prosperity | 2 | 113.50 | 114.50 | 1.00 | 0.9\% |
| Mercer | 3 | 112.00 | 96.00 | -16.00 | -14.3\% |
| Milton | 3 | 102.00 | 85.33 | -16.67 | -16.3\% |
| New Manchester | 5 | 105.20 | 93.60 | -11.60 | -11.0\% |
| Overbrook | 1 | 100.00 | 86.00 | -14.00 | -14.0\% |
| Grand Total | 16 | 106.56 | 94.81 | -11.75 | -11.0\% |

## Appendix A, Sheet 1 <br> Operation Tone-Up <br> 2018 Program Evaluation <br> Arizona <br> Statistical Tests

| Program Indicator | $\begin{aligned} & \hline \text { Sample } \\ & \text { Size } \\ & \hline \end{aligned}$ | Mean | Standard Deviation | Standard Error Mean | $\begin{gathered} \text { Paired } \\ \mathrm{t}-\text { Statistic } \end{gathered}$ | $\begin{gathered} \text { Degrees } \\ \text { of Freedom } \\ \hline \end{gathered}$ | $\begin{gathered} \text { P-Value } \\ \text { (less than) } \end{gathered}$ | Interval of Difference |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | Lower | Upper |
| Knowledge of Nutrients | 73 | 5.219 | 2.231 | 0.261 | 19.984 | 72 | 0.001 | 4.382 | 6.057 |
| Sit-Ups | 79 | 14.190 | 18.117 | 2.038 | 6.961 | 78 | 0.001 | 7.671 | 20.709 |
| Push-Ups | 78 | 5.372 | 6.067 | 0.687 | 7.820 | 77 | 0.001 | 3.174 | 7.570 |

## Knowledge of Nutrients

HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Knowledge of Nutrients improved as a result of the Operation Tone-Up Program.

## Sit- Ups

HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Sit-Ups improved as a result of the Operation Tone-Up Program.

## Push-Ups

HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Push-Ups improved as a result of the Operation Tone-Up Program.

## Appendix A, Sheet 2 <br> Operation Tone-Up <br> 2018 Program Evaluation <br> West Virginia <br> Statistical Tests

| Program Indicator | Sample Size | Mean | Standard Deviation | Standard Error Mean | $\begin{gathered} \text { Paired } \\ \text { t- Statistic } \end{gathered}$ | $\begin{gathered} \text { Degrees } \\ \text { of Freedom } \end{gathered}$ | $\begin{gathered} \text { P-Value } \\ \text { (less than) } \end{gathered}$ | Interval of Difference |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | Lower | Upper |
| Knowledge of Nutrients | 557 | 3.876 | 9.032 | 0.383 | 10.129 | 556 | 0.001 | 2.688 | 5.064 |
| Sit-Ups | 548 | 8.918 | 13.310 | 0.569 | 15.684 | 547 | 0.001 | 7.152 | 10.683 |
| Push-Ups | 508 | 6.230 | 15.434 | 0.685 | 9.098 | 507 | 0.001 | 4.103 | 8.358 |
| Systolic Blood Pressure | 281 | -4.281 | 9.761 | 0.582 | 7.352 | 280 | 0.001 | -6.098 | -2.465 |
| Diastolic Blood Pressure | 281 | -1.626 | 7.525 | 0.449 | 3.623 | 280 | 0.001 | -3.027 | -0.226 |
| Resting Heart Rate | 257 | -1.875 | 8.498 | 0.530 | 3.538 | 256 | 0.001 | -3.531 | -0.220 |

## Knowledge of Nutrients

HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Knowledge of Nutrients improved as a result of the
Operation Tone-Up Program.

Sit- Ups
HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO; there was sufficient evidence to conclude that the average score for Sit-Ups improved as a result of the Operation Tone-Up Program.

## Push-Ups

HO: Mean Post Test Score is less than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is greater than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Push-Ups improved as a result of the Operation Tone-Up Program.

## Systolic Blood Pressure

HO: Mean Post Test Score is greater than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is less than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We do not reject the HO ; there was not sufficient evidence to conclude that the average score for Systolic Blood Pressure improved as a result of the
Operation Tone-Up Program.
Diastolic Blood Pressure
HO: Mean Post Test Score is greater than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is less than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO; there was sufficient evidence to conclude that the average score for Diastolic Blood Pressure improved as a result of the
Operation Tone-Up Program.
Resting Heart Rate
HO: Mean Post Test Score is greater than or equal to the Mean Pre Test Score
Ha: Mean Post Test Score is less than the Mean Pre Test Score
The difference between the mean Pre Test Score and the mean Post Test Score was significant at the 0.001 level.
We reject the HO ; there was sufficient evidence to conclude that the average score for Resting Heart Rate improved as a result of the Operation Tone-Up Program.


[^0]:    *Student count is based upon the number of students that had a pre and post test score for knowledge of nutrients

[^1]:    *Student count is based upon the number of students that had a pre and post test score for knowledge of nutrients

[^2]:    *Student count is based upon the number of students that had a pre and post test score for knowledge of nutrients

