

STRICTLY PRIVATE AND CONFIDENTIAL

PHYSICAL ACTIVITY INTERVENTION PROGRAMME 2020-2021

Report for

Rackets Cubed: Baseline Findings





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Introduction

Background

In September 2020, Rackets Cubed began a yearlong educational and physical activity intervention project for selected pupils from seven primary schools across the country.

The intervention is targeted at pupils from Years 1, 2, 3, 4, 5 and 6 to help improve their health, fitness and basic maths skills.

Children from these year groups are provided with weekly after schools coaching sessions in tennis and squash. These are run alongside maths coaching sessions. After the sessions, children are provided with a hot meal.

Fitmedia have been engaged to carry out an evaluation of the project on the children's physical fitness and on their mental wellbeing.

Fitmedia designed a testing system which would assess the impact of the programme on these areas. The assessments would take place at the beginning of the project (September 2020) and at the end of the project (July 2021). This would provide evidence of the impact of the project.

In addition, the first set of testing, taking place in September 2020, would provide an indication of the impact of the closure of schools following the Covid-19 health crisis. The first set of testing would therefore give an indication of how the school closures, national lockdown and social restrictions had impacted on the children over the previous six months.

A complete list of the schools and institutions taking part in the project is contained in the table overleaf.



RACKETS CUBED EDUCATION AND ACTIVITY PROJECT 2020-2021

PARTICIPATING SCHOOLS AND INSTITUTIONS

School	Location	District and area	Year Groups involved	Number of children participating	Physical Fitness Assessment?	Mental Wellbeing Assessment?
Billesley Primary School	Birmingham B13 OES	Birmingham, West Midlands	3,4,5	112	V	V
Croft Academy	Walsall WS2 8JE	Walsall, West Midlands	1,2,3,4,5	135	V	×
Heathmere School	London SW15 5PU	Wandsworth, London	5,6	43	V	V
Highlees Primary School	Peterborough PE3 8EZ	Peterborough, Northamptonshire	3,4,5,	163	V	V
Parkfield Primary School	London NW4 3PJ	Barnet, London	3,4,5,6	208	V	V
Pinkwell Primary School	London UB3 9PG	Middlesex, London	3,4,5,6	283	V	V
Sacred Heart Primary School	London SW15 5LR	Wandsworth, London	3,4,5,6	223	V	×



Assessment Method: Physical Fitness

To evaluate the impact of the sessions, at the beginning their levels of **physical fitness** were measured using the following tests:

- **Standing Broad Jump** This test measures the maximum horizontal distance a child can jump. It measures both their coordination (as it requires coordination between leg and arm action) and lower body strength and leg power. The results of this test are benchmarked against reference norms, which show how the children should have done based on their age and sex, which then provides a **percentile result**, to show how well the children performed.
- Agility Run For this test the children are required to run up and down 10 times between two lines as fast as they can. This measures their agility, which is one of the most important physical movement skills. Agility is key for participation in most physical activity, as many sports and activities are multi-directional (requiring movement and coordination in different directions). Because of the way the test is laid out, it also measures speed and coordination. Agility also helps children move better, which helps long term injury prevention. As with the Standing Broad Jump, the results of this test are benchmarked against reference norms, which show how the children should have done based on their age and sex, which then provides a percentile result, to show how well the children performed.

Results Analysis

For both tests, the scores from the tests were analyzed using the Fitmedia unique benchmarking system.

In this system, the score obtained is benchmarked against what their distance **should have been**, based on their age and their gender. This gives a **percentile ranking**, showing how well the participant would have done against their peers at a national level.

This provides a completely objective way of assessing fitness for each child's gender and stage of development. For example, a handgrip score of 29.1kg for a boy in Year 6 would give a percentile ranking of 99, indicating that they scored better than 99% of the people of the same age and gender who took the same test.



The results from these three tests are then aggregated to provide an Aggregate fitness level, also ranked as a percentile.

For ease of reference, the percentile rankings are then divided into five categories, shown overleaf:

90 th percentile and above	Result gives a ranking of 90th percentile or above - an excellent or outstanding performance. These children show a high level of fitness and a strong aptitude for physical activity and should be encouraged to pursue sports further
70 th -90 th percentile	Result gives a ranking of between 70th and 90th percentile - a very good performance – these children show strong potential and with a small increase in effort could move up to the elite category
50-70 th percentile	Result gives a ranking of between 50th and 70th percentile - a level expected for their age and gender. These children are showing the average level of fitness for their age
20 th -50 th percentile	Result gives a ranking of between 20th and 50th percentile - a level lower than expected for their age and gender. These children have a level of fitness lower than average, but can improve very easily with a small increase in physical activity.
0-20 th percentile	Result gives a ranking of 20th percentile or lower - a level considerably lower than recommended for good health and fitness. This is widely regarded as the "cut off" point for good health. Children with these rankings are showing a very low level of fitness and should be strongly encouraged to increase their levels of physical activity to ensure their long term good health.

Percentile categories and meanings

Assessment Method: Mental Wellbeing

The children's wellbeing was measured using a questionnaire, assessing confidence and assurance. The questionnaire comprised 10 questions across three categories, as follows:

- 1. Four questions about how they felt about doing activity outside school
- 2. Four questions about how they felt about doing sport
- 3. Two questions about concentrating and learning at school.

An example of the questionnaire is attached as an appendix to this report.



Results Analysis

The responses for these categories were analyzed and assessed to provide a score for each area. The scoring worked as follows:

Category 1: (four questions)	Activity outside school	 Top Category – High levels of confidence about doing PE Middle Category - Average levels of confidence about doing PE Bottom Category - Low levels of confidence about doing PE
Category 2: (four questions)	Sport	 Top Category – High confidence for doing activity outside school Middle Category - –Average confidence for doing activity outside school Bottom Category - – Low confidence for doing activity outside school
Category 3: (two questions)	Learning and concentrating	 Top Category – Confident about learning and concentrating at school Lower Category - Less confident about learning and concentrating at school

This report summarises the results of the first set of testing on the Year Groups across all the schools involved.

NOTE:

Of the seven schools taking part in the programme, two schools (Croft and Sacred Heart) did not take part in the wellbeing survey.

The results therefore exclude these schools.

In the remaining five schools most of the children took part in both assessments.

However in some instances some children only took part in the physical fitness tests.



Year 6 – Physical Fitness

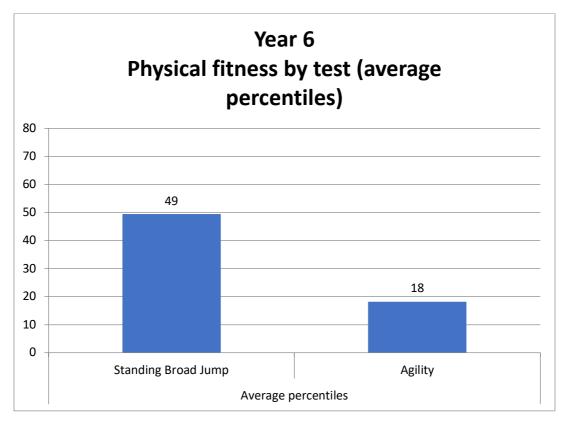
Overview

214 children from Year 6 from the following schools took part in the assessment:

- Heathmere (28 children 13 girls and 15 boys)
- **Parkfield** (57 children 29 girls and 28 boys)
- **Pinkwel**I (72 children 27 girls and 45 boys)
- Sacred Heart (57 children 25 girls and 32 boys).

Physical fitness

The graph below shows how this year group performed, on average, on each test:



As can be seen, the Year 6s performed considerably better on the Standing Broad Jump. Their average percentile for the Agility Run was extremely low (18th percentile), showing very low levels of agility.

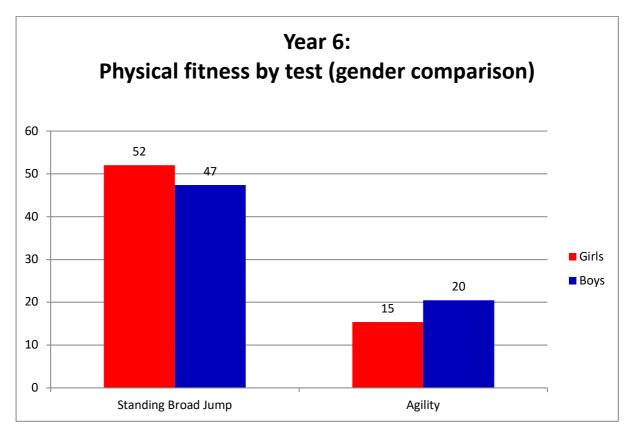


This is not unusual in older children; agility is heavily predicated on activity, and children get less active as they age. However, it should be noted that an average percentile of less than 20 is considerably lower than recommended for good health.

Results by gender

There were 94 girls and 120 boys in the Year 6 Group across all the schools.

The graph below shows how each gender in this Year Group performed on the tests:



As can be seen, the girls outperformed the boys on the Standing Broad Jump, but were weaker on the Agility Run.



Year 6 - Mental Wellbeing

Overview

As stated above, the children's wellbeing was measured using a wellbeing questionnaire, assessing confidence and assurance. The questionnaire comprised 10 questions across three categories, as follows:

- 1. Four questions about how they felt about doing activity outside school
- 2. Four questions about how they felt about doing sport
- 3. Two questions about concentrating and learning at school.

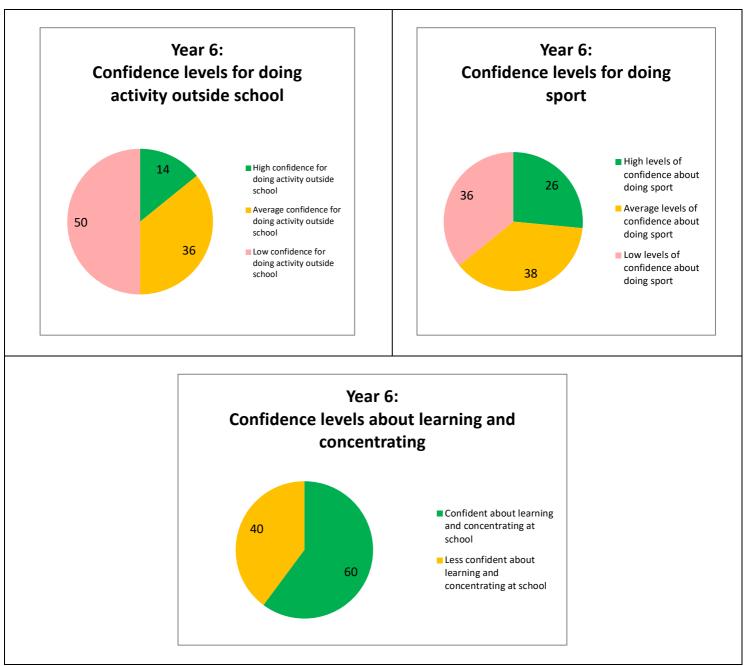
PSE Surveys for Year 6 were available from 140 children from the following schools:

- Billesley
- Heathmere
- Parkfield
- Pinkwell

The charts overleaf summarise how the Year 6s felt about each area:







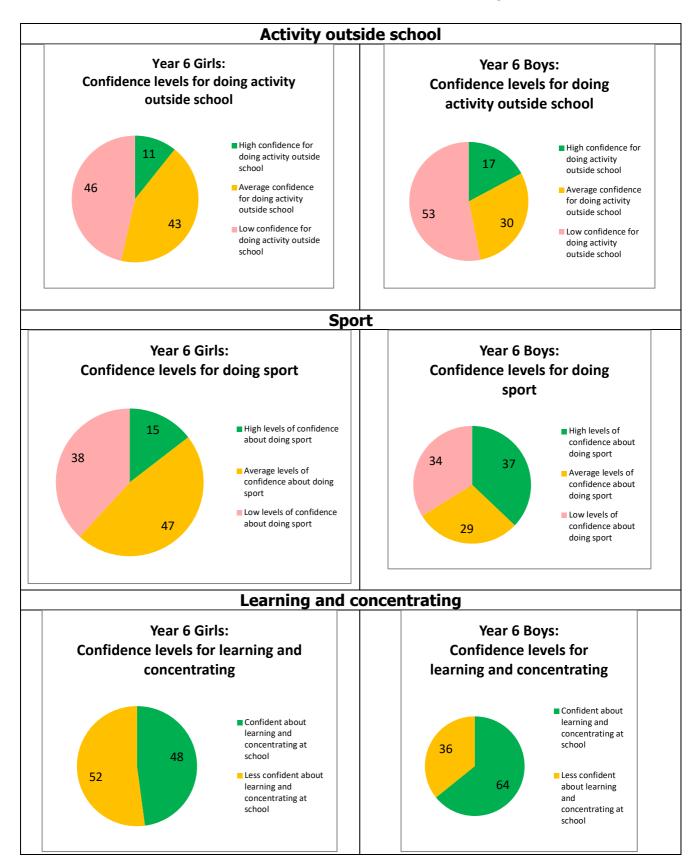
As can be seen, the Year 6s confidence levels for doing both activity and sport were low: only 14% felt very confident about doing activity outside school and only 26% felt very confident about doing sport.

There was much more confidence about education, with 60% feeling very confident about learning and concentrating.



Wellbeing breakdown by gender

The charts below summarise the levels of confidence across each gender:





As can be seen, there was variation between the genders across each category in this age group.

Both genders had low levels of confidence for doing activity outside school; however, the boys were considerably more confident about doing sport, with nearly 37% feeling very confident in this area (as against only 15% of the girls).

The girls were also much less confident about learning at school: only 48% had high levels of confidence in this area, as against 64% of the boys.



Year 5 – Physical Fitness

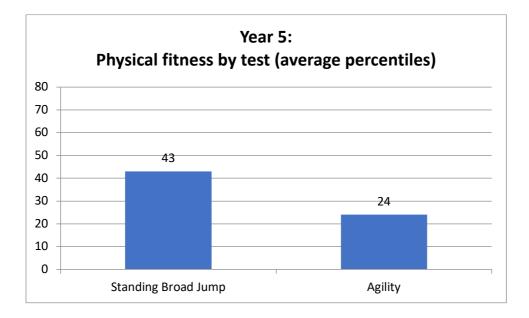
Overview

331 children from Year 5 from the following schools took part in the assessment:

- **Billesley** (44 children 19 girls and 25 boys)
- **Croft** (30 children 17 girls ad 13 boys)
- **Heathmere** (25 children 14 girls and 11 boys)
- **Highlees (**47 children 22 girls and 25 boys)
- **Parkfield** (56 children 35 girls and 21 boys)
- **Pinkwell** (76 children -41 girls and 35 boys)
- **Sacred Heart** (53 children 23 girls and 30 boys).

Physical fitness

The graph below shows how this year group performed, on average, on each test:



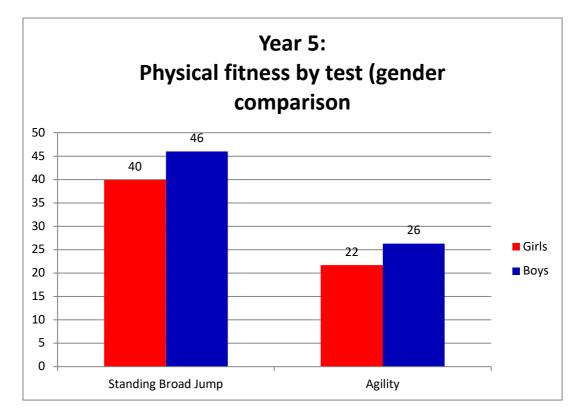


As can be seen, the Year 5s performed considerably better on the Standing Broad Jump than on the Agility Run, where the average percentile was only 24.

Results by gender

There were 171 girls and 160 boys in the Year 6 Group across all the schools.

The graph below shows how each gender in this Year Group performed on the tests:



As can be seen, the boys outperformed the girls on both tests.



Year 5 - Mental Wellbeing

Overview

As stated above, the children's wellbeing was measured using a wellbeing questionnaire, assessing confidence and assurance. The questionnaire comprised 10 questions across three categories, as follows:

- 1. Four questions about how they felt about doing activity outside school
- 2. Four questions about how they felt about doing sport
- 3. Two questions about concentrating and learning at school.

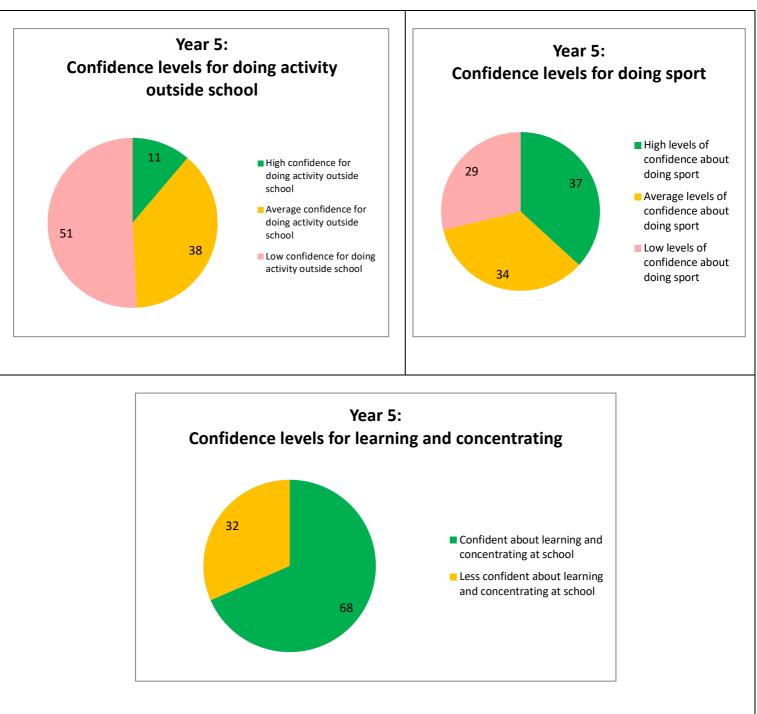
PSE Surveys for Year 5 were available from 232 children from the following schools:

- Billesley
- Heathmere
- Highlees
- Parkfield
- Pinkwell

The charts overleaf summarise how the Year 5s felt about each area:







As can be seen, the confidence levels for doing activity outside school, with only 11% feeling very confident in this area, and 51% feeling very unconfident.

The levels of confidence for doing sport were much higher, with nearly 37% feeling very confident.

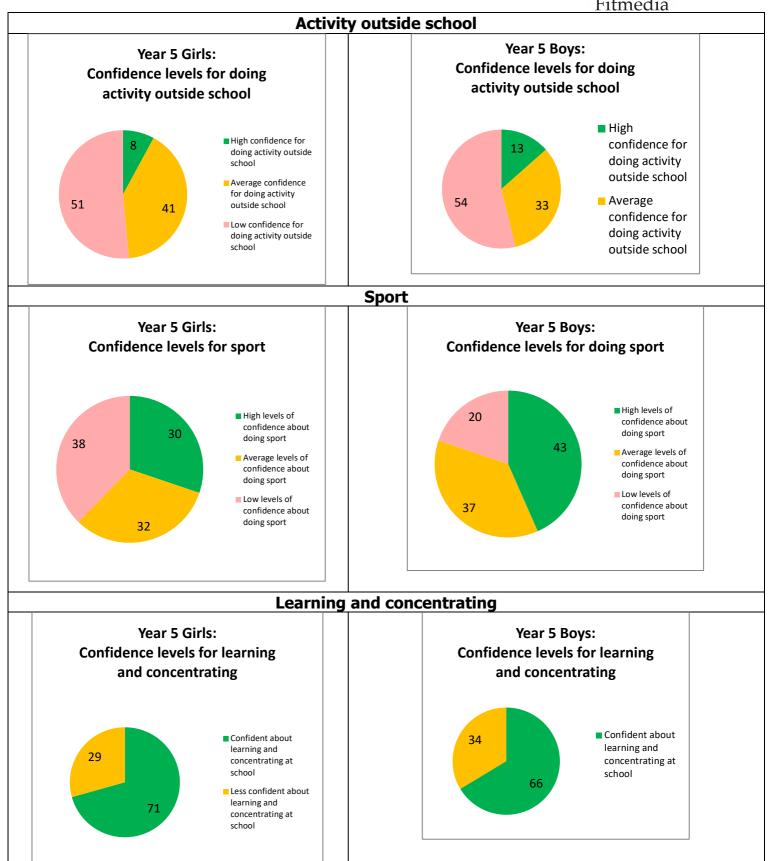


The confidence levels for learning and concentrating were also very high, with nearly 70% of the Year 5s feeling very confident in this area.

Wellbeing breakdown by gender

The charts overleaf summarise the levels of confidence across each gender for the Year 5s:







As can be seen, the results for the Year 5 children were mixed.

Both genders had similar levels of confidence about doing activity outside school.

However, the boys were significantly more confident about doing sport, with nearly 43% feeling very confident in this area.

The girls were more confident about learning, with over 70% feeling very confident in this area.



Year 4 – Physical Fitness

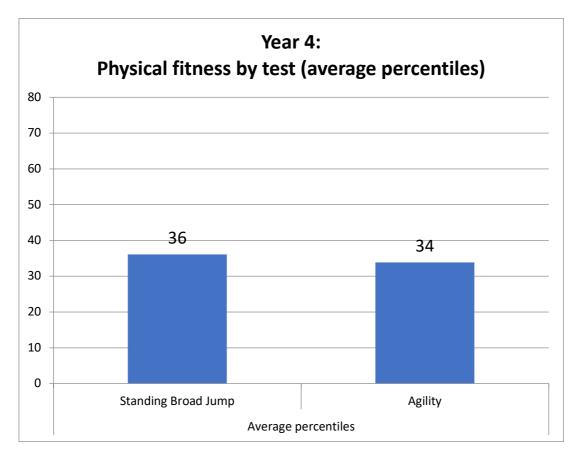
Overview

294 children from Year 4 from the following schools took part in the assessment:

- **Billesley** (22 children –12 girls and 10 boys)
- Croft (30 children 15 girls and 15 boys))
- **Highlees** (59 children 31 girls and 28 boys)
- **Parkfield** (47 children 21 girls and 26 boys)
- **Pinkwell** (80 children 43 girls and 37 boys))
- **Sacred Heart** (56 children 32 girls and 24 boys).

Physical fitness

The graph below shows how this year group performed, on average, on each test:



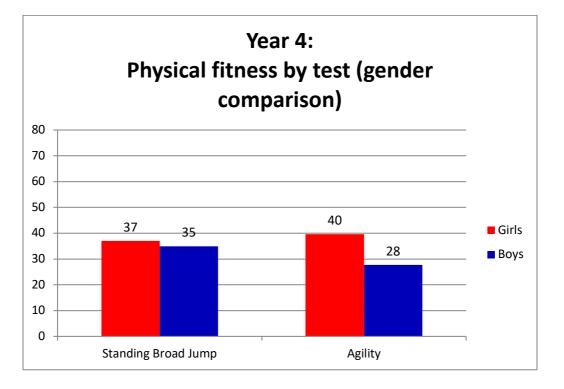


As can be seen, the Year 4s performed broadly the same on both tests, with a slightly weaker performance in agility.

Results by gender

There were 94 girls and 120 boys in the Year 6 Group across all the schools.

The graph below shows how each gender in this Year Group performed on the tests:



As can be seen, the girls outperformed the boys on both tests, with the difference particularly large in the Agility Run.



Year 4 - Mental Wellbeing

As stated above, the children's wellbeing was measured using a wellbeing questionnaire, assessing confidence and assurance. The questionnaire comprised 10 questions across three categories, as follows:

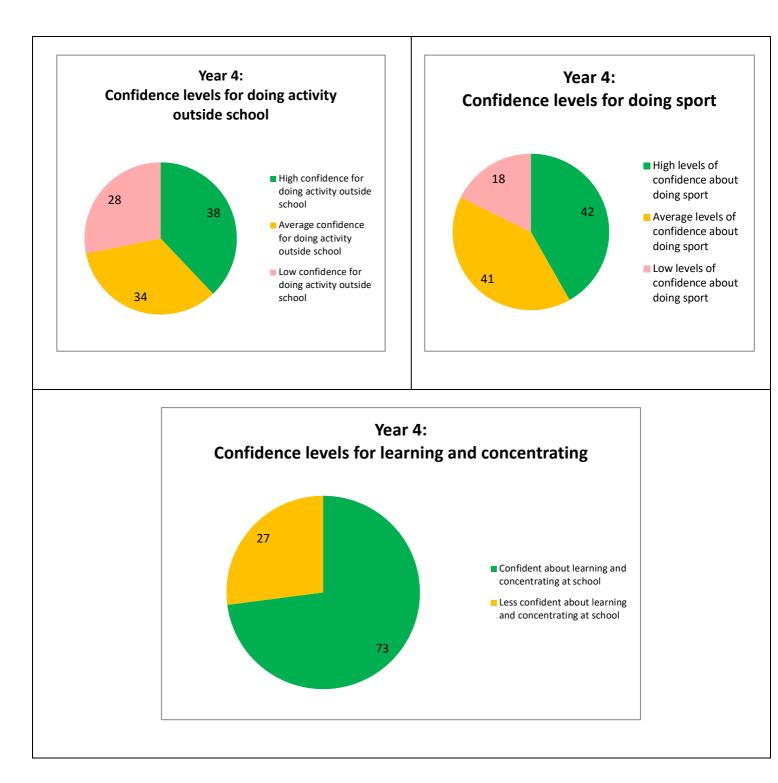
- 1. Four questions about how they felt about doing activity outside school
- 2. Four questions about how they felt about doing sport
- 3. Two questions about concentrating and learning at school.

PSE Surveys for Year 4 were available from 213 children from the following schools:

- Billesley
- Highlees
- Parkfield
- Pinkwell

The charts overleaf summarise how the Year 4s felt about each area:







As can be seen, the confidence levels across all three categories were very high for the Year 4s.

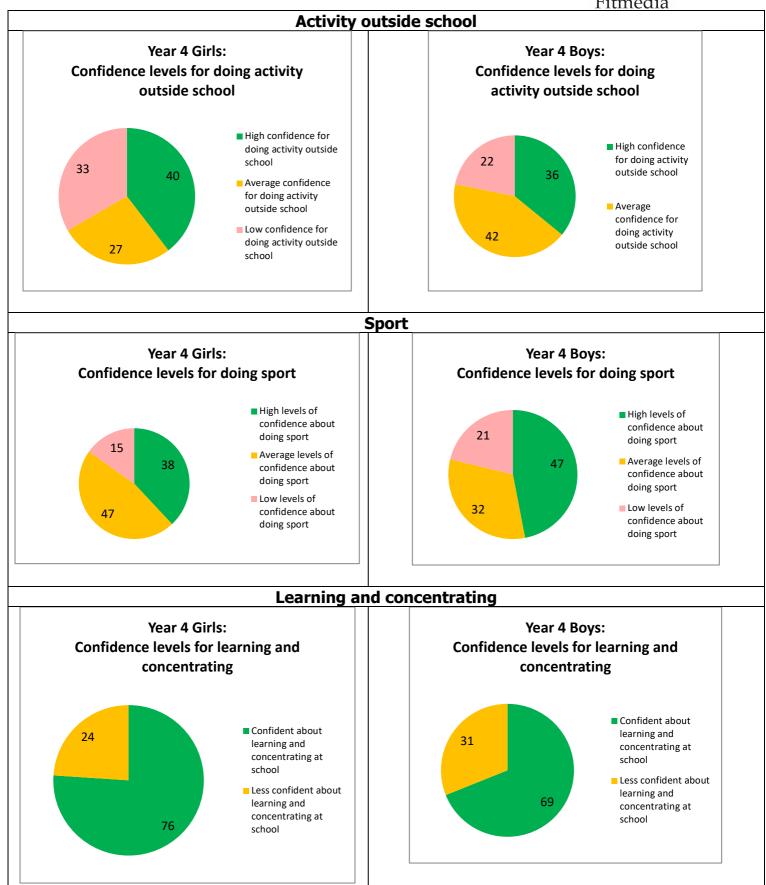
38% of the children felt very confident about doing activity outside school and 42% felt very confident about doing sport.

Nearly 73% felt very confident and learning and concentrating.

Wellbeing breakdown by gender

The charts overleaf summarise the levels of confidence across each gender for the Year 4s:







As can be seen, the results for the Year 4s are very similar to those of the Year 5s.

The girls seemed to be more confident about doing activity outside school, but the boys are much more confident about doing sport.

However, the girls are more confident about learning in school.



Year 3 – Physical Fitness

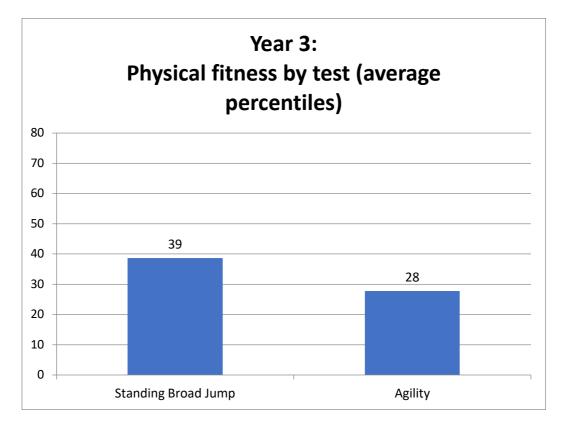
Overview

313 children from Year 3 from the following schools took part in the assessment:

- **Billesley** (46 children 25 girls and 21 boys)
- **Croft** (29 children 18 girls and 11 boys
- **Highlees** (57 children 27 girls and 30 boys)
- **Parkfield** (48 children 18 girls and 30 boys)
- **Pinkwell** (76 children 40 girls and 36 boys)
- **Sacred Heart** (57 children 31 girls and 26 boys).

Physical fitness

The graph below shows how this year group performed, on average, on each test:



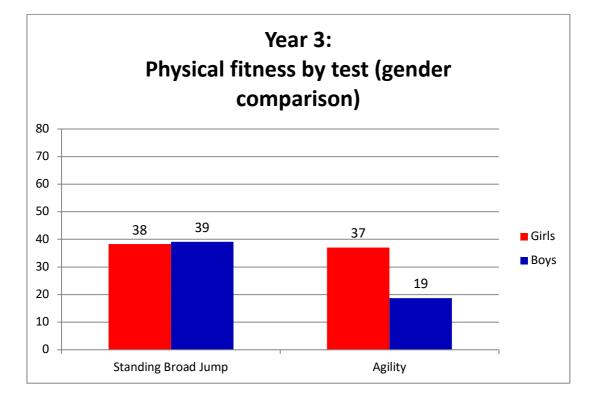


As can be seen, the Year 3s performed considerably better in the Standing Broad Jump (average percentile 39) than in the Agility Run (average percentile 28).

Results by gender

There were 159 girls and 154 boys in the Year 6 Group across all the schools.

The graph below shows how each gender in this Year Group performed on the tests:



As can be seen, the two genders were evenly matched in the Standing Broad Jump: however, the girls significantly outperformed the boys in agility.



Year 3 - Mental Wellbeing

As stated above, the children's wellbeing was measured using a wellbeing questionnaire, assessing confidence and assurance. The questionnaire comprised 10 questions across three categories, as follows:

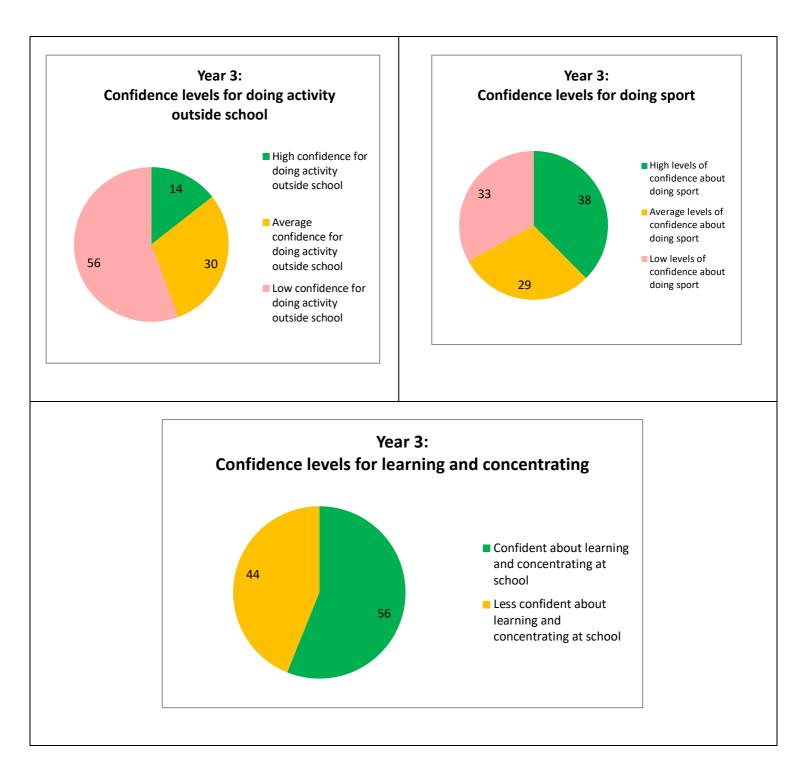
- 1. Four questions about how they felt about doing activity outside school
- 2. Four questions about how they felt about doing sport
- 3. Two questions about concentrating and learning at school.

PSE Surveys for Year 3 were available from 228 children from the following schools:

- Billesley
- Highlees
- Parkfield
- Pinkwell

The charts overleaf summarise how the Year 3s felt about each area:





As can be seen, the results for the Year 3 children were mixed. The majority (56%) felt very unconfident about doing activity outside school. However, they felt more confident about doing sport, and 56% felt very confident about learning and concentrating.



Wellbeing breakdown by gender

The charts below summarise the levels of confidence across each gender:





As can be seen, the Year 3 boys were more confident about doing activity outside school than the girls; they were also considerably more confident about doing sport.

Hover, the girls were more confident about learning.



Year 2

Overview

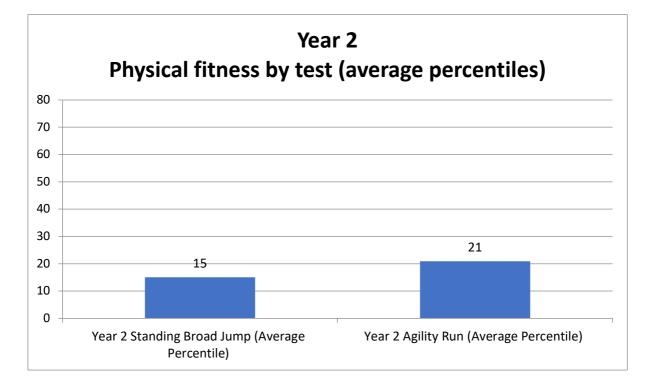
Croft Primary School was the only school whose Year 2 pupils took part in the programme.

27 children in Year 2 took part (19 boys and 8 girls).

The Year 2 pupils did not take part in the wellbeing survey, so results are available only in relation to their physical fitness.

Overall results

The graph below shows how this year group performed, on average, on each test:

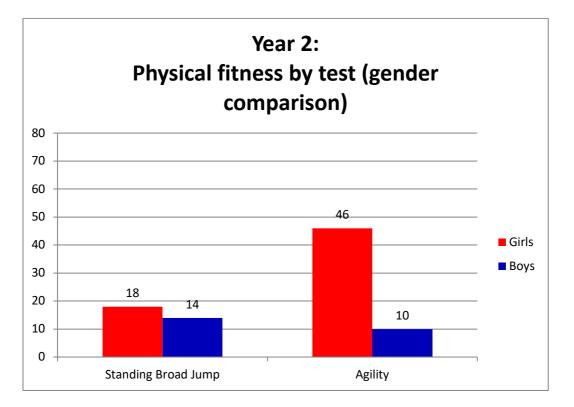


As can be seen, the average percentiles for this year group were very low. For the Standing Broad Jump it was 15, which is below 20, regarded as the "cut off" point for good health. The average percentile for the Agility was also very low, at 21, which is considerable lower than would be expected.



Results by gender

The graph below shows how each gender performed on the tests:



As can be seen, the girls outperformed the boys considerably on the Agility Run, with a much higher average percentile.

The two genders were more evenly matched on the Standing Broad Jump, but both performed very weakly on this test.



Year 1

Overview

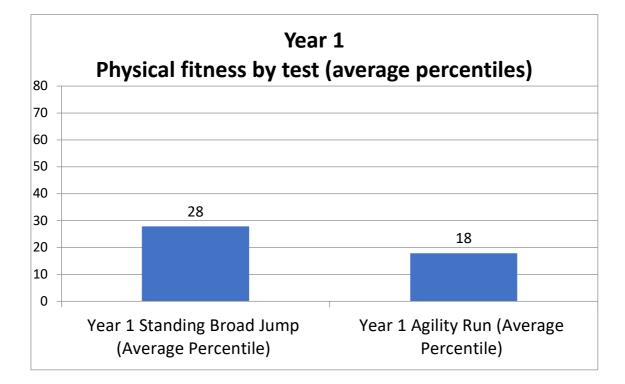
Croft Primary School was the only school whose Year 1 pupils took part in the programme.

19 children in Year 1 took part (9 girls and 10 boys).

The Year 1 pupils did not take part in the wellbeing survey, so results are available only in relation to their physical fitness.

Overall results

The graph below shows how this year group performed, on average, on each test:



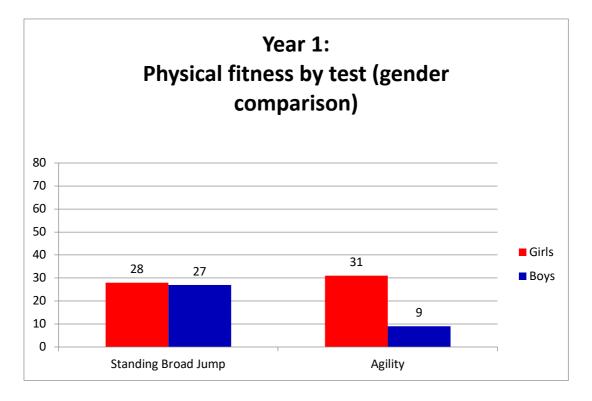
As can be seen, the average percentile results for this year group were very low. For the Standing Broad Jump it was 28, which is considerably lower than would be expected.



For agility, it was 18, which is below 20, which is regarded as the "cut off" point for good health.

Results by gender

The graph below shows how each gender performed on the tests:



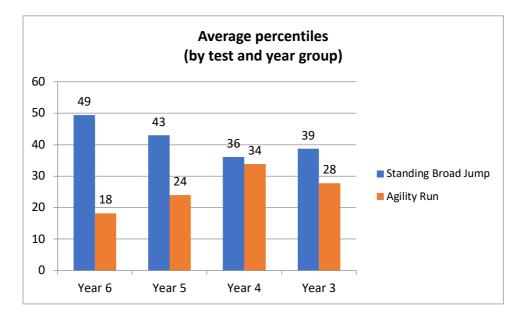
As can be seen, the genders were well matched on the Standing Broad Jump; however, the girls performed considerably better on the Agility Run, leading to a much higher average percentile.



Summary of key findings

Physical fitness

1. The graph below summarises how each year group performed on each test¹:



- 2. As can be seen, for all the year groups, their strongest test was the Standing Broad Jump and their weakest was the Agility Run.
- Levels of fitness were extremely low for both tests. On the Standing Broad Jump, the average percentile was below the 50th percentile, indicating much weaker than expected fitness.
- 4. The levels were even weaker for the Agility Run, with the average percentile below 35 considerably lower than expected.
- 5. The Year 4s were the most consistent, with a difference of only 2 percentile points between the two tests the other year groups showed a considerable difference between the two. (9 points for the Year 3s, 19 for the Year 5s and 31 for the Year 6s).

¹ We have excluded Years 1 and 2 from this analysis, as only one school assessed in these Year groups and so the sample size is too small to be representative.



- 6. There was almost a direct correlation with age and performance on the tests, with the older age groups performing better on the Standing Broad Jump and much more weakly on the Agility Run.
- 7. This is in line with our experience agility is heavily predicated on activity, as children get less active as they age, as educational, social and cultural pressures take precedence. Agility most commonly peaks in Year 3-4 and usually declines from there. However, performance in the Standing Broad Jump is a good indicator of lower body strength and muscular leg power, which increases as children age.
- 8. However, the percentiles for all the tests are significantly lower than we have found in past tests.
- For example, a summary of results from previous Rackets Cubed projects, (2018-2019, 2019-2020), shows average percentiles for these tests in Years 4 and 5 were much higher. This is summarised in the tables below:

Year 4 Average Percentiles			Year 5 Average Percentiles		
Standing Broad Jump			Standing Broad Jump		
November 2018	64		November 2018	77	
October 2019	52		October 2019	54	
September 2020	36		September 2020	43	
Agility Run			Agility Run		
November 2018	44		November 2018	66	
October 2019	51		October 2019	43	
September 2020	34		September 2020	24	

 This would indicate a significant drop in the baseline levels of both tests, compared to the same time in the previous years².

² It should be noted that this cannot act as a direct comparison, as the cohorts from each set of tests were of different children and of different numbers. However, it illustrates how the fitness levels in September 2020, compared to the same time in previous years, seem to be significantly lower.



Mental wellbeing

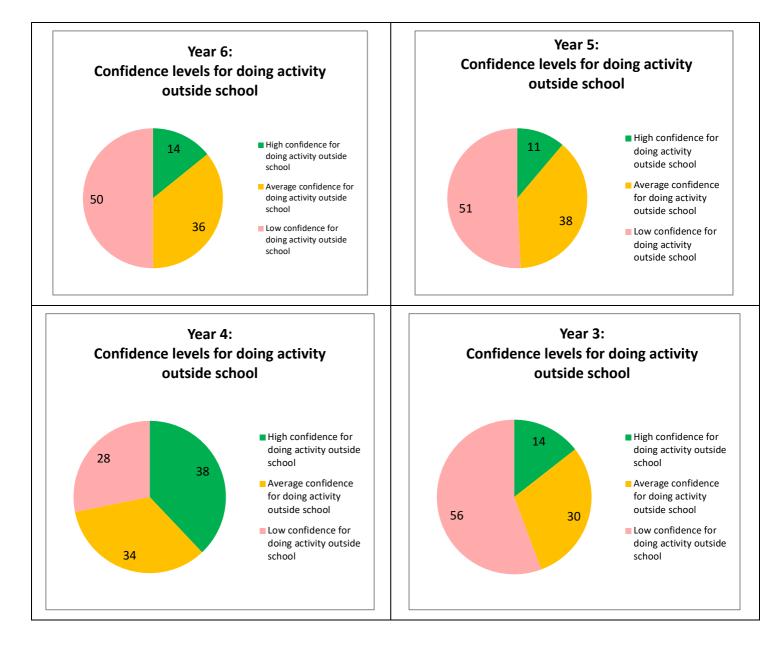
Of the three areas examined, the children were the most confident in learning and concentrating, indicating that they felt positive about this aspect of school life.

They were the least confident in doing activity outside school.

The areas are summarised below:

Confidence for doing activity outside school

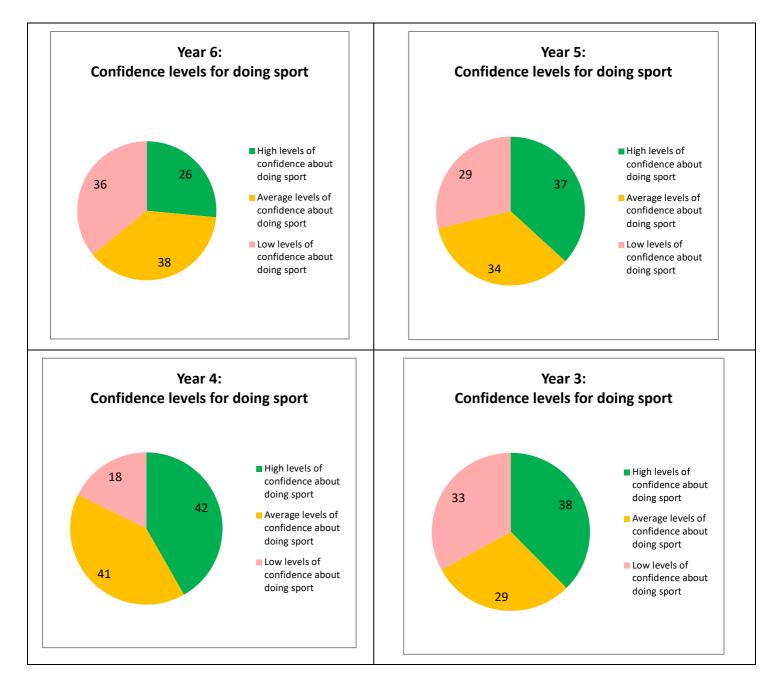
11. This was the weakest area for all the year groups. In all the year groups except Year 4, at least 50% felt very unconfident about this area:





Confidence for doing sport

- 12. This was an area where the children were much more confident, across all the year groups.
- 13. At least a quarter of every year group felt very confident about doing sport:



14. However, nearly a third in the Year 6s, 5s and 4s felt very unconfident in this area.



15. Like activity outside school, the Year 4 group was the most confident in this area, with nearly 42% feeling very confident about doing sport.

Confidence for learning

- 16. The majority of all the year groups felt confident about learning and concentrating at school, indicating that they were positive about the educational aspects of returning to school.
- 17. This confidence was highest in the Year 4s and lowest in the Year 3s:





Key findings: Age groups

- 18. The Year 4s were the most confident age group across all three areas of mental wellbeing.
- 19. They were also the most consistent in the two fitness tests, with average percentiles of 36 and 34 in each test. These percentiles are considerably lower than expected, but show an even level of fitness across both areas.
- 20. Year 6 was the least confident about doing sport, whilst they also had the highest inconsistency in the fitness tests, and performed most weakly in the Agility Run by some margin.

Key findings: Gender groups

- 21. In the physical fitness tests, there was no substantive difference between how the two genders performed in each age group.
- 22. However, in the wellbeing tests, there were significant differences.
- 23. In relation to doing sport, in every age group, the boys were more confident than the girls.
- 24. The boys were also more confident about doing activity outside school, for every age group except the Year 4s, where the girls were more confident in this area. Interestingly, this was also the age group where the girls outperformed the boys in both fitness tests.
- 25. Learning and concentrating was the only area where the girls were more confident than the boys in all age groups except for Year 5, the girls felt more positive than the boys about this area.
- 26. To illustrate, the table below summarises the age group and which genders fared better, by test:



Test	Year 6	Year 5	Year 4	Year 3
	Physica	l Fitness		
SBJ	G	В	G	В
Agility Run	В	В	G	G
	Mental V	Vellbeing		
Activity outside school	В	В	G	В
Sport	В	В	В	В
Learning and concentrating	В	G	G	G

About Fitmedia

Fitmedia is an award winning specialist fitness company which provides a range of health and fitness assessment systems for children, designed specifically for use by schools, local authorities and sporting organizations.

Fitmedia was established by sport and fitness professionals, who were frustrated at the lack of effective, efficient fitness testing for children.
We have systems for children of all ages and abilities, from 6 to 18 years, to provide a complete overview of a child's physical movement skills, their levels of fitness and their own individual physical aptitudes. Our testing can also help identify and highlight potential causes for concern, such as low levels of fitness or specific injuries or areas of weakness.

Our testing systems are unique in that they are supported by scientific research data which allows us to see how well the children are doing based on their age and stage of development. In effect, they can be compared directly against what would be expected of a child their age and sex. As a result, the children are given a completely objective assessment of how they are progressing – and where and how to improve.

