

# Physical Fitness Assessment Initiative (PFAI)

## Texas Statewide Report

### 2020-21 School Year

This report summarizes the Physical Fitness Assessment Initiative (PFAI) results from the 2020-21 school year. Across the Texas public school system, students from 4,202 campuses within 566 school districts participated in the PFAI assessment. Unlike previous years' analyses, which were conducted using student-level FitnessGram® data, the current analyses use pre-aggregated PFAI data which comprise 26,697 campus/grade/gender groups. Because the PFAI data do not contain the Healthy Fitness Zone (HFZ) category variables previously used for the correlational analyses conducted with FitnessGram® data<sup>1</sup>, individual fitness components within the PFAI data were used for the current analyses. The following summary presents HFZ achievement percentages for each of the twelve fitness components – Body Mass Index (BMI), Percent Body Fat, PACER, One Mile Run, Curl Up, Flexed Arm Hang, Modified Pull Up, Push Up, Shoulder Stretch, Sit and Reach, Trunk Lift, and Walk Test – by gender and school level (i.e., elementary, middle, and high school). Results of correlational analyses conducted between HFZ achievement and State of Texas Assessments of Academic Readiness (STAAR) Mathematics performance, STAAR Reading performance, and students' attendance rate are also presented.

#### Fitness Achievement by Gender

For most of the twelve fitness components, the majority of Texas public school students achieved the HFZ in 2020-21. As noted below, however, results varied by fitness component and gender (see also Figure 1).

##### Females:

- On the Body Mass Index (BMI) component, 55.0% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 5 (51.5%) and highest in Grade 12 (69.4%).
- On the Percent Body Fat component<sup>2</sup>, 100.0% of females achieved the HFZ. The HFZ achievement rate was the same across all grades.
- On the PACER component, 77.0% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 7 (67.9%) and highest in Grade 3 (99.7%).
- On the One Mile Run component, 79.3% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 7 (74.5%) and highest in Grade 3 (99.8%).

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<sup>1</sup> Prior years' data included six core FitnessGram® fitness components – Abdominal Strength, Aerobic Capacity, Body Composition, Flexibility, Trunk Extensor Strength, and Upper Body Strength.

<sup>2</sup> Percent Body Fat Achieving HFZ reflects the calculation based on data reported by the LEAs - for additional information, please contact LEAs directly.

- On the Curl Up component, 71.0% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 5 (66.5%) and highest in Grade 11 (77.7%).
- On the Flexed Arm Hang component, 12.1% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 7 (8.1%) and highest in Grade 12 (19.7%).
- On the Modified Pull Up component, 12.8% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 5 (5.8%) and highest in Grade 11 (39.3%).
- On the Push Up component, 70.1% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 4 (62.4%) and highest in Grade 11 (82.3%).
- On the Shoulder Stretch component, 73.0% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 3 (64.3%) and highest in Grade 11 (79.0%).
- On the Sit and Reach component, 14.4% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 12 (9.2%) and highest in Grade 3 (17.3%).
- On the Trunk Lift component, 81.0% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 4 (72.5%) and highest in Grade 3 (90.1%).
- On the Walk Test component, 82.7% of females achieved the HFZ. The HFZ achievement rate was lowest for females in Grade 6 (25.0%) and highest in Grade 8 (91.4%).

#### Males:

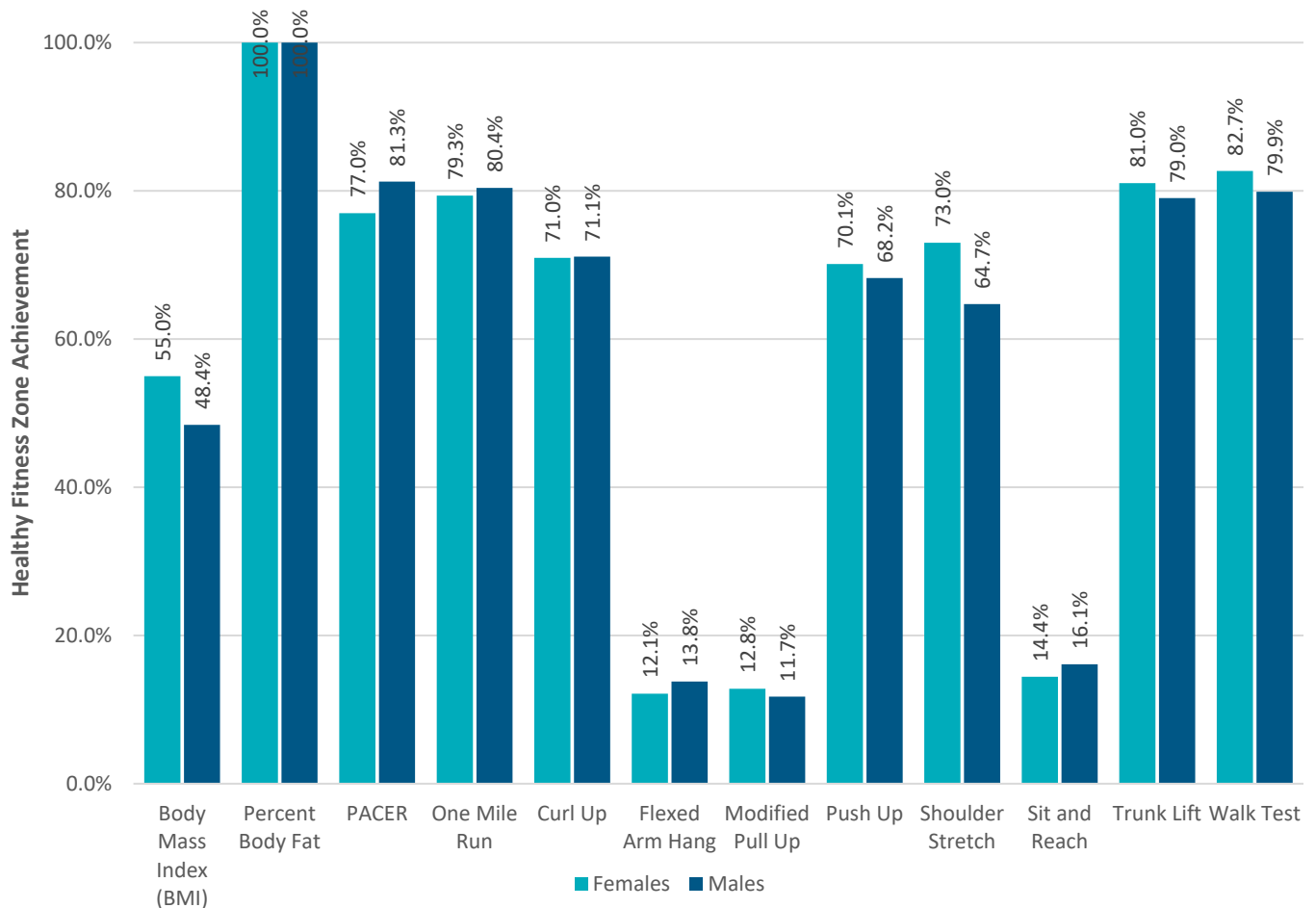
- On the Body Mass Index (BMI) component, 48.4% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 6 (44.2%) and highest in Grade 12 (59.4%).
- On the Percent Body Fat component<sup>3</sup>, 100.0% of males achieved the HFZ. The HFZ achievement rate was the same across all grades.
- On the PACER component, 81.3% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 12 (61.4%) and highest in Grade 3 (99.8%).
- On the One Mile Run component, 80.4% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 9 (68.7%) and highest in Grade 3 (99.9%).
- On the Curl Up component, 71.1% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 5 (68.3%) and highest in Grade 11 (75.3%).
- On the Flexed Arm Hang component, 13.8% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 8 (9.2%) and highest in Grade 12 (19.8%).

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<sup>3</sup> Percent Body Fat Achieving HFZ reflects the calculation based on data reported by the LEAs - for additional information, please contact LEAs directly.

- On the Modified Pull Up component, 11.7% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 5 (6.3%) and highest in Grade 11 (28.1%).
- On the Push Up component, 68.2% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 9 (62.2%) and highest in Grade 6 (72.0%).
- On the Shoulder Stretch component, 64.7% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 3 (54.8%) and highest in Grade 12 (73.1%).
- On the Sit and Reach component, 16.1% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 5 (15.0%) and highest in Grade 10 (17.1%).
- On the Trunk Lift component, 79.0% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 4 (68.7%) and highest in Grade 3 (88.5%).
- On the Walk Test component, 79.9% of males achieved the HFZ. The HFZ achievement rate was lowest for males in Grade 7 (53.1%) and highest in Grade 12 (90.2%).

Figure 1. Healthy Fitness Zone Achievement, by Fitness Component and Gender, 2020-21



## Fitness Achievement by School Level and Gender

In 2020-21, the percentage of students achieving the HFZ on each fitness component varied by gender and school level.<sup>4</sup> Results are presented below (see also Figures 2-13).

### Females:

- Body Mass Index (BMI) (Elementary: 53.1%, Middle: 53.3%, High: 62.8%)
- Percent Body Fat<sup>5</sup> (Elementary: 100.0%, Middle: 100.0%, High: 100.0%)
- PACER (Elementary: 82.9%, Middle: 68.7%, High: 71.6%)
- One Mile Run (Elementary: 88.6%, Middle: 74.9%, High: 77.1%)
- Curl Up (Elementary: 68.8%, Middle: 71.4%, High: 75.5%)
- Flexed Arm Hang (Elementary: 14.0%, Middle: 9.1%, High: 12.8%)
- Modified Pull Up (Elementary: 7.8%, Middle: 11.9%, High: 26.1%)
- Push Up (Elementary: 63.3%, Middle: 74.1%, High: 79.1%)
- Shoulder Stretch (Elementary: 68.6%, Middle: 76.2%, High: 77.7%)
- Sit and Reach (Elementary: 15.8%, Middle: 15.2%, High: 10.1%)
- Trunk Lift (Elementary: 79.3%, Middle: 80.9%, High: 85.7%)
- Walk Test (Elementary: N/A<sup>6</sup>, Middle: 86.0%, High: 80.2%)

### Males:

- Body Mass Index (BMI) (Elementary: 47.4%, Middle: 48.1%, High: 51.2%)
- Percent Body Fat<sup>5</sup> (Elementary: 100.0%, Middle: 100.0%, High: 100.0%)
- PACER (Elementary: 89.2%, Middle: 76.1%, High: 61.8%)
- One Mile Run (Elementary: 92.5%, Middle: 80.7%, High: 69.6%)
- Curl Up (Elementary: 69.4%, Middle: 73.2%, High: 71.3%)
- Flexed Arm Hang (Elementary: 16.2%, Middle: 10.1%, High: 14.3%)
- Modified Pull Up (Elementary: 6.9%, Middle: 11.9%, High: 21.4%)
- Push Up (Elementary: 68.6%, Middle: 69.5%, High: 65.3%)

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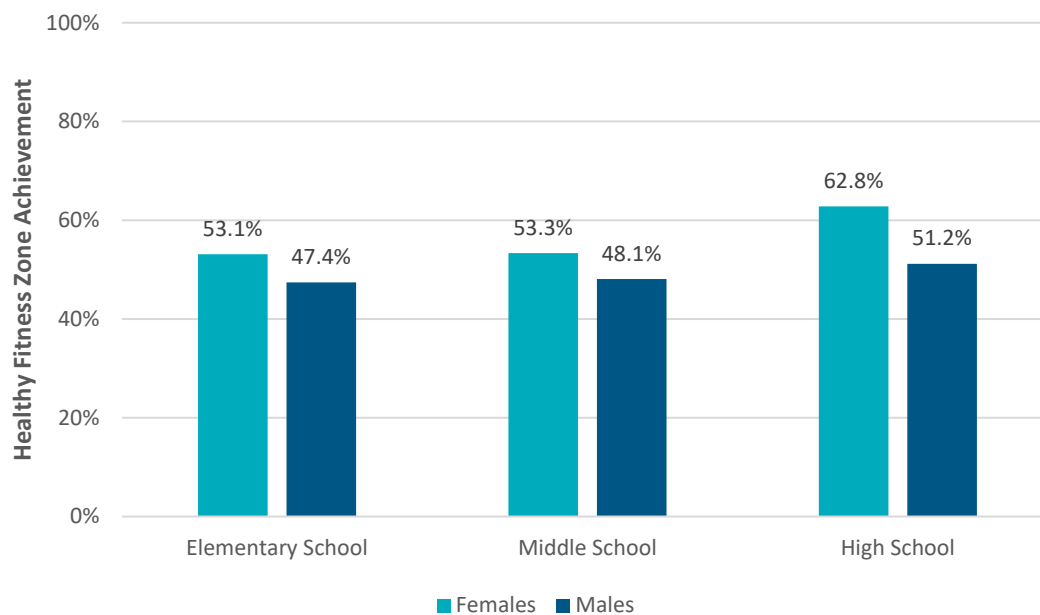
<sup>4</sup> Elementary students were in Grades 3-5, middle school students were in Grades 6-8, and high school students were in Grades 9-12. Grade levels used in the presentation of these results are based on a student's reported grade level on the Physical Fitness Assessment Initiative (PFAI).

<sup>5</sup> Percent Body Fat Achieving HFZ reflects the calculation based on data reported by the LEAs - for additional information, please contact LEAs directly.

<sup>6</sup> Data for Walk Test are not available for elementary school.

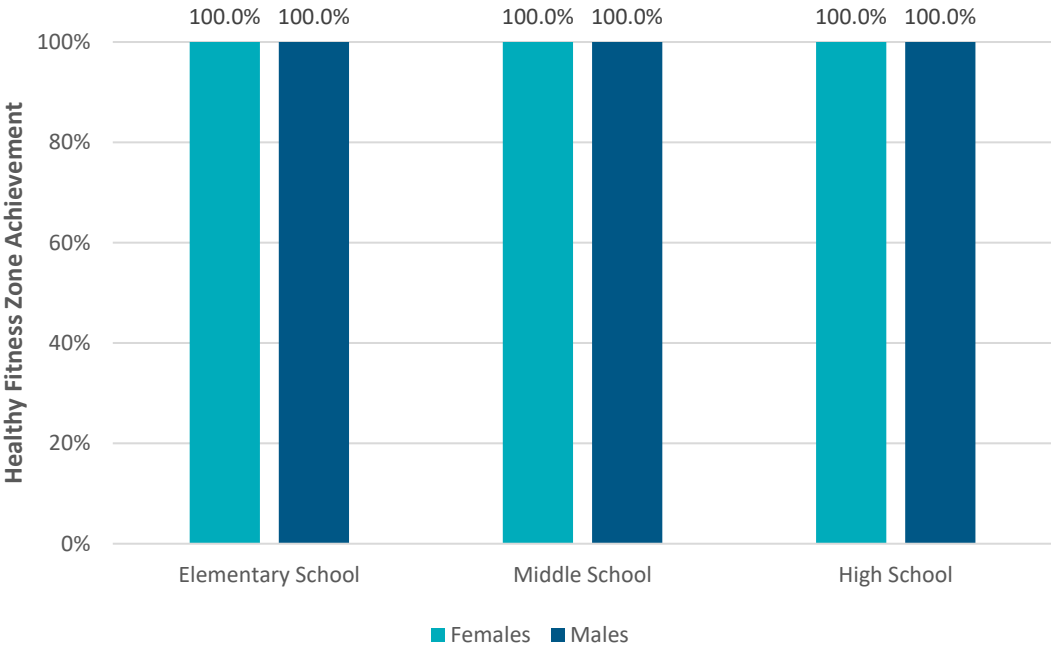
- Shoulder Stretch (Elementary: 58.5%, Middle: 69.0%, High: 71.4%)
- Sit and Reach (Elementary: 16.0%, Middle: 16.0%, High: 16.6%)
- Trunk Lift (Elementary: 76.4%, Middle: 79.7%, High: 83.7%)
- Walk Test (Elementary: N/A<sup>7</sup>, Middle: 58.0%, High: 87.1%)

**Figure 2. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Body Mass Index (BMI)**

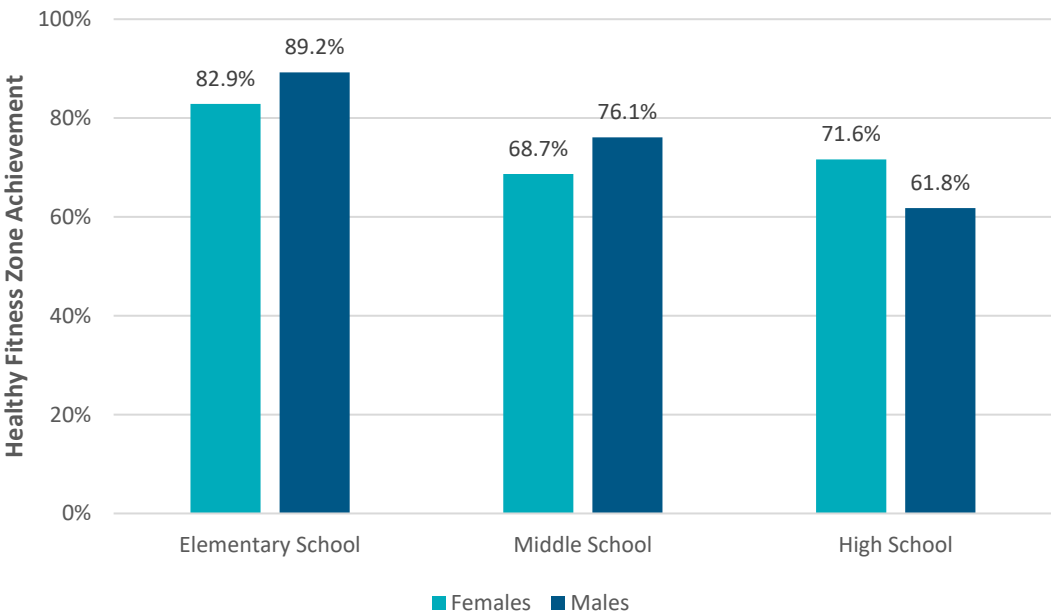


<sup>7</sup> Data for Walk Test are not available for elementary school.

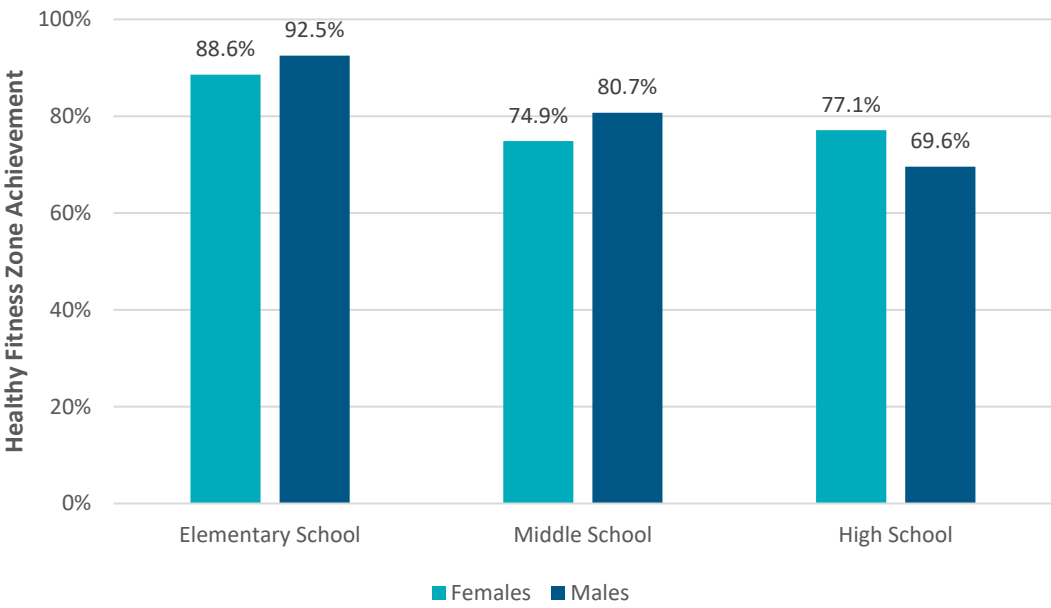
**Figure 3. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Percent Body Fat**



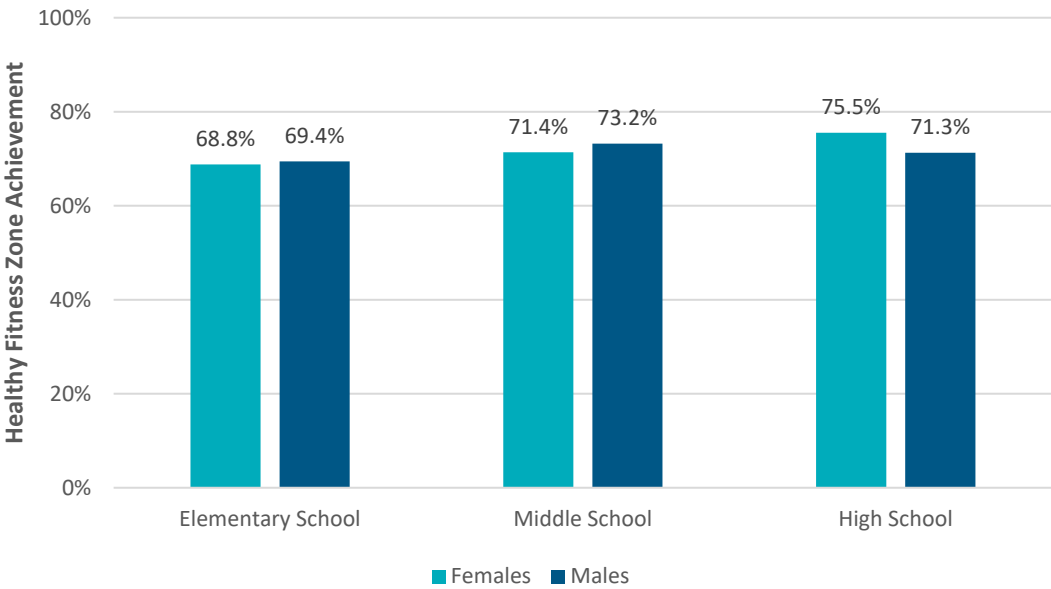
**Figure 4. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, PACER**



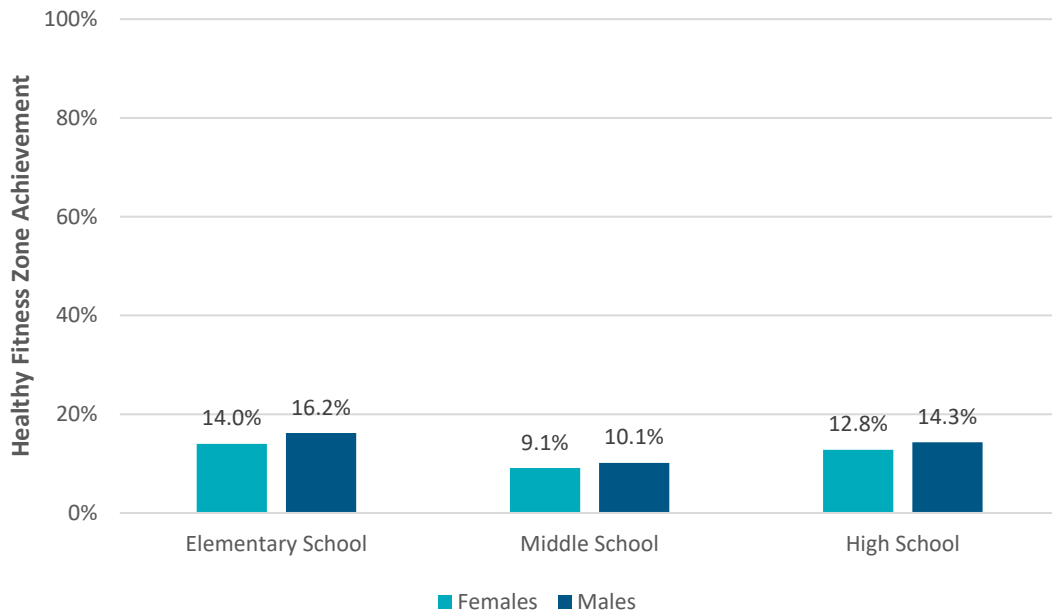
**Figure 5. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, One Mile Run**



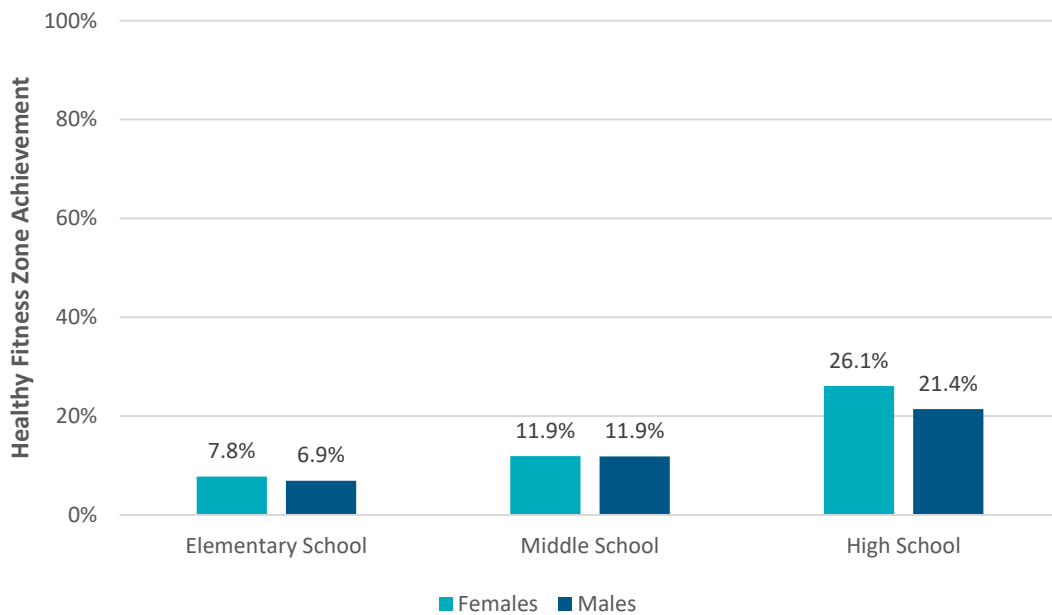
**Figure 6. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Curl Up**



**Figure 7. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Flexed Arm Hang**

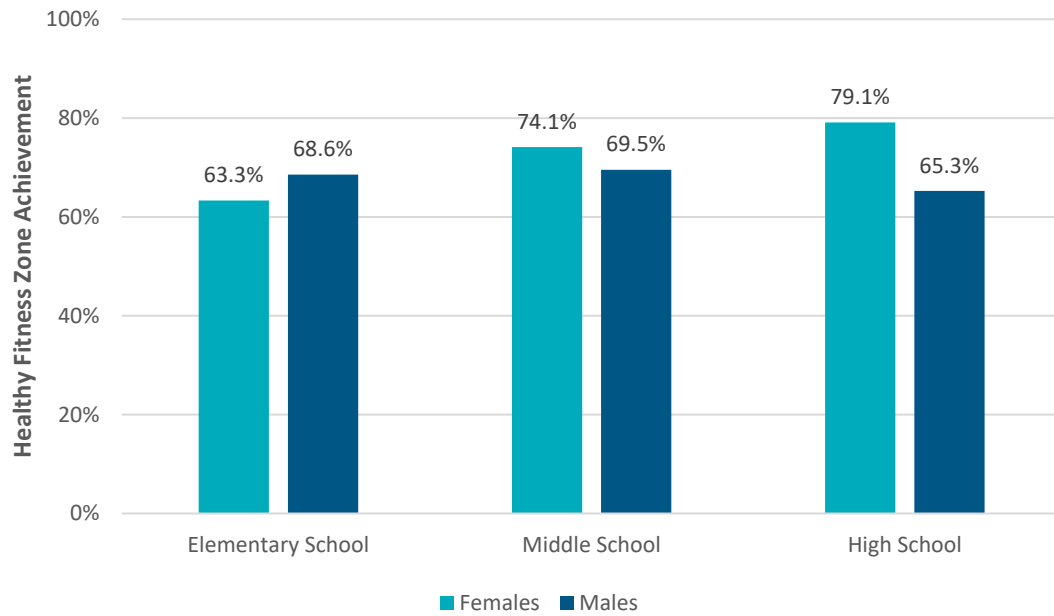


**Figure 8. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Modified Pull Up**

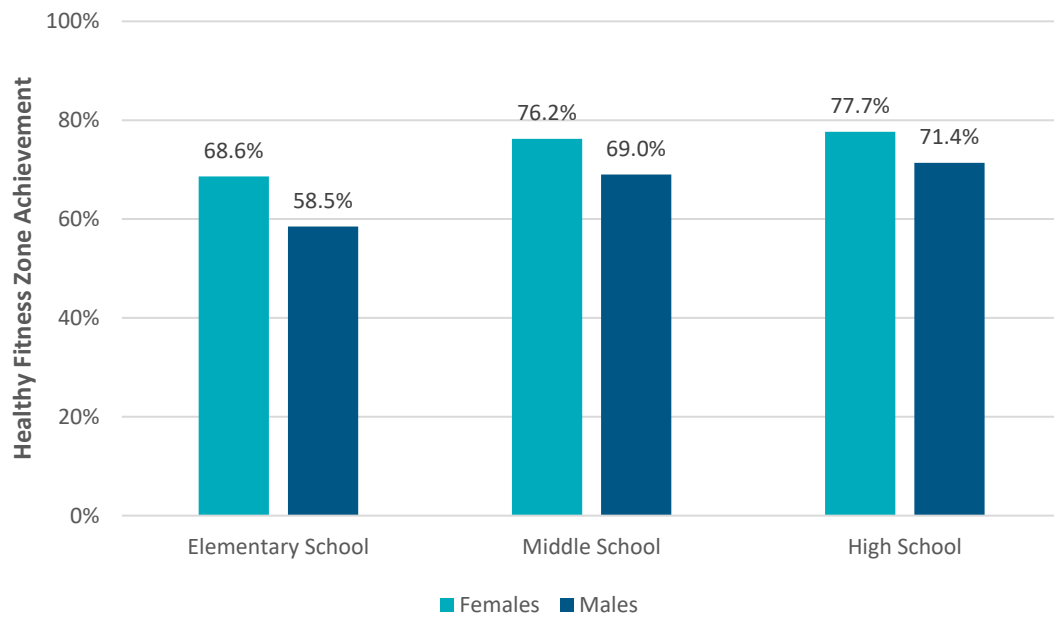




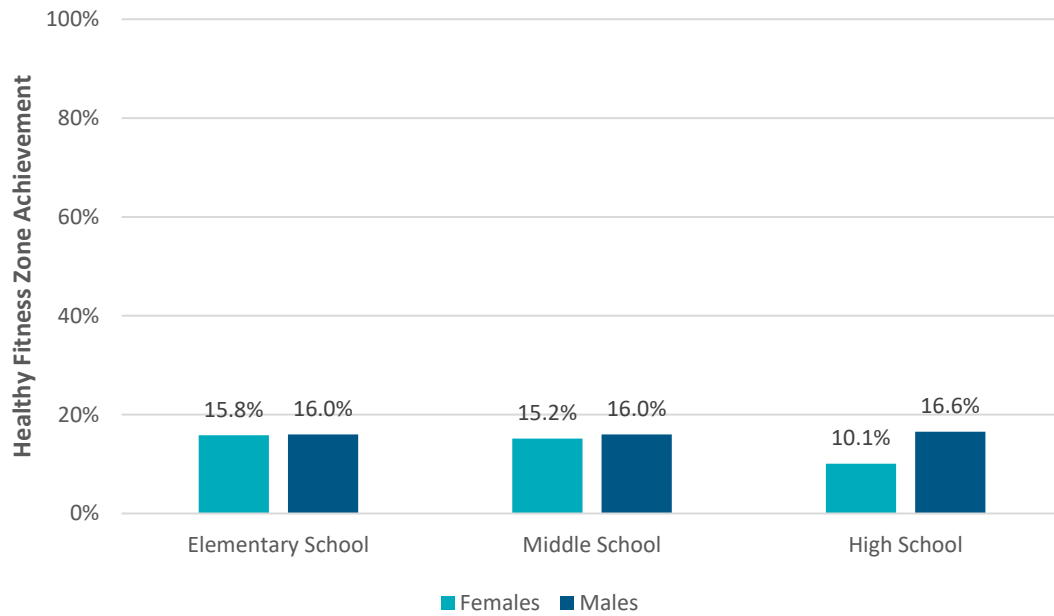
**Figure 9. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Push Up**



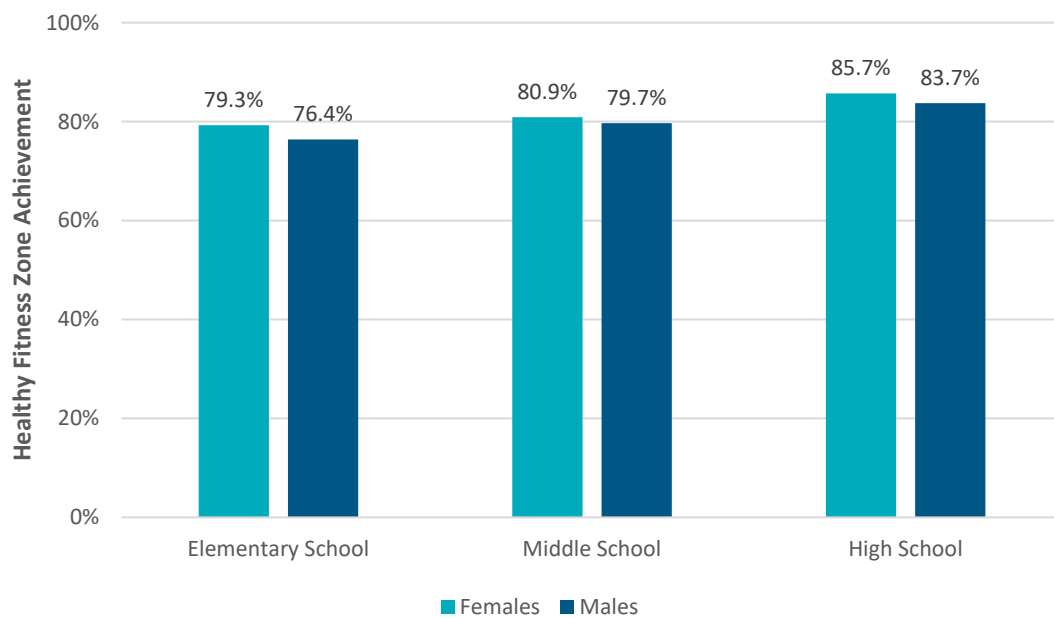
**Figure 10. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Shoulder Stretch**



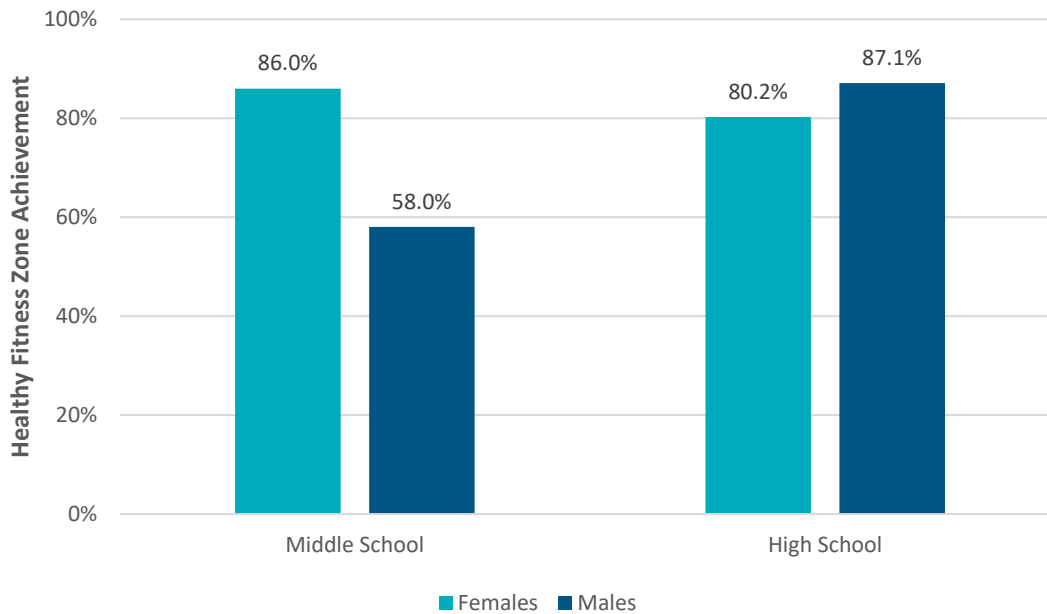
**Figure 11. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Sit and Reach**



**Figure 12. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Trunk Lift**



**Figure 13. Healthy Fitness Zone Achievement, by School Level and Gender, 2020-21, Walk Test**



## Associations between HFZ Achievement and Academic Indicators

Correlational analyses were conducted to examine associations between PFAI HFZ achievement and academic indicators. Among the academic indicators examined in 2020-21 were STAAR Mathematics performance, STAAR Reading performance, and students' attendance rate.

Achievement on most of the eleven<sup>8</sup> fitness components were found to be positively correlated with the academic indicators, and most of these correlations were statistically significant. However, the strength of these associations was very weak to weak ( $r_s < .40$ ). In other words, there was a weak linear relationship between HFZ achievement and academic indicators. It is worth noting that within extremely large sample sizes, such as those analyzed in this report, very small correlations can be statistically significant. As such, these correlations, although statistically significant, may not necessarily be meaningful.

Current analyses were conducted using pre-aggregated PFAI data and therefore should not be compared to analyses of FitnessGram® data from previous years. Additionally, because PFAI data are pre-aggregated, it is impossible to match fitness measures to academic outcome data on an individual level. Results of the correlational analyses should be interpreted with extreme caution.

- The correlation coefficients between HFZ achievement and STAAR Mathematics performance were very weak to weak and ranged from -0.165 (Flexed Arm Hang) to 0.299 (Body Mass Index (BMI)).

<sup>8</sup> Correlations on the Percent Body Fat component were removed because data availability was limited to a small number of districts.

- The correlation coefficients between HFZ achievement and STAAR Reading performance were very weak to weak and ranged from -0.126 (Flexed Arm Hang) to 0.368 (Body Mass Index (BMI)).
- The correlation coefficients between HFZ achievement and attendance rate were very weak to weak and ranged from -0.046 (Sit and Reach) to 0.233 (Body Mass Index (BMI)).