



W3: Individual Fitness





AGENDA

A1. Introduction to Fitness

A2. Immediate Effects of Exercise

A3. PE & Safety

A4. Healthy Fitness Zone

A5. Fitness Assessments



A1: FITNESS AND TESTING

Objectives:

Cadets will be able to

1. Define fitness and the terms used to describe it
2. Explain the purpose of the FitnessGram

Essential Question:

How would you create a supportive explanation/conversation of fitness including the different elements and how it relates to fitness success



GETTING COMFORTABLE WITH SOME FITNESS TERMS

Academic Vocabulary



FITNESS & EXERCISE

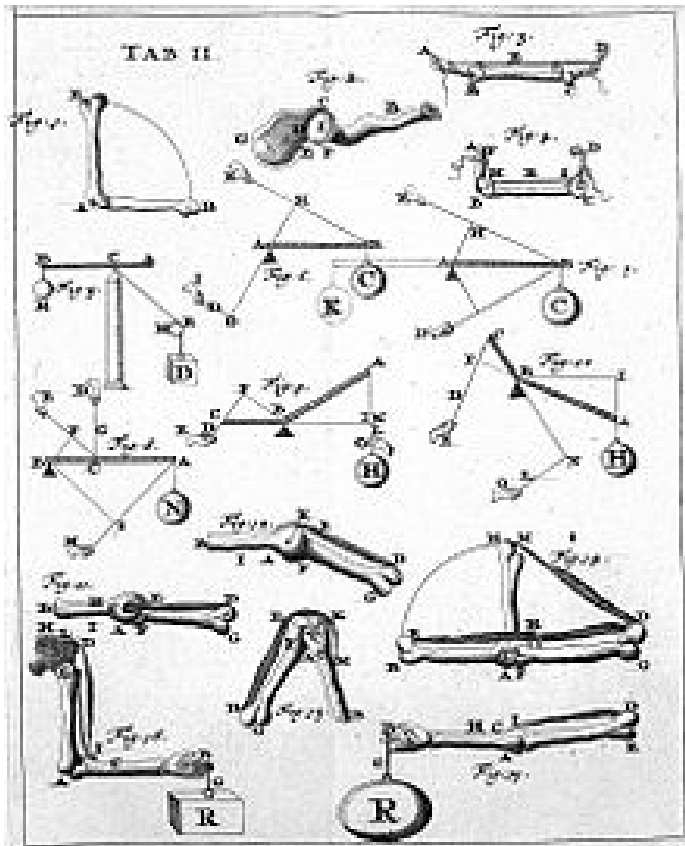


- **Fitness** - being physically fit and healthy.
 - **Working out, exercise, sports, walking etc.**
- Video Stop:
 - What is Fitness: Health & Skill Fitness Components PE
 - <https://www.youtube.com/watch?v=VNFLIaN0dok>



FITNESS IS SCIENTIFIC

- **Exercise/Sports Psychology** - Study of human behavior in all types of physical activity, including exercise for fitness and sport.
 - The mental connection to exercise, sport, and fitness plans.
- **Biomechanics** - Branch of Kinesiology that uses principles of physics to help us understand the human body in motion
 - The science and math calculations (physics) of physical activity and exercise.



"I'm sick and tired of being kicked around all the time."



FITNESS IS SCIENTIFIC

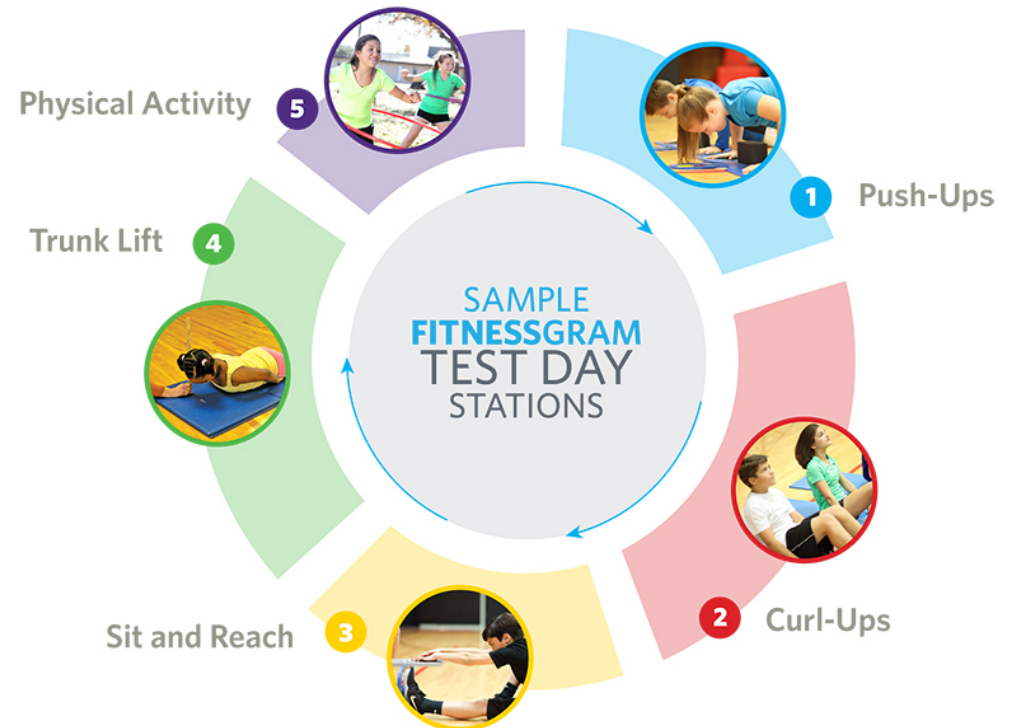
- **Exercise Sociology** - Study of social relationships and interactions in Physical Activity, including sports.
 - **Social interactions within sports, exercise, or sports teams.**
 - Video Stop: Sport Psychology: Overview & Introduction - Physical Education
 - https://www.youtube.com/watch?v=zh1MNK5lp_k





QUICK INTRO TO THE FITNESSGRAM

Fitnessgram - National fitness assessment that is the report card for fitness of individual students ages 5-17+.





AGILITY, COORDINATION, AND BALANCE

- **Agility** - ability to move quickly or easily
- **Coordination** - ability to use different parts of the human body smoothly and efficiently
- **Balance** - to stay upright, or stay in control of body movement
- **Reaction Time** - Amount of time it takes to move once you recognize the need to react.

All of these elements of fitness are important to maintaining the body's ability to prevent falls or other major health concerns, even preventing life altering accidents such as car accidents.





CHECK ON UNDERSTANDING



1. What are the five components to skill-based fitness?
2. Social interaction is part of fitness.
Yes or No
3. What is the national report card for fitness?



A2: IMMEDIATE EFFECTS OF EXERCISE

Objectives:

Cadets will be able to

1. Describe the immediate effects of exercise
2. Accurately execute taking their own Rest Heart Rate (RHR) and Heart Rate after exercise to find the difference in beats per minute (bpm)
3. Explain the concept of Aerobic Capacity (VO2Max) how it's measured, and why.

Essential Question:

Create a small plan that will allow you to improve your aerobic capacity to increase your VO2Max abilities?



IMMEDIATE EFFECTS OF EXERCISE



Heart rate is increased, pumping blood through the body faster than when the body is at rest.

- Name a few Heart rate Monitors-Fitbits, Smartwatches etc

Resting Heart Rate (RHR)- is the number of times your heart beats per minute (bpm) while at complete rest.

- Take your resting heart rate while sitting in the class.

Video Stop: How to check your pulse and heart rate

<https://www.youtube.com/watch?v=BSIRvD-CZSo>





AEROBIC CAPACITY & VO2MAX

Breathing-the process of taking air into and expelling it from the lungs.

Aerobic Capacity - The ability of the cardiorespiratory system to provide oxygen during hard exercise over a specific amount of time.

VO₂Max - the maximum amount of oxygen the body can utilize during a specified period of usually intense exercise. It is used to establish the aerobic endurance of an athlete.

Video: VO2 Max Introduction & Overview: Exercise Physiology

https://www.youtube.com/watch?v=C-q_jA7BQtM





SWEAT, FLUSHED & MUSCLES BURNING

Sweating is a bodily function that helps regulate your body temperature aka perspiration, is made of salty odorous fluid from the sudoriferous gland.

The most common areas of sweating on the body include:

- Armpits
- Face
- Palms of the hands
- Soles of the feet

Flushed - red and hot; appearance and feel of a person's skin typically as the result of exercise

Burning Muscles - is the feeling of muscles burning, hardening, from being exhausted from work.

Video Stop: What happens inside your body when you exercise?

<https://www.youtube.com/watch?v=wWGulLaa000>

FEEL
THE
BURN!





CHECK ON UNDERSTANDING

1. Name a device or type of device that tracks heartrate.
2. VO_2 Max should happen every time you exercise. Yes or No? Explain the reason/purpose of VO_2 Max testing.
3. Why does exercising get easier over time of continuous routine?





A3: PHYSICAL EDUCATION & SAFETY

Objectives:

Cadets will be able to

1. Explain the 8 routines for workout schedules
2. Explain the 5 steps of determining the best fitness activities for themselves
3. Will be able create their own SMART Goals

Essential Question:

Can they create a mock Physical Activity Schedule incorporating their SMART goals.



ROUTINE OF WORKOUT SCHEDULES

8 Routines

1. Warm Up
2. Safe & Appropriate Clothes
3. Use Equipment Safely
4. Follow ALL Safety instructions
5. Perform within/to Your Limits
6. Do NOT overdo It
7. Plan Ahead
8. Cool Down





ROUTINE OF WORKOUT SCHEDULES

Routine 1- Warm Up

A segment of exercise routine that is between 5-10 minutes of very light cardio and stretching to the performance factor (EX: running: stretch your legs, throwing: stretch your shoulders and arms etc.)

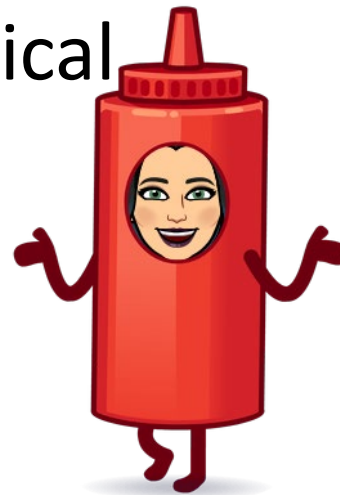




ROUTINE OF WORKOUT SCHEDULES

Routine 2- Wear Appropriate Clothes

Always wear clothes/apparel fitting to the activity (Ex: shorts/leggings, tank tops free of extra straps, shirts that are free of excessive holes, athletic shoes according to the physical activity)





ROUTINE OF WORKOUT SCHEDULES

Routine 3- Use Equipment Safely

For many sports there is safety equipment required like helmets, pads, gloves, mouth guards etc.





ROUTINE OF WORKOUT SCHEDULES

Routine 4- Follow ALL Safety Instructions

If your physical activity is using weight machines or equipment always follow the instructions and protocols on the side of the machine. If you are unaware or are unsure, ask a professional about limiting/restricting self-injury.





ROUTINE OF WORKOUT SCHEDULES

Routine 5- Perform to/Within Your Limits

Always perform your physical activity and exercises within your limits or to a comfortable limit.

- This can be done by starting at low repetition and low set amounts and gradually increase; or starting at a lower weight and increasing slowly overtime.





ROUTINE OF WORKOUT SCHEDULES

Routine 6- Do not Overdo It

DO not overdo it in any exercise. Pushing yourself is a good way to expand your health and person records but do not over exceed your limits it can result in serious injury or death.

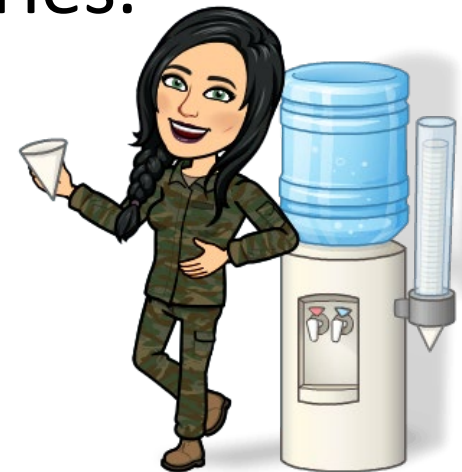




ROUTINE OF WORKOUT SCHEDULES

Routine 7- Plan Ahead

Always take into account your food and water preparedness. This means to have a stable amount of food/carbs to use before working out and to hydrate to help prevent passing out, extreme dehydration and serious injuries.





ROUTINE OF WORKOUT SCHEDULES

Routine 8- Cool Down

A segment of exercise routine that is between 5- 10 minutes of 50% performance ability of the physical activity that you just completed. This should include stretching to prevent muscles tightening up and added onset soreness.





DETERMINING THE BEST PLAN FOR YOU

5 Steps

1. Determine your Personal Needs
2. Consider Program Options
3. Set Goals- SMART Goals!
4. Structure Your Program
5. Keep Log & Evaluate





DETERMINING THE BEST PLAN FOR YOU

Step 1: Determine Your personal needs

Self-Assess

- What do you want to improve?
- How Fast/ Quickly?
- How often do you want to exercise?
- What is your Moderate vs Vigorous Exercise time limits?
 - Moderate Suggested is 60 minutes a day
 - Vigorous suggested at least 20 minutes per day



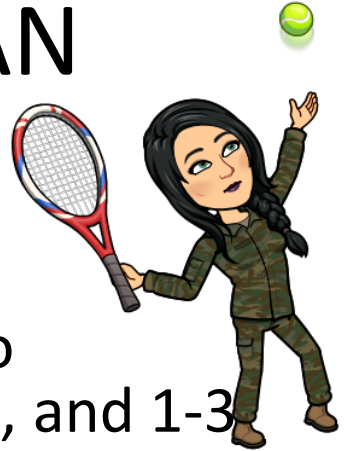


DETERMINING THE BEST PLAN FOR YOU

Step 2: Consider Program Options

Design your program around what you are willing to do/continue or enjoy. Include your Current Lifestyle, and 1-3 vigorous components to focus on or add to your program. You can combine them as needed for a weekly schedule.

- Current Lifestyle Activities: Walking to and from School, Physical Education Class/Physical Training
- Vigorous Activities (that you are willing to do/enjoy): Jogging, Aerobic Dance, Zumba, Cardio kickboxing etc.
- Vigorous recreation: Hiking, Rock Climbing, Ice skating, Snowboarding, Skiing etc.
- Vigorous Sports: Tennis, Pickelball, Volleyball, Soccer, Hockey etc.
- School: Before-school recreation and after-school sports



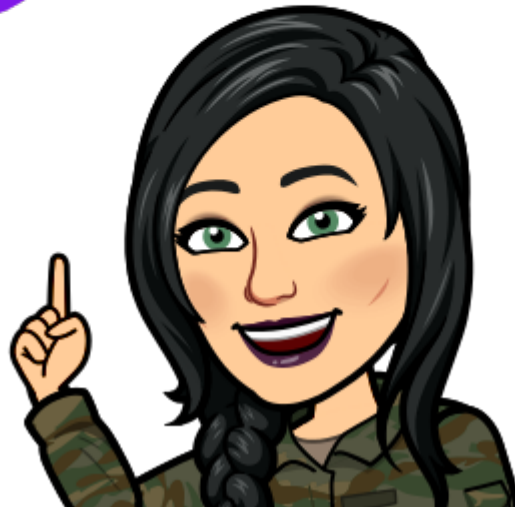


DETERMINING THE BEST PLAN FOR YOU

Step 3: Set Goals SMART GOALS



SMART!





DETERMINING THE BEST PLAN FOR YOU

Step 3: Set Goals SMART GOALS

Examples:

- I will walk 5 days every week for at 30 minutes each.
- I will replace my soda intake with only drinking water every day.
- I will prepare and pack my lunch with health items to work instead of ordering out 5 days a week.



Activity: Write three SMART Goals that could be applicable to the Physical Activity plan you are building.

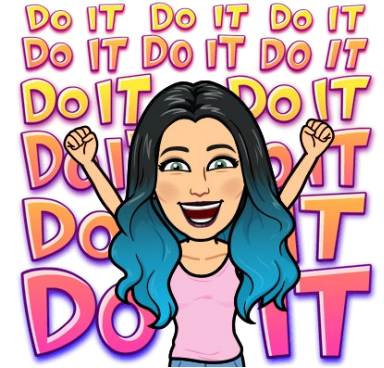


DETERMINING THE BEST PLAN FOR YOU

Step 4: Structure Your Program

Write down a two-week plan including your
vigorous activities

Example Chart:



Week 1				Week 2			
Day	Activity	Time	Completed	Day	Activity	Time	Completed
Monday	Aerobics class	60 mins					
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							



DETERMINING THE BEST PLAN FOR YOU

Step 5: Keep a Log & Evaluate



- Log your chart and fill it in based on what you complete over two weeks and then when you create your program modify what you need to
- Example Modifications: longer time amounts, different activities, higher amounts of weights (reps & sets).



CHECK ON UNDERSTANDING

Check on Understanding:

1. What steps can you take to make exercise activities fun and safe?
2. What are the 5 steps to designing your activity program?
3. What does SMART stand for in SMART goals?
4. What is the best vigorous exercise? Why?
5. Not all exercise needs a warmup and cool down. (T/F)





A4: HEALTHY FITNESS ZONE



Objectives:

Cadets will be able to

1. Access and find their Healthy Fitness Zone (HFZ) using their individual specifics of their gender and age.
2. Explain the different zones of the FitnessGram HFZ based on scores.

Essential Question:

Each student determine if they are in the HFZ or not, and how they can improve to score within the HFZ if not.



HEALTHY FITNESS ZONE

- Healthy Fitness Zone - represents levels of fitness ranges
- Standards are organized by gender and age.
- These zones are arranged in a chart for ages 5-17+
- The charts are found at this link
<https://pftdata.org/files/hfz-standards.pdf>
 - Have students review the chart for their specifics





HEALTHY FITNESS ZONE

FitnessGram Healthy Fitness Zones Scores

- Healthy Fitness Zone (HFZ) - scores in this range are sufficient fitness for good health.
- Needs Improvement (NI) - scores indicate that if the student continues to track at this level there is the potential for future health risks; does not meet standard.
- Needs Improvement - (NI-Health Risk)- low scores that do not meet standards for Aerobic Capacity and Body Composition





CHECK ON UNDERSTANDING

1. What are the two components of the Fitnessgram?
2. What does NI-HR mean?
3. What does HFZ mean?





A5: FITNESS ASSESSMENTS

CADET PHYSICAL FITNESS TEST & FITNESSGRAM

Objectives:

Cadets will be able to

1. Identify the 5 measured fitness components
2. Demonstrate the ability to execute the exercises in each component

Essential Question:

The different components are to assess the health of students, how many students meet standards within this group.



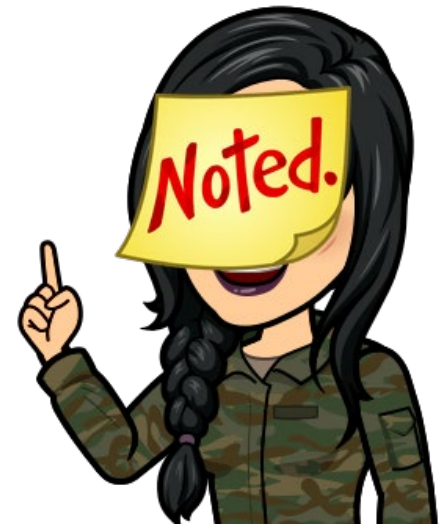
Fitness Assessments Source Documents

CR 3-12 Physical Fitness

<https://cacadets.org/sites/default/files/Regulations/CR%203-12%20Physical%20Fitness.pdf>

FitnessGram Study Guide

<http://tcatitans.org/common/pages/DisplayFile.aspx?itemId=9289647>



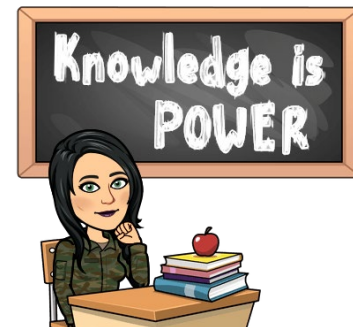


Fitness Assessments

- **FitnessGram-** is a physical fitness “report card,” an educational assessment and reporting of data of America’s young healthy fitness zone ranges.
- **Cadet Physical Fitness Test (CPFT)** is similar to the Fitnessgram, but doesn’t use all the measurements

– Video Stop: Introducing FITNESSGRAM 10.0 - By The Cooper Institute

https://www.youtube.com/watch?v=Xt_1l5BRmNg





Fitnessgram

- Aerobic Capacity: 1-Mile Run or PACER
- Abdominal Strength: Curl-Up
- Upper Body Strength & Endurance: Push-Up or Flexed Arm Hang
- Flexibility
 - Back Saver Sit and Reach
 - Trunk Lift
 - Shoulder Stretch
- Body Composition



CA Cadet Corps PFT Similar to Fitnessgram

- All cadets should take it twice a year
- Aerobic Capacity: 1-Mile Run only
- Abdominal Strength: Curl-Up
- Upper Body Strength & Endurance: Push-Up
- Flexibility
 - Back Saver Sit and Reach
 - Trunk Lift
 - Shoulder Stretch



Aerobic Capacity

1-Mile Run





Curl Up

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



Age	Females # completed	Males # completed
10	12-26	12-24
11	15-29	15-28
12	18-32	18-36
13	18-32	21-40
14	18-32	24-45
15	18-35	24-47
16	18-35	24-47
17	18-35	24-47
18+	18-35	24-47

<https://www.youtube.com/watch?v=uPQpernkK4w&list=PLC79E97B55E313A20&index=3>



Push Up

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



Age	Females # completed	Males # completed
10	7-15	7-20
11	7-15	8-20
12	7-15	10-20
13	7-15	12-25
14	7-15	14-30
15	7-15	16-35
16-18	7-15	18-35

https://www.youtube.com/watch?v=5_D3bacZ7u0&list=PLC79E97B55E313A20&index=5



Back Saver Sit & Reach

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 fingertips 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.



Back Saver Sit and Reach



Age	Female (Inches)	Male (Inches)
10	9	8
11-14	10	8
15+	12	8

https://www.youtube.com/watch?v=d_NL2Pke4NM&list=PLC79E97B55E313A20&index=7



Trunk Lift

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 HFZ 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.



Trunk Lift



HFZ for boys and girls:

9-12 inches

<https://www.youtube.com/watch?v=PvYl3iPUHpY&list=PLC79E97B55E313A20&index=4>



Shoulder Stretch

This test measures upper body flexibility. The objective is to touch the fingertips together behind the back with one hand reaching over the shoulder and the other under the elbow.

- The test is repeated once with each “side” of the body. The left is measured when the left hand reaching over the shoulder and the right is measured with the right hand reaching over the shoulder.
- Touching the fingertips of one hand to the other is considered being in the Healthy Fitness Zone.
- In order to “pass” this test, BOTH sides must be in the Healthy Fitness Zone.



Shoulder Stretch



HFZ:

Able to touch fingertips

https://www.youtube.com/watch?v=Vue_8KqEmkQ&list=PLC79E97B55E313A20



Fitness Assessments: California PFT

- Body Composition (not part of CACC PFT)
 - Measured by
 - Skinfold Test- a pair of calipers used to form and measure the thickness of skinfolds in order to estimate the amount of body fat
 - Bioelectric Impedence Analyzer – a floor scale like device that sends an electronic signal through the body and gives a reasonably accurate fat percentage.
 - Video Stop: Body Fat Percentage- Bioelectrical Impedance Analysis- BIA



» <https://www.youtube.com/watch?v=sA1-Qtz3KU>

» [CDE PFT Body Mass Index BMI](#)

<https://www.youtube.com/watch?v=na0NDBjFFQs&list=PLC79E97B55E313A20&index=2>



CHECK ON UNDERSTANDING

1. For the Cadet PFT, can cadets choose between the 1-Mile Run and the Pacer? Yes/No
2. Which exercises measure flexibility?
3. What are two ways to determine/calculate BMI?



THINKING...

