

GUJARAT
TECHNOLOGICAL
UNIVERSITY

BRIDGE COURSE
“STATE CADET CORPS”
(6 Week duration course)

Meaning :- Physical Fitness

- Meaning: Today, there is a growing emphasis on looking good, feeling good and living longer. Increasingly scientific evidence tells us that one of the keys to achieving these ideals is fitness and exercises.
- Getting moving is a challenge because today physical activity is less a part of our daily lives. There are fewer jobs that require physical exertion. We have become a mechanically mobile society, relying on machines rather than muscles to get around.

Meaning:-

Physical Fitness (contd.)

- In addition, we have become a nation of observers with more people (including children) spending their leisure time pursuing just that – Leisure.
- Consequently statistics show that obesity, the problem that comes with high blood pressure, diabetes, etc. are on the rise. Everyone must take the initiative to get active now.

Definition:- Physical Fitness

- “Physical fitness refers to the organic capacity of the individual to perform the normal task of daily living without undue tiredness or fatigue having reserves of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him.”

Components of Physical Fitness

1.	SPEED	The quickness of movement of limb, whether it is the leg of a runner or the arm of a shot putter.
2.	ENDURANCE	The ability to deliver oxygen and nutrients to the tissue and to remove waste over a sustained period of time.
3.	STRENGTH	The extent to which muscles can exert force by contracting against the resistance.
4.	POWER	The ability to exert maximum muscular contraction, instantly in an explosive burst of movements.
5.	AGILITY	The ability to perform a series of explosive power movements in rapid succession in opposite directions.
6.	FLEXIBILITY	The ability to achieve an extended range of motion without being impeded by excess tissue.

Benefits of Physical Fitness

- If you are committed, then exercise in combination with a sensible diet can help to provide an overall sense of well-being and can even help to prevent chronic illness, disability and premature death.

Benefits:-

1. Improved Health

- Increased efficiency of heart and lungs.
- Reduced cholesterol levels.
- Increased muscle strength.
- Reduced blood pressure.
- Reduced risk of major illnesses such as diabetes or heart diseases.
- Weight Loss.

Benefits:-

2. Improved Sense of Well-Being

- ◉ More Energy.
- ◉ Less Stress.
- ◉ Improved quality of sleep.
- ◉ Improved ability to cope with stress.
- ◉ Increased mental sharpness.

Benefits:-

3. Improved Appearance

- Weight Loss.
- Toned Muscles.
- Improved posture.

Benefits:-

4. Enhanced Social Life

- Improved self image.
- Increased opportunities to make new friends.
- Increased opportunities to share an activity with friends or family members.

Benefits:-

5. Increased Stamina

- Increased productivity.
- Increased physical capabilities.
- Less frequency of injuries.
- Improved immunity to minor illnesses.

Development of Physical Fitness

o 1. Endurance:-

- o Short aerobic: 2mints to 8mints
- o Medium aerobic: 8mints to 30mints
- o Long aerobic: 30mints+
- o Duration runs to improve maximum oxygen uptake (VO₂ max)
- o Interval training to improve heart as a muscular pump.
- o Short anaerobic: less than 25 sec
- o Medium anaerobic: 25 sec to 60 sec
- o Long anaerobic: 60 sec to 120 sec

Development of Physical Fitness

○ 2. Strength:-

- Number of repetitions of an exercise.
- Number of sets of an exercise.
- Intensity- reduced recover time.
- Weight training.
- Conditioning exercises.
- Medicine Ball exercise.
- Polymeric exercises.
- Circuit training.
- Dumb bell exercise.
- Hill running.

Development of Physical Fitness

○ 3. Speed:-

- Flexibility is developed and maintained all year, round.
- Strength and speed is developed in parallel.
- Skill development is pre-learned, rehearsed and perfected before it is done at high speed levels.
- Speed training is developed by using high velocity for brief intervals. This will ultimately bring into play the correct neuromuscular pathways for energy resources used.

Development of Physical Fitness

○ 4. Flexibility:-

- Protagonistic muscles which cause the movement to take place.
- Opposing the movement and determining the amount of flexibility are the antagonistic muscles.

AAHPERED Youth Fitness Test

- 50mts
- 600mts
- Standing broad jump
- Sit-ups
- Push-ups

Measurement of Physical Fitness

○ Battery test of Boys

- ❑ 50mts
- ❑ 600mts
- ❑ Standing broad jump
- ❑ Sit-ups(90 seconds)
- ❑ Push-ups

GUJARAT TECHNOLOGICAL UNIVERSITY

SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)

EVENT :- 50 Mt. RUN BOYS

MARKS	PERFORMANCE	MARKS	PERFORMANCE	MARKS	PERFORMANCE	MARKS	PERFORMANCE
	(SECONDS)		(SECONDS)		(SECONDS)		(SECONDS)
0.1		2.6		5.1		7.6	7.6
0.2		2.7		5.2		7.7	
0.3		2.8	9.1	5.3	8.2	7.8	
0.4	9.9	2.9		5.4		7.9	
0.5		3.0		5.5		8.0	7.5
0.6		3.1	9.0	5.6	8.1	8.1	
0.7	9.8	3.2		5.7		8.2	
0.8		3.3		5.8		8.3	
0.9		3.4	8.9	5.9		8.4	7.4
1.0	9.7	3.5		6.0	8.0	8.5	
1.1		3.6		6.1		8.6	
1.2		3.7	8.8	6.2		8.7	
1.3	9.6	3.8		6.3		8.8	7.3
1.4		3.9		6.4	7.9	8.9	
1.5		4.0	8.7	6.5		9.0	
1.6	9.5	4.1		6.6		9.1	
1.7		4.2		6.7		9.2	7.2
1.8		4.3	8.6	6.8	7.8	9.3	
1.9	9.4	4.4		6.9		9.4	
2.0		4.5		7.0		9.5	
2.1		4.6	8.5	7.1		9.6	7.1
2.2	9.3	4.7		7.2	7.7	9.7	
2.3		4.8	8.4	7.3		9.8	
2.4		4.9		7.4		9.9	
2.5	9.2	5.0	8.3	7.5		10.0	7.0

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT :- 600 YARD RUN / WALK BOYS**

MARKS	PERFORMANCE MIN. SEC.	MARKS	PERFORMANCE MIN. SEC.	MARKS	PERFORMANCE MIN. SEC.	MARKS	PERFORMANCE MIN. SEC.
0.1	3.00	2.6	2.34	5.1	2.04	7.6	1.42
0.2	2.59	2.7		5.2	2.03	7.7	
0.3	2.58	2.8	2.33	5.3	2.02	7.8	1.41
0.4	2.57	2.9		5.4	2.01	7.9	
0.5	2.56	3.0	2.32	5.5	2.00	8.0	1.40
0.6	2.55	3.1		5.6	1.59	8.1	
0.7	2.54	3.2	2.31	5.7	1.58	8.2	1.39
0.8	2.53	3.3	2.29	5.8	1.57	8.3	
0.9	2.51	3.4	2.27	5.9	1.56	8.4	1.38
1.0	2.50	3.5	2.25	6.0	1.55	8.5	
1.1	2.49	3.6	2.23	6.1	1.54	8.6	1.37
1.2	2.48	3.7	2.21	6.2	1.53	8.7	
1.3	2.47	3.8	2.19	6.3	1.52	8.8	1.36
1.4	2.46	3.9	2.17	6.4	1.51	8.9	
1.5	2.45	4.0	2.15	6.5	1.50	9.0	1.35
1.6	2.44	4.1	2.14	6.6	1.49	9.1	
1.7	2.43	4.2	2.13	6.7	1.48	9.2	1.34
1.8	2.42	4.3	2.12	6.8	1.47	9.3	
1.9	2.41	4.4	2.11	6.9	1.46	9.4	1.33
2.0	2.40	4.5	2.10	7.0		9.5	
2.1	2.39	4.6	2.09	7.1	1.45	9.6	1.32
2.2	2.38	4.7	2.08	7.2		9.7	
2.3	2.37	4.8	2.07	7.3	1.44	9.8	1.31
2.4	2.36	4.9	2.06	7.4		9.9	
2.5	2.35	5.0	2.05	7.5	1.43	10.0	1.30

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT :- STANDING BROAD JUMP BOYS**

MARKS	PERFORMANCE (METRE)	MARKS	PERFORMANCE (METRE)	MARKS	PERFORMANCE (METRE)	MARKS	PERFORMANCE (METRE)
0.1	0.30	2.6	1.24	5.1	2.02	7.6	2.52
0.2	0.33	2.7	1.28	5.2	2.04	7.7	2.54
0.3	0.37	2.8	1.32	5.3	2.06	7.8	2.56
0.4	0.40	2.9	1.36	5.4	2.08	7.9	2.58
0.5	0.44	3.0	1.40	5.5	2.10	8.0	2.60
0.6	0.47	3.1	1.44	5.6	2.12	8.1	2.62
0.7	0.51	3.2	1.48	5.7	2.14	8.2	2.64
0.8	0.54	3.3	1.52	5.8	2.16	8.3	2.66
0.9	0.58	3.4	1.56	5.9	2.18	8.4	2.68
1.0	0.61	3.5	1.60	6.0	2.20	8.5	2.70
1.1	0.65	3.6	1.64	6.1	2.22	8.6	2.72
1.2	0.68	3.7	1.68	6.2	2.24	8.7	2.74
1.3	0.72	3.8	1.72	6.3	2.26	8.8	2.76
1.4	0.76	3.9	1.76	6.4	2.28	8.9	2.78
1.5	0.80	4.0	1.80	6.5	2.30	9.0	2.80
1.6	0.84	4.1	1.82	6.6	2.32	9.1	2.82
1.7	0.88	4.2	1.84	6.7	2.34	9.2	2.84
1.8	0.92	4.3	1.86	6.8	2.36	9.3	2.86
1.9	0.96	4.4	1.88	6.9	2.38	9.4	2.88
2.0	1.00	4.5	1.90	7.0	2.40	9.5	2.90
2.1	1.04	4.6	1.92	7.1	2.42	9.6	2.92
2.2	1.08	4.7	1.94	7.2	2.44	9.7	2.94
2.3	1.12	4.8	1.96	7.3	2.46	9.8	2.96
2.4	1.16	4.9	1.98	7.4	2.48	9.9	2.98
2.5	1.20	5.0	2.00	7.5	2.50	10.0	3.00

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT : SIT- UPS (90 SECONDS) BOYS**

MARKS	PERFORMANCE (NUMBERS)	MARKS	PERFORMANCE (NUMBERS)	MARKS	PERFORMANCE (NUMBERS)	MARKS	PERFORMANCE (NUMBERS)
0.1	10	2.6		5.1		7.6	52
0.2		2.7	23	5.2	36	7.7	53
0.3	11	2.8		5.3	37	7.8	
0.4		2.9	24	5.4		7.9	54
0.5	12	3.0		5.5	38	8.0	55
0.6		3.1	25	5.6	39	8.1	
0.7	13	3.2		5.7		8.2	56
0.8		3.3	26	5.8	40	8.3	
0.9	14	3.4		5.9	41	8.4	57
1.0		3.5	27	6.0		8.5	
1.1	15	3.6		6.1	42	8.6	58
1.2		3.7	28	6.2	43	8.7	
1.3	16	3.8		6.3		8.8	59
1.4		3.9	29	6.4	44	8.9	
1.5	17	4.0	30	6.5	45	9.0	60
1.6		4.1		6.6		9.1	
1.7	18	4.2	31	6.7	46	9.2	61
1.8		4.3		6.8	47	9.3	
1.9	19	4.4	32	6.9		9.4	62
2.0		4.5		7.0	48	9.5	
2.1	20	4.6	33	7.1	49	9.6	63
2.2		4.7		7.2		9.7	
2.3	21	4.8	34	7.3	50	9.8	64
2.4		4.9		7.4	51	9.9	
2.5	22	5.0	35	7.5		10.0	65

SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)

EVENT :- PUSH - UPS BOYS

MARKS	PERFORMANCE (NO.OF PUSH UPS)	MARKS	PERFORMANCE (NO.OF PUSH UPS)	MARKS	PERFORMANCE (NO.OF PUSH UPS)	MARKS	PERFORMANCE (NO.OF PUSH UPS)
0.1		2.6		5.1		7.6	
0.2		2.7		5.2		7.7	
0.3		2.8		5.3		7.8	
0.4		2.9		5.4		7.9	
0.5	6	3.0	21	5.5	29	8.0	38
0.6		3.1		5.6		8.1	
0.7		3.2		5.7		8.2	
0.8		3.3		5.8		8.3	
0.9		3.4		5.9		8.4	
1.0	9	3.5	22	6.0	31	8.5	41
1.1		3.6		6.1		8.6	
1.2		3.7		6.2		8.7	
1.3		3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5	14	4.0	24	6.5	32	9.0	45
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2.0	16	4.5	26	7.0	34	9.5	49
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5	19	5.0	27	7.5	36	10.0	65

SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)

Measurement of Physical Fitness

○ Battery Items for Girls

- ❑ 50mts
- ❑ 600mts
- ❑ Standing broad jump
- ❑ Sit-ups(120 second)
- ❑ Medicine ball throw

GUJARAT TECHNOLOGICAL UNIVERSITY

SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)

EVENT :- 50 Mt. RUN GIRLS

SCORE	PERFORMANCE (SECONDS)	SCORE	PERFORMANCE (SECONDS)	SCORE	PERFORMANCE (SECONDS)	SCORE	PERFORMANCE (SECONDS)
0.1	11.0	2.6	9.7	5.1		7.6	
0.2		2.7		5.2		7.7	
0.3	10.9	2.8	9.6	5.3		7.8	
0.4		2.9		5.4	8.4	7.9	8.0
0.5	10.8	3.0	9.5	5.5		8.0	
0.6		3.1		5.6		8.1	
0.7	10.7	3.2	9.4	5.7		8.2	
0.8		3.3		5.8	8.3	8.3	7.9
0.9	10.6	3.4	9.3	5.9		8.4	
1.0		3.5		6.0		8.5	
1.1	10.5	3.6	9.2	6.1		8.6	
1.2		3.7		6.2	8.2	8.7	7.8
1.3	10.4	3.8	9.1	6.3		8.8	
1.4		3.9		6.4		8.9	
1.5	10.3	4.0	9.0	6.5		9.0	
1.6		4.1		6.6	8.1	9.1	7.7
1.7	10.2	4.2	8.9	6.7		9.2	
1.8		4.3		6.8		9.3	
1.9	10.1	4.4	8.8	6.9		9.4	
2.0		4.5		7.0	8.0	9.5	7.6
2.1	10.0	4.6	8.7	7.1		9.6	
2.2		4.7		7.2		9.7	
2.3	9.9	4.8	8.6	7.3		9.8	
2.4		4.9		7.4	7.9	9.9	
2.5	9.8	5.0	8.5	7.5		10.0	7.5

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT :- 600 YARD RUN / WALK GIRLS**

SCORE	PERFORMANCE	SCORE	PERFORMANCE	SCORE	PERFORMANCE	SCORE	PERFORMANCE
	Min. Sec.		Min. Sec.		Min. Sec.		Min. Sec.
0.1	4.50	2.6	3.38	5.1	2.59	7.6	2.34
0.2	4.46	2.7	3.36	5.2	2.58	7.7	2.32
0.3	4.42	2.8	3.34	5.3	2.57	7.8	2.30
0.4	4.38	2.9	3.32	5.4	2.56	7.9	2.28
0.5	4.34	3.0	3.30	5.5	2.55	8.0	2.26
0.6	4.30	3.1	3.28	5.6	2.54	8.1	2.24
0.7	4.26	3.2	3.26	5.7	2.53	8.2	2.22
0.8	4.22	3.3	3.24	5.8	2.52	8.3	2.20
0.9	4.18	3.4	3.22	5.9	2.51	8.4	2.18
1.0	4.15	3.5	3.20	6.0	2.50	8.5	2.16
1.1	4.12	3.6	3.18	6.1	2.49	8.6	2.14
1.2	4.09	3.7	3.16	6.2	2.48	8.7	2.12
1.3	4.06	3.8	3.14	6.3	2.47	8.8	2.10
1.4	4.03	3.9	3.12	6.4	2.46	8.9	2.08
1.5	4.00	4.0	3.10	6.5	2.45	9.0	2.06
1.6	3.58	4.1	3.09	6.6	2.44	9.1	2.04
1.7	3.56	4.2	3.08	6.7	2.43	9.2	2.03
1.8	3.54	4.3	3.07	6.8	2.42	9.3	2.02
1.9	3.52	4.4	3.06	6.9	2.41	9.4	2.01
2.0	3.50	4.5	3.05	7.0	2.40	9.5	2.00
2.1	3.48	4.6	3.04	7.1	2.39	9.6	1.59
2.2	3.46	4.7	3.03	7.2	2.38	9.7	1.58
2.3	3.44	4.8	3.02	7.3	2.37	9.8	1.57
2.4	3.42	4.9	3.01	7.4	2.36	9.9	1.56
2.5	3.40	5.0	3.00	7.5	2.35	10.0	1.55

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT :- STANDING BROAD JUMP GIRLS**

SCORE	PERFORMANCE	SCORE	PERFORMANCE	SCORE	PERFORMANCE	SCORE	PERFORMANCE
	(METRE)		(METRE)		(METRE)		(METRE)
0.1	0.25	2.6	1.06	5.1	1.51	7.6	1.82
0.2	0.28	2.7	1.07	5.2	1.52	7.7	1.84
0.3	0.32	2.8	1.08	5.3	1.53	7.8	1.86
0.4	0.35	2.9	1.09	5.4	1.54	7.9	1.88
0.5	0.39	3.0	1.10	5.5	1.55	8.0	1.90
0.6	0.42	3.1	1.11	5.6	1.56	8.1	1.92
0.7	0.46	3.2	1.12	5.7	1.57	8.2	1.94
0.8	0.49	3.3	1.13	5.8	1.58	8.3	1.96
0.9	0.53	3.4	1.14	5.9	1.59	8.4	1.98
1.0	0.56	3.5	1.15	6.0	1.60	8.5	2.00
1.1	0.60	3.6	1.16	6.1	1.61	8.6	2.02
1.2	0.63	3.7	1.17	6.2	1.62	8.7	2.04
1.3	0.67	3.8	1.18	6.3	1.63	8.8	2.06
1.4	0.71	3.9	1.19	6.4	1.64	8.9	2.08
1.5	0.74	4.0	1.20	6.5	1.65	9.0	2.10
1.6	0.77	4.1	1.23	6.6	1.66	9.1	2.12
1.7	0.81	4.2	1.26	6.7	1.67	9.2	2.14
1.8	0.84	4.3	1.29	6.8	1.68	9.3	2.16
1.9	0.88	4.4	1.32	6.9	1.69	9.4	2.18
2.0	0.91	4.5	1.35	7.0	1.70	9.5	2.20
2.1	0.94	4.6	1.38	7.1	1.72	9.6	2.21
2.2	0.98	4.7	1.41	7.2	1.74	9.7	2.22
2.3	1.00	4.8	1.44	7.3	1.76	9.8	2.23
2.4	1.03	4.9	1.47	7.4	1.78	9.9	2.24
2.5	1.05	5.0	1.50	7.5	1.80	10.0	2.25

GUJARAT TECHNOLOGICAL UNIVERSITY**SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)****EVENT :- Bent Knee SIT UPS (120 SECOND) GIRLS**

SCORE	PERFORMANCE (NUMBERS)	SCORE	PERFORMANCE (NUMBERS)	SCORE	PERFORMANCE (NUMBERS)	SCORE	PERFORMANCE (NUMBERS)
0.1	5	2.6	18	5.1	31	7.6	48
0.2		2.7		5.2	32	7.7	
0.3	6	2.8	19	5.3		7.8	49
0.4		2.9		5.4	33	7.9	
0.5	7	3.0	20	5.5	34	8.0	50
0.6		3.1		5.6		8.1	
0.7	8	3.2	21	5.7	35	8.2	51
0.8		3.3		5.8	36	8.3	
0.9	9	3.4	22	5.9		8.4	52
1.0		3.5		6.0	37	8.5	
1.1	10	3.6	23	6.1	38	8.6	53
1.2		3.7		6.2		8.7	
1.3	11	3.8	24	6.3	39	8.8	54
1.4		3.9		6.4	40	8.9	
1.5	12	4.0	25	6.5		9.0	55
1.6		4.1		6.6	41	9.1	
1.7	13	4.2	26	6.7	42	9.2	56
1.8		4.3		6.8		9.3	
1.9	14	4.4	27	6.9	43	9.4	57
2.0		4.5		7.0	44	9.5	
2.1	15	4.6	28	7.1		9.6	58
2.2		4.7		7.2	45	9.7	
2.3	16	4.8	29	7.3	46	9.8	59
2.4		4.9		7.4		9.9	
2.5	17	5.0	30	7.5	47	10.0	60

GUJARAT TECHNOLOGICAL UNIVERSITY

SCORING TABLE FOR ENGINEERING STUDENTS (BRIDGE COURSE)

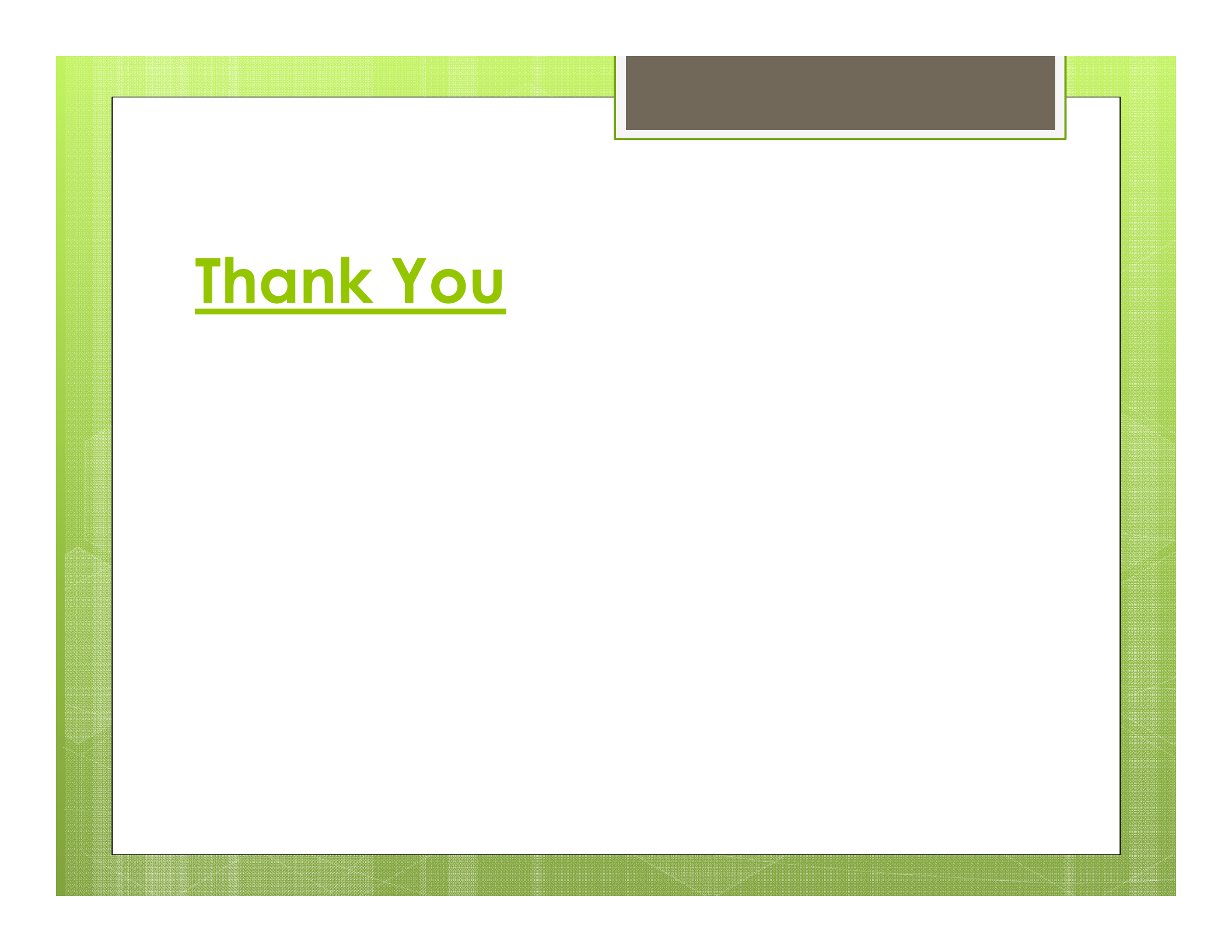
MEDICINE BALL THROW FOR GIRLS ONLY

WOMEN (2 Kg.)

Distance (in metres)	Points
11.5 and Above	100
11	9.4
10.5	8.7
10	8.1
9.5	7.6
9	7.1
8.5	6.60
8	6.1
7.5	5.7
7	5.3
6.5	4.9
6	4.5
5.5	4.1
5	3.8
4.5	3.5
4	3.2
3.5	2.9
3	2.6
2.5	2.3
2 and below	2

BODY MASS INDEX

- Practice all indoor, outdoor and recreational activity for development of physical fitness.



Thank You