

# FITNESSGRAM Study Guide

Fitnessgram is a comprehensive fitness assessment battery for youth. It includes a variety of health-related physical fitness tests designed to assess cardiovascular fitness, muscle strength, muscular endurance, flexibility and body composition. Criterion-referenced standards associated with good health have been established for children and youth for each of the health-related fitness components.

Fitnessgram is also a report card that summarizes the child's performance on each component of health-related fitness. Fitnessgram can be used by students, teachers and parents. Students can use Fitnessgram in planning their personal fitness needs and help guided students in program planning; and parents can use it to help them understand their child's needs and help the child plan a program of physical activity.

Teacher expectations are that students give their best effort in each of the Fitnessgram tests. In giving a best effort, both the individual student and teacher will be able to get an accurate picture of each students' personal level of fitness.

## Fitnessgram Tests

### Aerobic Capacity

Aerobic capacity is perhaps the most important area of any fitness program. Research clearly indicates that acceptable levels of aerobic capacity are associated with a reduced risk of high blood pressure, coronary heart disease, obesity, diabetes some forms of cancer and other health problems in adults.

#### The PACER (Progressive Aerobic Cardiovascular Endurance Run) Test

Objective is to run as long as possible back and forth across a 20 meter space at a specified pace that gets faster each minute.

- Students need to cross the 20 meter line as the beep sounds or before.
- If students get to the line early, they must wait for the next beep before continuing on to the next length.
- At the end of each minute a triple beep sounds indicating that the pace will get faster.
- The first time a student does not get to the line before the beep, they should immediately turn around and attempt to get on pace (note students need to make an honest attempt to get to each line, failure to do this means the student can no longer maintain the pace and the test is then over.)
- Students continue this until they fail to reach the line before the beep for the second time.

#### PACER Test Healthy Fitness Zones

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
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- |      |        |    |       |
|------|--------|----|-------|
| • 13 | 41-83  | 13 | 23-51 |
| • 14 | 41-83  | 14 | 23-51 |
| • 15 | 51-94  | 15 | 32-51 |
| • 16 | 61-94  | 16 | 32-61 |
| • 17 | 61-106 | 17 | 41-61 |

## Abdominal Strength

Strength and endurance of the abdominal muscles are important in promoting good posture and correct pelvic alignment. The latter is particularly important in the maintenance of low back health.

### Curl-up Test

Objective is to complete as many curl-ups as possible up to a maximum of 75 at a specified pace.

- Student lies on a mat with back flat, head touching, arms outstretched at sides and feet flat with knees up.
- Students should position themselves so their outstretched fingertips are just before a 4 and a half inch measuring strip.
- When performing the curl up students need to get their backs up off the mat far enough so that their fingertips cross the measuring strip.
- Form errors include: not getting the back off the mat and forcibly stretching the arms across the measuring strip, feet lifting up off the mat, head not returning to the mat and inability to maintain the proper pace.
- After the first form error, students will get a chance to make the correction.
- After the second form error the test is concluded.

### Curl –up Test Healthy Fitness Zones

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
•	13	21-40	13	18-32	
•	14	24-45	14	18-32	
•	15	24-47	15	18-35	
•	16	24-47	16	18-35	
•	17	24-47	17	18-35	

## Upper Body Strength and Endurance

Strength and endurance of the muscles in the upper body are important in activities of daily living, maintaining functional health and promoting good posture. It is important that children and youth learn the importance of upper body strength and endurance as well as methods to use in developing and maintaining this area of fitness.

## 90 degree Push-Up Test

Objective is to complete as many 90 degree push-ups as possible at a rhythmic pace.

- Students begin in the up position and follow the cadence while they complete the push-ups.
- With a straight back, students must go down low enough so there is a minimum 90 degree bend in their elbows.
- Return to the up position in pace with the cadence and with arms fully extended.
- Form errors include: not going low enough, stopping or not maintaining the proper pace, not maintaining the correct straight back body position, not extending arms fully enough and touching with the body on the way down.
- After the first form error students get the opportunity to make the correction.
- After the second form error the test is concluded.

### Push-Up Test Healthy Fitness Zones

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
•	13	12-25	13	7-15	
•	14	14-30	14	7-15	
•	15	16-35	15	7-15	
•	16	18-35	16	7-15	
•	17	18-35	17	7-15	

## Flexibility

Maintaining adequate joint flexibility is important to functional health. However, for young people decreased flexibility is generally not a problem. The sit and reach test measures flexibility in the hamstrings, the body's largest and most commonly injured muscle. The trunk extension is included because of its relationship to low back health, especially proper vertebral alignment. Musculoskeletal fitness of the abdominal muscles, hamstrings and back extensors works in concert to maintain low back health.

### Sit and Reach Test

Objective is to reach within the healthy fitness zone range using both the right and left legs

- Students take off shoes and place the left foot against the box, right foot flat on the floor with the knee pointing up.
- Keeping the fingers even, the student reaches 1, 2 and 3, holding their reach the third time as far as they can on the ruler.
- This is then repeated for the right leg.
- Partners can be used to hold down the leg of the test taker so that the knee does not come up.

- Form errors include: not keeping the finger tips even, knee of the leg being tested comes up and failure to hold the stretch for one count.
- If there is a form error the student goes again until they get a score.

#### Sit and Reach Test Healthy Fitness Zones

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
•	13	8-12"		13	10-12"
•	14	8-12"		14	10-12"
•	15	8-12"		15	12+"
•	16	8-12"		16	12+"
•	17	8-12"		17	12+"

#### Trunk Extension Test

Objective is while lying on the stomach, to lift the back up off the mat in a smooth controlled manner far enough to be within the health fitness zone range.

- Student lies on their stomach with hands clasped behind their back.
- Keeping their feet on the mat and eyes looking down at a fixed object on the mat, the student smoothly arches their back up as far as they can to a position they can hold.
- Using a ruler, the teacher will measure the distance from the students chin to the mat to determine their trunk extensor flexibility score.
- Form errors include: not keeping the eyes down on the mat/fixed object and having the feet come off the mat.
- If a form error occurs, the student repeats the test until they get a valid score.

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
•	13	9-12"		13	9-12"
•	14	9-12"		14	9-12"
•	15	9-12"		15	9-12"
•	16	9-12"		16	9-12"
•	17	9-12"		17	9-12"

#### Body Composition

The prevalence of overweight and obesity has increased sharply in recent years and the trends are evident for children as well as adults. High levels of body fatness are associated with increased risk of coronary heart disease, stroke and diabetes. While children are not generally at risk for heart disease or stroke, increases in blood pressure and cholesterol occur in overweight and obese children. In addition diabetes has increasingly been diagnosed among children, even though this condition has generally been viewed as "adult onset diabetes. Obesity and heart disease risk factors are known to track through

the life span, so it is important to document body composition as part of a comprehensive health-related fitness profile.

### Body Composition Test

Using a bioelectric impedance analyzer, students will have their body composition estimated by measuring the body's resistance to current flow. A body with more fat will have less total body water and greater resistance to current flow.

The objective is to be within a range of body composition that is considered healthy. It is a misconception to think that it is healthy to have extremely low body fat. To maintain good health it is important to not have a BMI that is too low as well as having one that is too high.

### Body Composition Healthy Fitness Zones

Boys	<u>Age</u>	<u>Range</u>	Girls	<u>Age</u>	<u>Range</u>
•	13	23-15.1%		13	24.5-14.9%
•	14	24.5-15.6%		14	25-15.4%
•	15	25-13.2%		15	25-16%
•	16	26.5-16.6%		16	25-16.4%
•	17	27-17.3%		17	26-16.8%