

Boys				
PERCENTILE	AGE			
	14	15	16	17
100	79	81	77	73
95	62	62	62	61
90	58	59	58	57
85	56	57	56	55
80	54	55	53	53
75	52	53	51	51
70	51	51	50	50
65	49	50	48	48
60	48	49	48	46
55	47	47	46	45
50	45	45	45	44
45	44	44	44	43
40	42	43	42	41
35	41	41	40	40
30	40	40	40	40
25	39	38	38	38
20	37	36	37	36
15	35	35	35	35
10	33	32	31	32
5	28	29	27	27
0	0	0	6	1

Curl-up

Percentile Scores Based on Age/Test in No. of Curl-ups in 60 seconds

*** If the cadet is older than 17, the system will use the 17 year old values

This event measures abdominal strength and endurance.

Curl-ups test

Have students lie on cushioned, clean surface with knees flexed and feet about 12 inches from buttocks. Partner holds feet. Arms are crossed with hands placed on opposite shoulders and elbows held close to the chest. Keeping this arm position, student raises the trunk curling up to touch elbows to thighs and then lowers the back to the floor so that the scapulas (shoulder blades) touch the floor, for one curl-up. To start, a timer calls out the signal "Ready? Go!" and begins timing student for one minute. The student stops on the word "stop."

Curl-ups tip

Instruct helpers to count aloud the number of repetitions.

Curl-ups scoring

"Bouncing" off the floor is not permitted. The curl-up should be counted only if performed correctly.

Girls				
PERCENTILE	AGE			
	14	15	16	17
100	72	74	77	67
95	53	55	53	53
90	49	51	49	47
85	47	48	45	44
80	45	46	43	41
75	43	44	41	40
70	42	41	40	38
65	41	40	38	37
60	40	39	37	36
55	39	37	36	35
50	37	36	35	34
45	36	35	34	33
40	35	34	33	31
35	34	32	32	30
30	32	31	30	30
25	31	30	30	28
20	30	28	27	25
15	28	26	25	25
10	25	23	23	22
5	20	20	19	19
0	0	0	0	0

Boys				
PERCENTILE	AGE			
	14	15	16	17
95	85	100	100	96
90	77	100	79	82
85	62	75	73	66
80	58	70	61	63
75	54	67	50	58
70	52	60	48	50
65	50	51	45	50
60	48	50	40	47
55	43	47	38	44
50	40	45	37	42
45	39	42	36	41
40	33	40	34	39
35	31	36	33	33
30	30	32	30	31
25	30	30	29	30
20	28	29	28	28
15	24	26	24	25
10	24	22	23	24
5	21	20	16	19
0	20	19	15	18

Partial Curl-up

Percentile Scores Based on Age/Test in No. of Curl-ups every 3 sec.

*** If the cadet is older than 17, the system will use the 17 year old values

Girls				
PERCENTILE	AGE			
	14	15	16	17
95	73	49	63	70
90	51	45	50	60
85	48	38	49	58
80	44	37	41	50
75	41	35	35	49
70	40	35	32	48
65	37	30	29	44
60	33	30	27	42
55	31	28	26	40
50	30	26	26	40
45	30	25	24	35
40	28	25	23	33
35	26	22	21	30
30	25	22	20	30
25	22	20	20	30
20	21	19	19	28
15	20	15	16	26
10	16	13	15	24
5	10	10	11	11
0	9	9	10	10

Partial curl-ups test

Have student lie on cushioned, clean surface with knees flexed and feet about 12 inches from buttocks. Do not hold or anchor the feet. Arms are extended forward with fingers resting on the legs and pointing toward the knees. The student's partner is behind the head with hands cupped under the student's head. The student being tested curls up slowly sliding the fingers up the legs until the fingertips touch the knees, then back down until the head touches the partner's hands. The curl-ups are done to a metronome (or audio tape, clapping, drums) with one complete curl-up every three seconds, and are continued until the student can do no more in rhythm (has not done the last three in rhythm) or has reached the target number for the test.

Partial curl-ups tip

Make sure that the participant's arm is fully extended from the starting position.

Partial curl-ups scoring

Record only those curl-ups done with proper form and in rhythm.

Partial curl-ups rationale

Done slowly with knees bent and feet not held, the partial curl-up is a better indicator of abdominal strength and endurance than the timed curl-ups.

Boys				
	AGE			
PERCENTILE	14	15	16	17
100	6.6	6.3	6.5	6.9
95	8.8	8.5	8.4	8.5
90	9	8.8	8.6	8.6
85	9.1	9	8.7	8.7
80	9.3	9.1	8.9	8.9
75	9.4	9.2	8.9	8.9
70	9.5	9.3	9	9
65	9.6	9.4	9.1	9.1
60	9.7	9.5	9.2	9.2
55	9.8	9.5	9.3	9.3
50	9.9	9.7	9.4	9.4
45	10	9.8	9.5	9.5
40	10.1	9.9	9.6	9.6
35	10.2	10	9.7	9.6
30	10.3	10.1	9.8	9.8
25	10.5	10.2	10	9.9
20	10.7	10.4	10.1	10.1
15	11	10.7	10.3	10.3
10	11.3	11	10.6	10.6
5	12	11.8	11.1	11.1
0	19.9	19.8	23	23

Shuttle Run

Percentile Scores Based on
Age/Test Scores in Seconds and
Tenths

*** If the cadet is older than 17,
the system will use the 17 year
old values

This event measures speed,
quickness, and agility.

Shuttle run testing

Mark two parallel lines 30 feet
apart and place two blocks of
wood or similar object behind
one of the lines. Students start
behind opposite line. On the
signal "Ready? Go!" the student
runs to the blocks, picks one up,
runs back to the starting line,
places block behind the line, runs
back and picks up the second
block and runs back across
starting line.

Shuttle run tip

Be sure the participants
understand the importance of
running through the finish line.

Shuttle run scoring

Blocks should not be thrown
across the lines. Scores are
recorded to the nearest tenth of a
second.

Girls				
	AGE			
PERCENTILE	14	15	16	17
100	8	8.3	6.4	7.6
95	9.6	9.5	9.6	9.5
90	9.9	9.8	10	9.9
85	10.1	10	10.1	10
80	10.3	10.1	10.2	10.2
75	10.5	10.3	10.4	10.3
70	10.6	10.4	10.5	10.4
65	10.8	10.6	10.6	10.6
60	10.9	10.7	10.7	10.7
55	11	10.8	10.8	10.9
50	11.2	11	10.9	11
45	11.3	11.1	11	11.1
40	11.4	11.2	11.2	11.2
35	11.6	11.4	11.4	11.3
30	11.7	11.5	11.5	11.5
25	11.9	11.7	11.7	11.7
20	12.1	11.9	11.9	11.9
15	12.5	12.2	12.2	12.1
10	12.9	12.6	12.6	12.7
5	14	13.2	13.2	13.2
0	21.4	16.6	15.4	19.8

Boys				
PERCENTILE	AGE			
	14	15	16	17
100	12	12	13	12.5
95	6.5	7	8	8.5
90	5	6	7	8
85	4.5	5	6	7
80	4	5	5.5	6
75	3.5	4	5	5.5
70	3	4	4.5	5
65	2.5	3	4	4.5
60	2	3	3.5	4
55	2	2.5	3	3.5
50	1	2	3	3
45	1	2	2	3
40	1	1	2	2
35	0	1	1.5	1.5
30	0	0	1	1
25	-1	0	0.5	1
20	-2	-1	0	0
15	-2	-2	-1	-1
10	-4	-3	-3	-2
5	-5	-5	-4	-4
0	-12	-10	-12	-10

V-Sit Reach

Percentile Scores Based on Age/Test Scores in Inches
 *** If the cadet is older than 17, the system will use the 17 year old values

This event measures flexibility of the lower back and hamstrings.

V-sit testing

Mark a straight line two feet long on the floor as a baseline. Draw a measuring line perpendicular to the midpoint of the baseline extending two feet on each side and marked off in half-inches. The point where the baseline and measuring line intersect is the "0" point. Student removes shoes and sits on floor with measuring line between legs and soles of feet placed immediately behind baseline, heels 8-12" apart. Student clasps thumbs so that hands are together, palms down and places them on measuring line. With the legs held flat by a partner, student slowly reaches forward as far as possible, keeping fingers on baseline and feet flexed. After three practice tries, the student holds the fourth reach for three seconds while that distance is recorded.

V-sit tip

Participants are most flexible after a warm-up run. Best results may occur immediately after performing the endurance run.

V-sit rules

Legs must remain straight with soles of feet held perpendicular to the floor (feet flexed). Students should be encouraged to reach slowly rather than "bounce" while stretching. Scores, recorded to the nearest half inch, are read as plus scores for reaches beyond baseline, minus scores for reaches behind baseline.

Girls				
PERCENTILE	AGE			
	14	15	16	17
100	14	15	15	15
95	10	10	10.5	10.5
90	8.5	9	9.5	9
85	8	8	9	8
80	7	7.5	8	7.5
75	6.5	7	8	7
70	6	6.5	7	6
65	6	6	7	6
60	5	6	6	5.5
55	5	5	6	5
50	4.5	5	5.5	4.5
45	4	4.5	5	4
40	4	4	4.5	4
35	3.5	3.5	4	3.5
30	3	3	4	3
25	2.5	2	3	2.5
20	2	2	2.5	2
15	1	1	2	1.5
10	0	0.5	1	1
5	-1.5	-1	-0.5	-1
0	-10	-10	-6	-12

Boys					
	AGE				
PERCENTILE	14	15	16	17	
99	43	47	45	48	
95	39	41	42	45	
90	37	39	40	43	
85	36	37	38	41	
80	34	36	37	40	
75	33	34	36	40	
70	31	33	35	38	
65	30	32	34	37	
60	30	32	32	36	
55	29	31	31	35	
50	28	30	30	34	
45	27	29	29	33	
40	26	28	28	32	
35	25	27	27	31	
30	24	26	26	30	
25	23	24	25	28	
15	21	22	21	25	
10	18	19	18	23	
5	15	13	11	15	
0	14	12	10	14	

Sit and Reach

Percentile Scores Based on Age/Test Scores in Centimeters

*** If the cadet is older than 17, the system will use the 17 year old values

Sit and reach testing

A specially constructed box (see below) with a measuring scale marked in centimeters, with 23 centimeters at the level of the feet. Student removes shoes and sits on floor with knees fully extended, feet shoulder-width apart and soles of the feet held flat against the end of the box. With hands on top of each other, palms down, and legs held flat, student reaches along the measuring line as far as possible. After three practice reaches, the fourth reach is held while the distance is recorded.

Sit and reach tip

Participants are most flexible after a warm-up run. Best results may occur immediately after performing the endurance run.

Sit and reach rules

Legs must remain straight, soles of feet against box and fingertips of both hands should reach evenly along measuring line. Scores are recorded to the nearest centimeter.

Constructing the Sit and Reach Box

- Using any sturdy wood or comparable material (3/4" plywood is recommended), cut the following pieces:
 - 2 pieces - 12" x 12"
 - 2 pieces 12" x 10"
 - 1 piece -12" x 21"
- Assemble the pieces using nails or screws and wood glue.
- Inscribe the top panel with 1 centimeter gradations. It is crucial that the 23 centimeter line be exactly in line with the vertical plane against which the subject's feet will be placed.
- Cover the apparatus with two coats of polyurethane sealer or shellac.
- For convenience you can make a handle by cutting a 1" x 3" hole in the top panel.
- The measuring scale should extend from 9cm to 50cm.

Girls					
	AGE				
PERCENTILE	14	15	16	17	
99	49	49	48	47	
95	44	46	46	44	
90	42	44	43	43	
85	40	43	42	42	
80	39	42	41	41	
75	38	41	39	40	
70	36	40	38	40	
65	36	39	37	39	
60	35	37	36	37	
55	34	37	35	36	
50	33	36	34	35	
45	32	34	33	34	
40	31	33	33	33	
35	30	32	32	33	
30	29	32	31	32	
25	28	31	30	31	
20	26	30	28	29	
15	24	28	26	28	
10	23	25	23	26	
5	18	19	14	22	
0	17	18	13	21	

Boys				
PERCENTILE	AGE			
	14	15	16	17
100	4:30	4:42	4:49	4:46
95	6:01	5:50	5:40	5:35
90	6:13	6:07	5:56	5:57
85	6:26	6:20	6:08	6:06
80	6:33	6:29	6:18	6:14
75	6:45	6:38	6:25	6:23
70	6:59	6:48	6:33	6:32
65	7:09	6:57	6:44	6:40
60	7:19	7:06	6:50	6:50
55	7:29	7:16	6:58	6:57
50	7:44	7:30	7:10	7:04
45	7:59	7:39	7:20	7:14
40	8:13	7:52	7:35	7:24
35	8:30	8:08	7:53	7:35
30	8:48	8:29	8:09	7:52
25	9:10	8:49	8:37	8:06
20	9:35	9:05	8:56	8:25
15	10:18	9:34	9:22	8:56
10	11:22	10:10	10:17	9:23
5	12:11	11:25	11:49	10:15
0	18:10	21:44	20:15	16:49

One-Mile Run/Walk

Percentile Scores Based on Age/Test Scores in Minutes and Seconds
 *** If the cadet is older than 17, the system will use the 17 year old values

Girls				
PERCENTILE	AGE			
	14	15	16	17
100	5:00	5:51	5:58	6:20
95	7:20	7:25	7:26	7:22
90	7:43	7:52	7:55	7:58
85	7:59	8:08	8:23	8:15
80	8:20	8:24	8:39	8:34
75	8:36	8:40	8:50	8:52
70	8:50	8:55	9:11	9:15
65	9:09	9:09	9:25	9:33
60	9:27	9:23	9:48	9:51
55	9:51	9:37	10:09	10:08
50	10:06	9:58	10:31	10:22
45	10:25	10:18	10:58	10:48
40	10:51	10:40	11:15	11:05
35	11:10	11:00	11:44	11:20
30	11:36	11:20	12:08	12:00
25	11:52	11:48	12:42	12:11
20	12:18	12:19	13:23	12:40
15	12:56	13:33	14:16	13:03
10	14:10	14:13	16:03	14:01
5	15:44	15:17	18:00	15:14
0	20:04	24:07	21:00	28:50

Boys				
PERCENTILE	AGE			
	14	15	16	17
100	23	29	26	26
95	13	14	15	17
90	11	12	12	15
85	10	11	11	13
80	9	10	10	12
75	8	10	10	11
70	7	9	9	10
65	6	8	8	10
60	6	7	8	10
55	5	7	7	9
50	5	6	7	8
45	4	5	7	7
40	4	5	6	7
35	3	4	5	6
30	3	4	5	5
25	2	3	4	5
20	1	2	4	4
15	1	2	3	3
10	0	1	2	2
5	0	0	0	1
0	0	0	0	0

Pull-ups

Percentile Scores Based on Age/Test Scores in Number of Pull-ups
 *** If the cadet is older than 17, the system will use the 17 year old values

This event measures upper body strength and endurance.

Pull-ups testing

Student hangs from a horizontal bar at a height the student can hang from with arms fully extended and feet free from floor, using either an overhand grasp (palms facing away from body) or underhand grip (palms facing toward body). Small students may be lifted to starting position. Student raises body until chin clears the bar and then lowers body to full-hang starting position. Student performs as many correct pull-ups as possible.

Girls				
PERCENTILE	AGE			
	14	15	16	17
100	24	14	10	21
95	4	3	4	4
90	3	2	2	2
85	2	2	1	1
80	1	1	1	1
75	1	1	1	1
70	1	1	1	1
65	1	0	0	1
60	0	0	0	0
55	0	0	0	0
50	0	0	0	0
45	0	0	0	0
40	0	0	0	0
35	0	0	0	0
30	0	0	0	0
25	0	0	0	0
20	0	0	0	0
15	0	0	0	0
10	0	0	0	0
5	0	0	0	0
0	0	0	0	0

Pull-ups tip

Spend as little time hanging from the bar beforehand as possible, the extra time on the bar may reduce the number of pull-ups performed. Discourage any kicking of the legs or swinging of the body as this may also decrease the number of repetitions.

Pull-ups scoring

Pull-ups should be done in a smooth rather than jerky motion. Kicking or bending the legs is not permitted and the body must not swing during the movement.

Boys				
	AGE			
PERCENTILE	14	15	16	17
100	117	130	125	116
95	68	79	71	64
90	61	62	61	56
85	47	58	51	49
80	40	49	46	45
75	35	44	42	41
70	31	40	39	39
65	28	37	36	37
60	25	35	33	35
55	22	33	30	33
50	20	30	28	30
45	17	28	25	29
40	15	25	22	26
35	13	22	20	23
30	11	20	18	20
25	10	18	15	17
20	8	14	12	15
15	5	10	10	11
10	3	8	7	8
5	1	3	3	5
0	0	0	0	0

Flexed-Arm Hang

Percentile Scores Based on Age/Test Scores in Seconds
 *** If the cadet is older than 17, the system will use the 17 year old values

Flexed-arm hang testing

Using either an overhand grasp (palms facing away from body) or underhand grip (palms facing toward body), student assumes flexed arm hang position with chin clearing the bar. Students may be lifted to this position. Student holds this position as long as possible.

Flexed-arm hang tip

Rather than doing a pull-up to start, lift the participant to the starting position. This decreases any extra exertion and may possibly increase the length of time.

Flexed-arm hang scoring

Chest should be held close to bar with legs hanging straight. Timing is stopped when student's chin touches or falls below the bar.

Girls				
	AGE			
PERCENTILE	14	15	16	17
100	100	125	131	127
95	38	41	40	37
90	31	34	30	29
85	25	28	24	24
80	21	23	21	20
75	18	18	18	18
70	16	15	16	15
65	13	12	13	12
60	11	10	10	11
55	10	9	9	10
50	9	7	7	7
45	7	6	6	6
40	6	5	5	5
35	5	4	4	5
30	4	4	3	4
25	3	3	2	2
20	2	2	2	2
15	1	1	1	1
10	0	1	0	1
5	0	0	0	0
0	0	0	0	0

Boys				
	AGE			
PERCENTILE	14	15	16	17
95	47	50	59	60
90	41	44	46	56
85	40	42	44	53
80	37	40	41	50
75	32	37	40	46
70	30	35	36	44
65	28	34	34	43
60	25	32	32	41
55	24	31	30	40
50	24	30	30	37
45	22	30	29	35
40	21	27	28	34
35	20	25	25	30
30	18	25	25	30
25	18	24	25	27
20	15	21	23	25
15	13	20	22	23
10	11	18	20	21
5	7	15	15	20
0	6	14	14	19

Right Angle Push-ups

Percentile Scores Based on Age/Test Scores in # of Push-ups every 3 sec.

*** If the cadet is older than 17, the system will use the 17 year old values

Right angle push-ups testing

The student lies face down on the mat in push-up position with hands under shoulders, fingers straight, and legs straight, parallel, and slightly apart, with the toes supporting the feet. The student straightens the arms, keeping the back and knees straight, then lowers the body until there is a 90-degree angle at the elbows, with the upper arms parallel to the floor. A partner holds her/his hand at the point of the 90-degree angle so that the student being tested goes down only until her/his shoulder touches the partner's hand, then back up. The push-ups are done to a metronome (or audio tape, clapping, drums) with one complete push-up every three seconds, and are continued until the student can do no more in rhythm (has not done the last three in rhythm) or has reached the target number for the PPFA.

Right angle push-ups tip

As with the pull-up, spend as little time in the starting position beforehand in order to increase the number of repetitions. Any extra movement may also decrease the number of repetitions.

Right angle push-ups scoring

Record only those push-ups done with proper form and in rhythm.

Right angle push-ups rationale

The student's body weight has less effect on right angle push-ups than it does on pull-ups. This makes right angle push-ups a better indicator of the range of strength and endurance found in students, whereas many are unable to do any pull-ups. Pull-ups remain an option for students at higher levels of strength and endurance.

Girls				
	AGE			
PERCENTILE	14	15	16	17
95	25	34	32	29
90	21	23	26	28
85	20	20	24	25
80	19	20	22	22
75	15	20	20	20
70	12	18	19	19
65	11	18	16	18
60	10	16	15	17
55	10	15	13	16
50	10	15	12	16
45	9	15	12	15
40	8	13	12	15
35	5	11	11	14
30	5	11	10	12
25	5	11	8	11
20	5	10	5	9
15	3	7	4	7
10	2	5	3	5
5	1	2	1	2
0	0	1	0	1