

प्रश्न १. आरोग्याधिष्ठीत शारीक सुधृढता व कारक सुधृढता.

२. कौशाल्याधिष्ठीत शारीक सुधृढता.

## शारीरिक शिक्षण -

शारीरिक हालचालींच्या माध्यमातून दिले जाणारे शिक्षण शारीरिक शिक्षण होय.

शारीरिक शिक्षणातून फक्त स्नायू संवर्धन किंवा बलसंवर्धन अपेक्षित नसून शरीर, मन व बुद्धी यांच्या माध्यमातून बोधात्मक, क्रिया कौशल्यात्मक व सामाजिक क्षेत्रांद्वारे सर्वांगीण विकास घडवणे हे आहे.

ज्या शिक्षणामध्ये आरोग्य, शारीरिक कौशल्य, विचार करण्याचे कौशल्य व समातोल व्यक्तिमत्त्व घडवून आणण्याचे कार्यक्रम असतात तेच शारीरिक शिक्षण होय.

सांघिक वृत्ती, आज्ञापालन, नायकत्व, शिस्त, खिलाडू वृत्ती, समाजनिष्ठा, श्रमप्रतिष्ठा, स्वावलंबन इ. गुणांचा विकास शारीरिक शिक्षणामधून होतो.

## व्याख्या -

- १ विविध हालचालीतून व्यक्तीला प्राप्त होणा-या अनुभवांचे संघटन म्हणजे शारीरिक शिक्षण होय.
- २ शिक्षणाच्या सर्वकस पध्दतीचा शारीरिक शिक्षण हा एक भाग आहे. त्याचे प्रमुख उद्दिष्ट बालकाचा शारीरिक, मानसिक, भावनात्मक व सामाजिक विकास घडवून आणून त्यास आदर्श नागरिक बनवणे हे आहे.

## आरोग्याधिष्ठित शारीरिक सुदृढता व कारक सुदृढता -

### Health Related Physical Fitness -

हालचाल हा प्रत्येक जीवनाचा स्वभाव आहे. हालचाल ही स्वभाविक घडून येणारी क्रिया आहे. अशी ही नैसर्गिक हालचाल जर योग्य होत नसेल तर व्यायाम, खेळ याद्वारे मुद्दाम घडवून आणावी लागते.

हालचाल करण्यासाठी शरीर, शरीरातील स्नायू, मज्जासंस्था, इंद्रिये यांच्यात नैसर्गिक क्षमता असते.

## शारीरिक सुदृढतेची संकल्पना -

शारीरिक सुदृढता असलेली व्यक्ती आपली दैनंदिन कामे न थकता आनंदाने व उत्साहाने करते. तसेच आयुष्यातील अनेक समस्या सोडवण्यासाठी तिला फार कष्ट करावे लागत नाही व ती व्यक्ती जीवनातील आनंदाचा उपभोग घेण्यासाठी समर्थ असते.

सर्वसामान्य व्यक्ती व खेळाडूंची शारीरिक सुदृढता यात खूप फरक असतो.

सर्वसामान्य व्यक्तीत आरोग्याधिष्ठित शारीरिक सुदृढतेची ( Health Related Physical Fitness ) तर खेळाडूंना कौशल्याधिष्ठित शारीरिक सुदृढता / कारक सुदृढतेची ( Skill Related Physical Fitness / Motor Fitness ) आवश्यकता असते.

## शारीरिक सुदृढतेचे प्रकार -

- १ आरोग्यधिष्ठित शारीरिक सुदृढता (H.R.P.F.)
- २ कौशल्याधिष्ठित शारीरिक सुदृढता / कारक सुदृढता ( S.R.P.F./ Mo.Fi.)

### अ. आरोग्यधिष्ठित शारीरिक सुदृढता (H.R.P.F.) -

- १ रुधिराभिसरण दमदारपणा - Cardio-vascular Endurance
- २ स्नायूताकद व दमदारपणा - Muscular Strengthen Endurance
- ३ लवचिकता - Flexibility
- ४ शरीर घटक रचना - Body Composition
- ५ पुनवरावृत्ती- Frequency तीव्रता - Intensity वेळ - Time
- ६ व्यायाम प्रकार - Types of Exercises ( वय / लिंग / कुवत )

### अ. आरोग्यधिष्ठित शारीरिक सुदृढता (H.R.P.F.) -

सर्वसामान्य लोकांना दैनंदिन जीवन चांगल्या पध्दतीने जगण्यासाठी आरोग्यधिष्ठित शारीरिक सुदृढतेची आवश्यकता असते. आरोग्याधिष्ठित शारीरिक सुदृढता प्राप्त करण्यासाठी पुढील घटकांचा विकास होणे खूप गरजेचे असते.

## A) रुधिराभिसरण दमदारपणा - Cardio-vascular Endurance -

" थकव्याच्या अवस्थेतही सातत्याने जोशपूर्ण हालचाली करण्याची रुधिराभिसरण संस्था व संपूर्ण शरीराची क्षमता म्हणजेच रुधिराभिसरण दमदारपणा होय."

आरोग्याधिष्ठित शारीरिक सुदृढतेचा दम लागणारे व्यायाम प्रकार हा एक अत्यंत महत्वाचा घटक होय. शरीरातील अति महत्वाचा म्हणजे हृदय, फुफ्फुसे, रक्ताभिसरण या संस्थांशी आणि नाक, हात, श्वासपटल यांसारख्या महत्वाच्या इंद्रियांशी या घटकाचा संबंध येत असतो. प्राणवायू, रक्त पाठवणे, रक्त गोठवणे ही क्षमता संपूर्ण शरीरभर अत्यंत योग्य प्रमाणात व योग्य वेगाने रक्त पुरवण्यास मदत करते. हृदयाचे काम कार्यक्षमतेने होण्यासाठी मदत होते. व्यायाम तसेच व्यायाम प्रकार - चालणे, पळणे, टेकडी चढणे, सर्कीट ट्रेनिंग, पळण्याचे प्रकार, दोरीवरच्या उड्या इ.

## B) स्नायूताकद व दमदारपणा - Muscular Strengthen Endurance -

बल निर्माण करण्याची स्नायूंची क्षमता म्हणजे ताकद होय .

रोधास प्रतिरोध किंवा रोधावर मात करण्याची स्नायूंची क्षमता म्हणजे ताकद होय.

वजन ओढण्याची, उचलण्याची आणि ढकलण्याची क्षमता असा सर्व सामान्यपणे अर्थ केला जातो.

ताकद वापरत असताना स्नायू आकुंचन व प्रसरण पावतात.

जास्त वजन उचलायचे असल्यास वेग कमी असतो कमी वजन उचलताना वेग जास्त असतो.

### ताकदीचे प्रकार -

१ स्थिर ताकद

२ गतिमान ताकद

१ स्थिर ताकद ( Static Strength ) -

रोधास प्रतिरोध करण्याची स्नायूंची क्षमता म्हणजे स्थिर ताकद होय.

एखादी स्थिती धरून ठेवण्यासाठी वापरली जाते.

उदा. लिहिताना मानेचे स्नायू स्थिर ताकद वापरतात. ही ताकद वापरताना स्नायूंची हालचाल होत नाही.

व्यायाम - दंड पुल, अप्स, पुश अप्स, जिममधील व्यायामप्रकार - लंझेल्, सिटींग बॉ ल थ्रो करणे, फिनील प्रेस करणे.

२ गतिमान ताकद ( Dynamic Strength ) -

रोधावर मात करण्याची स्नायूंची क्षमता म्हणजे गतिमान ताकद होय.

स्नायूंचा दमदारपणा ( Endurance Strength) - कोणतीही कृती किंवा हालचाल करत असताना स्नायूंची दीर्घ वेळ कार्य करण्याची क्षमता म्हणजे स्नायूंचा दमदारपणा होय.

### C ) लवचिकता ( Flexibility )

" सांध्यांची पूर्ण हालचाल होणे म्हणजे लवचिकता होय . "

शरीर लवचिक असणे हे आरोग्याचे एक प्रमुख लक्षण आहे. लवचिकता ही निसर्गाने मानवास दिलेली देणगी आहे. शरीर तरुण ठेवण्यास आपल्या नेहमीच्या हालचालीत एक प्रकारची सहजता व सौंदर्य आणण्यात लवचिकता खूप उपयुक्त ठरते.

व्यायाम , आसने, सुर्यनमस्कार, स्ट्रेचिंग प्रकार या प्रकारांमुळे शरीरात लवचिकता येते.

लवचिकता कमी झाल्यास मान, पाठ, गुडघे, खांदे यांची झीज होऊन ते दुखु लागतात.

### D ) शरीर घटक रचना ( Body Composition ) -

"शरीरात असलेला मेद व मेद विरहित वजन यांचे गुणोत्तर म्हणजे शरीर घटक रचना होय . " BMI = २१ - २८ % m, २० - २६ % w

BMI = १८.५ % - Underweight

१८.५ to २४.९ - Normal

२५ to २९.९ - Overweight

३० to Over - Obesity

आपले शरीर प्रमाणबद्ध ठेवणे अत्यावश्यक आहे. प्रमाणबद्ध शरीररचनेचा एक महत्वाचा घटक आहे. आहार, दैनंदिन कामकाज, व्यायाम या तिन्हीचा मेळ म्हणजे शरीर घटक रचना .

## ब . कौशल्याधिष्ठित शारीरिक सुदृढता ( S.R.P.F.)

ज्या व्यक्तीला कौशल्यावर आधारीत विशेष प्राविण्याची गरज असते त्याला कारक सुदृढतेची गरज असते. त्यामुळे कौशल्ये सफाईदार करता येतात.

१ वेग (Speed)

२ शक्ती झटका ताकद

३ दिशाभिमुकता / चपळता ( Agility)

४ समन्वय ( Co-ordination )

५ तोल ( Balance )

६ प्रतिक्रिया कल ( Reaction Time )

### १ वेग (Speed) -

" शक्य तेवढ्या जास्तीत जास्त वेगाने संपूर्ण शरीराच्या हालचालीची क्षमता म्हणजे वेग होय. "

एका ठिकाणहून दुस-या ठिकाणी म्हणजे काही अंतरावर माणूस किता थोड्या वेळात पोहोचतो त्यावरून त्याचा वेग मोजला जातो.

व्यायाम - स्प्रिंट मारणे, दोरीवरच्या उड्या इ.

खेळ - खो-खो, प्लायोमेट्रीक खेळ.

### २ शक्ती झटका ताकद -

" वेगात बल प्रयुक्त करण्याची क्षमता म्हणजे शक्ती / झटका / ताकद होय . "

उदा. जागेवर उभे राहून उंच उडी मारणे, चेंडू फेकणे.

### ३ दिशाभिमुकता / चपळता ( Agility) -

" सर्वाधिक वेगात शरीर स्थिती व दिशा नेमकेपणाने बदलण्याची क्षमता. "

एखाद्या विशिष्ट दिशेने जोरात धावत असताना एकदम दिशा बदलण्याच्या गुणास चपळता असे म्हणतात.

उदा. खो-खो, आटया-पाटया, विविध व्यायामप्रकार.

#### ४ समन्वय ( Co-ordination ) -

" कोणतेही काम कौशल्यपूर्ण करण्यासाठी योग्य समन्वय असणे आवश्यक असते. "

" एका विशिष्ट रचनेत शरीराच्या विविध हालचाली एकत्रित करण्याची क्षमता म्हणजे समन्वय. "

उदा. हवेत उडालेला झेल घेणे / बॅटन बदलणे.

#### ५ तोल ( Balance ) -

तोल संभाळणे ही फार सोपी क्रिया आहे, असा आपला समज होतो पण तोल हा स्नायू, नेत्र, आंतरकर्ण, लहान मेंदू यावर अवलंबून असतो.

तोलाचे दोन प्रकार खालिलप्रमाणे,

अ. स्थिर तोल - एक व दोन पायावर उभे राहणे.

उदा. उभे राहणे, चालणे, विविध आसन प्रकार, रोल मारणे, जिमनॅस्टिकमधील बाबी.

ब. गतिमान तोल - खेळातील गतिमान कौशल्य.

ही क्षमता सरावाणे विकसित होते.

#### ६ प्रतिक्रिया कल ( Reaction Time ) -

" चेतकास त्वरीत प्रतिसाद देण्याचे सामर्थ्य म्हणजे प्रतिक्रिया होय. "

पंचेद्रियांमार्फत होणा-या संवेदनांना आपण कमीतकमी अशा किती काळात प्रतिक्रिया देतो त्यास प्रतिक्रिया कल असे म्हणतात.

उदा. रनिक स्टंट च्या वेळी त्वरीत पळणे.

उजेड, आवाज किंवा स्पर्श यांचा शरीराच्या निरनिराळ्या अवयवांचा किंवा सर्व शरीराचा प्रतिक्रिया कल वेगवेगळा असतो त्यात सवयीने थोडी सुधारणा होते.

# ASSIGNMENT

## CHAPTER 1: HEALTH RELATED PHYSICAL FITNESS AND MOTOR FITNESS

### 2: Skill Related Physical Fitness

#### INTRODUCTION:

Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps to prevent the diseases of affluence such as heart disease, cardiovascular disease, type 2 diabetes and obesity. It also improves mental health, helps to prevent depression, to promote or maintain positive self-esteem, and can even augment an individual's body image, which is also found to be linked with higher levels of self-esteem.

Physical fitness is discussed here in two major categories:

#### (1) Health-related physical fitness

#### (2) Motor-skill related physical fitness

### 1.1 HEALTH RELATED PHYSICAL FITNESS

Health-related physical fitness: Health-related physical fitness is defined as fitness related to some aspect of health. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardio respiratory endurance. **F.I.T.T.** stands for **F**requency. **I**ntensity. **T**ype and **T**ime. These four principles of physical fitness and training represent the basics for all athletes and sports enthusiasts, from recreational athletes to world class professionals.

**Frequency:** How often are you active?

**Intensity:** How hard are your heart and muscles working?

**Time:** How long are you active?

**Type:** What are you doing?

Applying these four principles in your sports programme will be the beginning towards peak performance in sports.

#### FACTORS FOR DEVELOPMENT OF HEALTH RELATED PHYSICAL FITNESS

##### A) CARDIO RESPIRATORY FITNESS:

It refers to the ability of the circulatory and respiratory systems to supply oxygen to skeletal muscles during sustained physical activity. Regular exercise makes these systems more efficient by enlarging the heart muscle, enabling more blood to be pumped with each stroke, and increasing the number of small arteries in trained skeletal muscles, which supply more blood to working muscles. Exercise improves the respiratory system by increasing the amount of oxygen that is inhaled and distributes it to all the body tissue.

**Cardiovascular Endurance means,** “Body’s ability to continue exertion while getting energy from the aerobic system used to supply the body with energy.

##### D) TARGET HEART RATE (THR):

Target Heart Rate (THR) is a desired range of heart rate reached during aerobic exercise which enables one's heart and lungs to receive the most benefit from a workout. This theoretical range varies based mostly on age groups; however, a person's physical condition, gender, and

previous training are also used in the calculation. Below are two ways to calculate one's THR. In each of these methods, there is an element called "intensity" which is expressed as a percentage. The THR can be calculated as a range of 65% - 85% intensity.

## II) WARM UP EXERCISES

A warm-up is usually performed before participating in technical sports or exercising. A warm-up generally consists of a gradual increase in intensity in physical activity (pulse raiser), a joint mobility exercise, stretching and a sport related activity. Warming up in a process by which human machine is brought to a condition at which it safely responds to the nerve impulses of the person for a quick and efficient action. For example, running or playing an intense sport one might slowly jog to warm muscles and increase heart rate. It is important that warm ups should be specific to the exercise that will follow, which means that exercises (of warm up) should prepare the muscles to be used and to activate the energy systems that required for that particular activity. The risks and benefits of combining stretching with warming up are mixed and in some cases disputed. Warming up prepares the body mentally and physically.

## III) STRETCHING EXERCISE:

Stretching is a form of physical exercise in which a specific muscle or tendon (or muscle group) is deliberately flexed or stretched in order to improve the muscle's elasticity and achieve comfortable muscle tone. The result of it is there is a feeling of increase in muscle control, flexibility and range of motion. Stretching is also used therapeutically to alleviate cramps. Stretching can prevent injury, relax the muscles, and increase range of motion and flexibility, better performance especially for athletes. Although stretching does not prevent injury, it can reduce the risk greatly; especially for the one who stretches properly and on a regular basis. Stretching is more beneficial to those who stretch regularly and opposed to those people who stretch occasionally. Stretching increases blood flow which prevents hardening of the arteries.

## B) MUSCULAR STRENGTH:

Muscular strength is generally defined as the ability to generate force at a given velocity of movement. One of the five primary components of physical fitness-along with muscular endurance, flexibility, cardiovascular fitness and body composition. Muscular strength typically is developed using resistance training. This type of training typically aims to stimulate increased strength on various physiological levels. Strength can be an indicator of overall health or a measure of progress during resistance or rehabilitation training programs. There are several methods for testing physical strength, including the use of certain devices or determining how much weight can be used during certain exercises.

### Strength is of two types:

- a) Speed Strength
- b) Limit Strength

#### a) SPEED STRENGTH:

Speed strength is defined as the ability which quickly executes an unloaded movement or a movement against a relatively small external resistance.

There are two components of speed strength

##### 1) Starting Strength:

The ability to recruit a large number of muscles fibers immediately.

##### 2) Explosive Strength:

The ability to accelerate through the lift, or the ability to continue developing force at a high rate of speed.

Training should be done four days a week to develop the muscles of our body (upper body, center body and lower body).

**b) LIMIT STRENGTH:**

It is the amount of force that you can generate for all out efforts. Consider Limit Strength as the base upon developing your muscles.

<b>ACTIVITY</b>	<b>MUSCLES WORKED</b>
<b>Warm Up</b>	<b>Body and Mind</b>
<b>Stretching/Flexing</b>	<b>All major muscles/ joints</b>
<b>Leg Extension</b>	<b>Quadriceps</b>
<b>Leg Press</b>	<b>Quadriceps, Hamstrings, Gluts</b>
<b>Leg Curls</b>	<b>Hamstrings</b>
<b>Standing Calf Raises</b>	<b>Gastrocnemius, soleus, Plantaris</b>
<b>Groin Poppers</b>	<b>Hip Abductor</b>
<b>Hip Poppers</b>	<b>Hip Abductor</b>
<b>Back Extension</b>	<b>Spinal</b>
<b>Sit Ups/ Crunches</b>	<b>Abdominal</b>
<b>Torso Rotation</b>	<b>Obliques</b>
<b>Arm Curls</b>	<b>Biceps</b>
<b>Wrist Curls</b>	<b>Wrist Flexors/Extensors</b>
<b>Lat Pull Down</b>	<b>Latissimus Dorsi, Rhomboids, Biceps</b>
<b>Shoulder Press</b>	<b>Deltoids, Triceps</b>
<b>Rowing</b>	<b>Latissimus Dorsi, Rhomboids, Trapezius</b>
<b>Bench Press</b>	<b>Pectorals, Deltoids, Triceps</b>
<b>Neck Tension</b>	<b>Neck Flexors/ Extensors</b>
<b>Cool Down/ Light Stretching and Flexing</b>	

**C) MUSCULAR ENDURANCE:**

Muscular Endurance is the ability of a muscle or group of muscles to do repeated contractions against a less than maximum resistance for a given period of time. This is in contrast to muscular strength, which is the greatest amount of force that a muscles or group of muscles can exert in a single efforts.

Many daily activities, including sports and weight training, require muscle endurance. Activities like duration or distance running, hiking, skating, swimming and climbing all require muscular endurance, since the muscle is under load or in tension for extended period of time.

**D) FLEXIBILITY:**

A person's flexibility refers to the ability of your full range of motion. Having flexibility in your muscles allows movement around the Joints and that means

- Better posture
- Less muscles tension and soreness
- Reduced risk of injury
- More relaxation for the mind and body

Experts recommend stretching after your workout, when your muscles are warm and pliable

**The Different Types of Flexibility are**

**a) Dynamic Flexibility:**

It is also called as Kinetic Flexibility. It is the ability to perform dynamic (or kinetic) movements of the muscles to bring a limb through its full range of motion in the joints

- b) **Static flexibility:** It is also called as active flexibility. It is the ability to assume and maintain extended position using only the tension of the agonists and synergists while the antagonists are being stretched. For example, lifting the leg and keeping it high without any external support (other than your own leg muscles).

**Exercises to develop flexibility are (1) Suryanamaskar, (2) Asanas.**

1) **Suryanamaskar:**

Suryanamaskar relieves stiffness, energizes the body and refreshes the mind. It is a form of exercise for all fitness levels. It is spiritual uplifting exercise and promotes a keen awareness of the interconnectedness of your body, mind and breath. The beneficial advantage of Suryanamaskar is, it provides workout for the muscles. It also benefits joints, ligaments and the skeletal system by improving posture, flexibility and balance.

2) **Asanas:**

Asana is a body position, typically associated with the practice of Yoga, originally identified as a mastery of sitting still. In the Yoga sutras Patanjali suggests that asana is to be seated in a position that is firm, but relaxed" for extended, or timeless periods.

E) **BODY COMPOSITION :**

Body composition is used to describe the percentage of fats, bones and muscles in human body because muscular tissue takes up less space in our body than fat tissue. Our body composition, as well as our weight determines leanness. Two people of equal height and body weight may look completely different from each other because of their different body composition.

There are many different ways of measuring the amount of body fat or body composition. They vary in accuracy, ease of measurement, and costs and requirements of equipment.

1) **Waist to Hip Ratio (WHR):**

Divide your waist measurement (at the narrowest point) by your hip measurement (at the widest point). In general, a healthy waist to hip ratio below 0.9 for men and below 0.8 for women.

In general, a waist size over 40" for men or over 35" for women is associated with greater health risk.

$$\text{WHR} = \frac{\text{Waist}}{\text{Hip}}$$

- 2) **Body Mass Index (BMI):** Body mass index is defined as the individual body mass divided by the square of his or her height. The formulae universally used in medicine produce a unit of measure of kg/m. BMI can also be determined using a BMI chart, which displays BMI as a function of weight (horizontal axis) and height (vertical axis) using contour lines for different values of BMI or colors for different BMI categories.

$$\text{BMI} = \frac{\text{Mass (kg)}}{\text{Height (m)}^2}$$

**BMI result categories are**

- Less than 18.5 : underweight
- Between 18.5 and 24.9 : normal weight
- 25 to 29.9 : Overweight

- 30 or over : obesity

### 3) Target Heart Rate (THR):

The Target Heart Rate or Training Heart Rate (THR) is a desired range of heart rate reached during aerobic exercise which enables one's heart and lungs to receive the most benefit from a workout. This theoretical range varies mostly based on age. However, a person's physical condition, gender, and previous training are also used in the calculation. Below are two ways to calculate one's THR. In each of these methods, there is an element called "intensity" which is expressed in percentage. The THR can be calculated at the range of 65%-85% intensity.

Example for someone with  $HR_{max}$  of 180 (age 40, estimating  $HR_{max}$  as  $220 - \text{age}$ ):

65% Intensity:  $(220 - (\text{age} = 40)) \times 0.65 = 117$  bpm

85% Intensity:  $(220 - (\text{age} = 40)) \times 0.85 = 153$  bpm

### 4) Skin Fold Test:

The skin fold estimation methods are based on a skin fold test, also known as a pinch test, whereby a pinch of skin is precisely measured by calipers at several standardized points on the body to determine the subcutaneous fat layer thickness. These measurements are converted to an estimated body fat percentage by an equation.

## 1.2 Motor skill related physical fitness:

Motor skill related fitness is the ability to perform well in physical activities and sports. To improve the performance in sporting activities such as running, gymnastics, etc., one has to work on skill related fitness. Here are the components of skill related fitness:

#### 1) Speed:

Speed is the ability to move your body from one point to another as fast as possible. Activities such as soccer, baseball, and gymnastics require speed. The student should practice more of short distance sprints, like 30, 40, 50, 60, 80, 100, 200 mts. Different games, plyometric games, Frisbee game, etc.

#### 2) Power:

Power is the application of speed and strength to produce a muscular movement. Almost all sports require power to perform well. When we perform a task quickly and as forcefully as we can, the result is powerful. For example a sprint start, a shot put or javelin throw or long jump.

#### 3) Agility:

Agility is the ability to change the direction of your body quickly and efficiently at the speed of your travel. In games such as tennis, agility is important to reach the ball in time. Agility is important for the games like Kho-Kho, shuttle run, handball, hockey, Football, etc.

#### 4) Co-ordination:

Coordination is the ability to use your body part to move smoothly and accurately. Coordination is a skill that recruits the senses such as sight and hearing in connection with body parts to perform tasks accurately and with efficient movement. Coordination integrates the various skill-related components of fitness into accurate and movements. Juggling, hitting a baseball with a bat and dribbling a basketball are all coordination skills. Hand-eye coordination tests or Foot-eye coordination tests are often used to assess coordination.

#### 5) Balance:

Balance is the ability to remain in equilibrium while being stationary or moving. Activities such as gymnastics, ballet, skiing require balance. This component can further be broken down into static balance which is maintaining equilibrium while not moving, and dynamic balance, which is maintaining control of the body while moving without succumbing to or momentum. Balance is important in sports such as dance, gymnastics, ice hockey, figure skating and other sports requiring extreme control.

#### **6) Reaction Time:**

Reaction time is the amount of time taken for you to respond to a stimulus (based on sight and touch). This is important in most sports. The most obvious being responding to the gun at the start of a race, a goalkeeper saving a penalty, or a badminton player reacting to a smash shot. The examples in sports are endless. The above components of skill related fitness are important if you are training for a particular sport. Practicing a particular sport will improve the above components in that sport.

#### **7) Obstacle Course:**

An obstacle course is a series of challenging physical obstacles. Which an individual or team must navigate while being timed. Obstacle course can include running, climbing, jumping, crawling, swimming and balancing elements with the aim of testing speed and endurance. Sometimes a course involves mental tests. Obstacle course in a way is a challenge for student's problem solving skills while performing exercise. It also helps students in developing leadership and teamwork. Creating a unique obstacle course on school grounds is a rather straightforward process. It's also possible to do so without spending a fortune in the process.

Setting up an obstacle course is a wonderful physical activity for children. Children get lots of exercise while having fun. An obstacle course can be setup with items you already have. Usually an obstacle course is set up outdoor, but can be a wonderful indoor activity when the weather is bad. To set up an obstacle course, think of terms such as jump, hop, crawl under, climb over, walk along, go right or go left. A child physical activity includes practicing gross motor skills, balance and coordination. Plan out the course by listing the skills you want the children to practice. Eight to ten stations a good number for school age children.

- Use ladder flat on the ground to run through
- Crawl under a table or broom hung between 2 chairs.
- Hop through hula hoops set on the ground.
- Step over an obstacle such a yardstick between 2 chairs at knee height.
- Walk across balance beam (4" x 4" board).
- Weave in and out of poles made with PVC pipe inserted in sand buckets.
- Squeeze through 2 objects placed close to each other so that child walks sideways.
- Throw ball into wastebasket.
- Carry an object on a spoon (water balloon outdoors, small ball indoors).
- Jump or skip 5 times with skipping rope.
- Bounce or dribble ball to next station (at least 5 times).
- Crawl under or over a row of chairs.
- Throw a beanbag into a laundry basket.
- Run while balancing a beanbag on your head.
- Do a ring toss.
- Play one hole of newspaper Golf.
- Ride a tricycle along a predetermined route.
- Somersault from one point to another.
- Do a handstand.

- Skip in place while reciting a jump rope rhyme.
- Do ten jumping jacks.

You can make changes in this physical activity to fit the ages, abilities and number of children in your group. Make the obstacle course simple at first and gradually increase the difficulty of each station.