

# Knowing Your Body





# 1

## Knowing Your Body

### Fact Sheet



Students in the age group of 10-14 years have entered into the Adolescence period and are generally confused as they undergo physical, physiological and psychological change. All that happens during Adolescence has implications that last through a lifetime and affects both individual and public health.

Children at this age go through rapid but uneven physical growth, social and psychological development. They enter into the physical maturity phase. They develop early adolescent anxieties about the transition to adolescence and puberty in particular. While becoming older brings with it new found freedom and independence, children and adolescents

also recognize the mysteries of transition to puberty and many feel relatively unprepared for profound physical changes they are experiencing. These changing conditions create an impact on the behaviour of the adolescent.

It is important that adults around them provide them support and guidance to facilitate their healthy development.

Through this Unit we have tried to provide an opportunity to the children of this age group to identify themselves at body level through different activities.

These are a few suggested activities. Teachers/Counsellors can devise activities more suitable/relevant and appropriate to age group.

# Activity - Know Your Body !

**Background:** During this time, the students will see the greatest amount of growth in height and weight. Adolescence is a time for growth spurts and puberty changes. An adolescent may grow several inches in several months followed by a period of very slow growth, then have another growth spurt. Changes with puberty may occur gradually or several signs may become visible at the same time.

**Methodology :** The Physical Education teacher/ Nurse or Class Teacher should pin up the given Standard charts (Boys' and Girls' Height and Weight) on the bulletin board of either Medical room or classroom.



**Observation / Discussion :** Any deviation from standard measurements except more height requires attention. In the remarks column teacher / counsellor / nurse can write various dietary measures / general exercise to be undertaken by the student or refer to a doctor.

**Conclusion :** Measuring a child's Height and Weight is a way to monitor her / his growth and development. Recording child's Heights and Weight regularly and serially is more important than a single reading alone.

**Key message :** Student should make conscious effort to maintain body weight within the acceptable normal limit. Even if a student is overweight they should be counselled about the need to come to their ideal weight.

**Suggested activities:** Student should repeat this exercise on her / his own every 4 or 6 months and note the trend of growth. Consult doctor if required.



## CONCEPT

Developing awareness about body height and weight.



## OBJECTIVE

Awareness about body height and weight helps to identify if any measures are required to be taken in case of under - weight, over-weight or any height related problem.

## MATERIALS REQUIRED:



Chart paper, A-4 sheets and Sketch pens



## MODE

Individual



## TIME REQUIRED

20 minutes

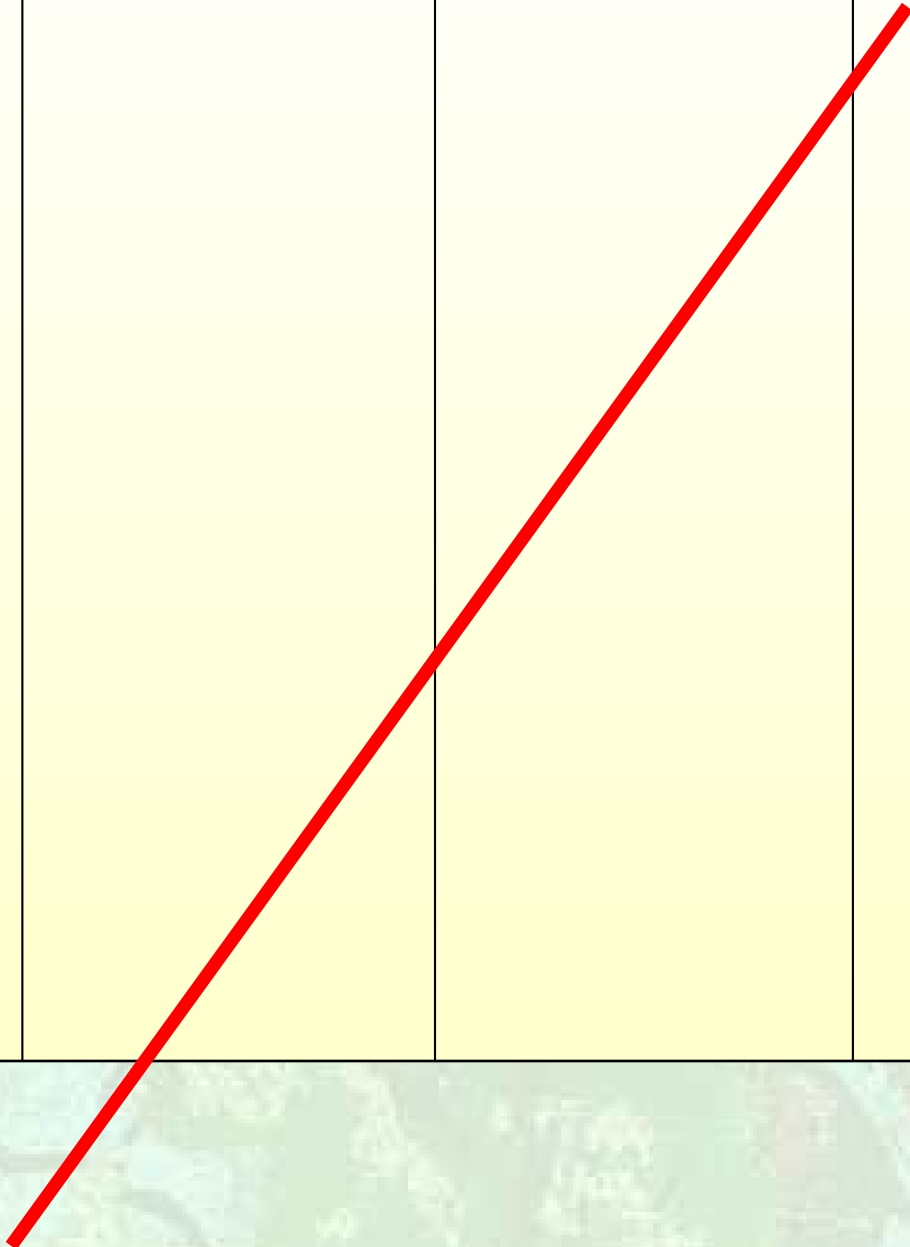


**Important Note :** Teachers must ensure that no child is ridiculed on any physical parameter.

STANDARD CHARTS			
Height for Age (Girls)			
Age	Girls Percentiles (Ht. in cms.)		
	5	50	95
1 Year +	64.5	72.4	80.9
2 Year +	71.2	79.9	89.4
3 Year +	76.5	87.1	97.4
4 Year +	84.2	94.5	104.9
5 Year +	91.0	101.3	112.8
6 Year +	97.3	107.3	118.9
7 Year +	102.2	113.0	124.6
8 Year +	107.5	117.9	130.4
9 Year +	111.4	122.5	134.8
10 Year +	117.0	128.1	140.9
11 Year +	120.9	133.4	147.5
12 Year +	123.4	138.3	152.6
13 Year +	130.8	144.5	155.4
14 Year +	136.3	146.1	158.1

STANDARD CHARTS			
Height for Age (Boys)			
Age	Boys Percentiles (Ht. in cms.)		
	5	50	95
1 Year +	66.7	73.5	82.3
2 Year +	73.3	81.8	90.4
3 Year +	79.1	86.6	98.8
4 Year +	85.5	95.9	106.4
5 Year +	92.0	102.2	112.9
6 Year +	98.2	108.4	120.5
7 Year +	103.8	114.0	125.3
8 Year +	108.8	119.6	133.0
9 Year +	113.0	123.8	138.0
10 Year +	117.5	128.9	141.0
11 Year +	121.9	133.3	147.4
12 Year +	126.2	138.1	153.5
13 Year +	130.9	144.0	160.3
14 Year +	134.6	150.3	165.5

STANDARD CHARTS			
Weight for Age (Girls)			
Age	Girls Percentiles (Wt. in Kg.)		



STANDARD CHARTS			
Weight for Age (Boys)			
Age	Boys Percentiles (Wt. in Kg.)		
	5	50	95
1 Year +	6.2	6.3	11.0
2 Year +	7.2	10.0	12.9
3 Year +	9.0	11.8	15.3
4 Year +	10.6	13.4	17.0
5 Year +	11.8	15.2	20.6
6 Year +	12.7	16.7	22.4
7 Year +	14.1	18.4	24.4
8 Year +	15.4	19.6	25.2
9 Year +	16.8	21.2	27.9
10 Year +	17.2	22.9	30.1
11 Year +	19.6	20.4	34.3
12 Year +	21.3	27.0	25.4
13 Year +	23.2	31.3	44.0
14 Year +	24.7	35.2	48.5

- 2) Teacher should ask each student to either know or find out about her/his Height and Weight and make a note of it.
- 3) Each student should now compare her/his Height and Weight with the Standard Measurements given in the chart.
- 4) Students may be asked to note the findings in the following table.

Sr. No.	Your actual	As per Standard Chart	Deviation	Remarks
1	Weight		More/Less	
2	Height		More/less	

## Activity - Physical Maturation

**Background :** Physical maturation that occurs during puberty results due to hormonal changes. As the child nears puberty, a gland in the brain called the pituitary gland increases the secretion of hormones. Hormonal changes is a time of accelerated growth and physical changes second only to infancy. The physical changes baffle students and often become a cause of concern and anxiety.

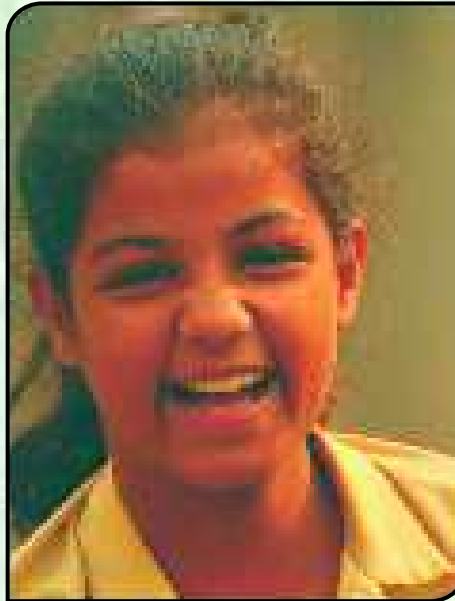
**Methodology :** It is difficult to know exactly about the onset of puberty. Students experience changes during this phase. These physical changes consume much of the energy and concentration of middle school students. Such distractions can greatly impact what they learn. It is the wise teacher who recognizes this, adjusts to the students' needs and develops lessons and strategies that take advantage of these changes.

Teacher can ask the students to collect information about physical maturation and prepare a project report. Students may be guided to refer to library book for collecting information. They must also make a note of their personal experiences.

These reports can be kept in the class library and made accessible to student.

**Note :** If the teacher wishes following information may be provided to students.

**Observation :** We as teachers may have observed that students in this



### CONCEPT

Generate awareness about Physical Maturation.



### OBJECTIVES

- Unpredictable and worrisome middle school students will be able to come out of the confused state by understanding that
- every individual has to pass through this phase in his/her life
  - these changes are signs of growth
  - hormones are responsible for these changes
  - changes are gradual
  - promoting healthy development is instrumental in preventing adolescent health problems

### MATERIALS REQUIRED:



A-4 Worksheets



### MODE

Integrated approach in groups



### TIME REQUIRED

All through the session as and when required



age group trip over their own feet, they squeak, they load up on perfume or aftershave to cover body odours. They eat more. They sleep more. They are confused. All these are a part of the hormonal changes in the body of the adolescents.

**Discussion :** Adolescents experience rapid rates of growth and maturation of the reproductive organs and glands. Together, these physical changes accomplish the biological task of transforming a child into an adult. Rapid change combined with wide variation among individuals tend to make adolescents extremely sensitive to their appearance. At no other time in life are feelings about the self (self-esteem) so closely tied to feeling about the body (body image).

**Conclusion :** Temporary problems with appearance and self-image may occur as a result of acne, changes in fat distribution and increase in weight.

Increased awareness of one's own self and others and the tensions that accompany growing independence require parental support-and the respect of adults and to a certain extent, other people of the same age (peers), such as school friends. Adolescents feel a far greater need for privacy, which needs to be respected.

**Key message :** Teachers and parents must deal with adolescents with great care and patience. Students need direction which may be provided by adults around them.

**Suggested activities :**

- Workshop and activities may be organized to create awareness among parents and teachers. Games, role-plays, debates, discussions involving the theme **Physical Maturation** may be organized to give an opportunity to students for expression.
- Many opportunities need to be provided where adolescents can participate, enhance knowledge, skills and attitude by looking within themselves and their experiences to identify areas where they have problems.



## STUDENT WORKSHEET

### What changes will occur during puberty?

Physical maturation that occurs during puberty is a result of hormonal changes. As a child nears puberty, a gland in the brain called the pituitary gland increases the secretion of a hormone called follicle-stimulating hormone (FSH). In girls, FSH activates the ovaries to start producing estrogen. In boys, FCH causes sperm to develop.

### The following are additional changes that may occur for the male as he experiences the changes during puberty:

- His body size will increase, with the feet, arms legs and hands sometimes growing "faster" than the rest of the body. (This may cause the adolescent boy to experience a time of feeling clumsy).
- Some boys may get some swelling in the area of their breasts as a result of the hormonal changes that are occurring. This is common among teenage boys and is usually a temporary condition. (Consult with your adolescent's physician if this is a concern.)
- Voice changes may occur, as the voice gets deeper. Sometimes, the voice may "crack" during this time. This is a temporary condition and will improve over time.
- Boys will also experience hair growth on their face, under their arms and on their legs.
- As the hormones of puberty increase, adolescents may experience an increase in oily skin and sweating. This is a normal part of growing. It is important to wash and bathe daily, otherwise Acne may develop on skin including the face.

### Specific stages of development is case of girls :

- There is a spurt growth in height and weight, with the feet, arms, legs, and hands sometimes growing "faster" then the rest of the body causing awkward gait.
- The body starts maturing in a way and fills out.
- There may be rapid weight gain or loss.

- Menstruation may begin. Menstruation is a woman's monthly bleeding. It is also called menses, menstrual period, or period. When a woman has her period, she is menstruating. The menstrual blood is partly blood and partly tissue from the inside of the uterus (womb). It flows from the uterus through the small opening in the cervix, and passes out of the body through the vagina.
- Acne and pimples may develop leading to stress about body image. Pimples are the commonest of all chronic disorders in your age group. This is the result of hormonal changes that activate your sebaceous gland. Usually this is a temporary condition that will eradicate, as you will grow up. Balanced diet and personal hygiene helps to correct this condition.

## Activity - Body Image

**Background :** As adolescents experience significant physical changes in their bodies during early puberty, they are likely to experience highly confusing perception of body image. Body image of students strongly influence self esteem.

**Methodology :** Brainstorm : Adolescents may speak in subtle or a strong way about a disliked part of the body or a concern about eating or food; use body comments as a starting point to initiate a discussion to explore their perception of their body and whether or not they are accurate. Give students worksheet plenary. Discuss with teacher or the counsellor about their concerns.

**Observations :** Lean female images and strong and lean male images are common to all societies and body image concerns have become widespread among adolescents.

For girls, “*the way I look*” is the most important indicator of self worth, while for boys, self worth is based on abilities and looks.

**Discussion :** Puberty for boys brings characteristics often perceived as loudable by society-height, speed, broadness and strength.



### CONCEPT

Development of a body image with healthy food habits.



### OBJECTIVES

To help students:

- Develop a healthy Body Image in order to have high self-esteem and high self-worth.
- Overcome influence of myths and misconceptions regarding diet and Body Image.



### MATERIALS REQUIRED:

Copies of Questionnaire for Self-Assessment



### MODE

Groups



### TIME REQUIRED

One period



Puberty for girls brings with it characteristics often perceived as less laudable, as girls generally get rounder and have increased body fat. These changes can serve to further enhance dissatisfaction among girls.

Generally, early development for girls and late development for boys present the greatest challenges to healthy body image.

**Conclusion :** Poor body image is strongly associated with low self-esteem and low self worth, both of which can severely limit the potential for an adolescent to succeed. Teachers and parents must deal with adolescents with great care and patience. Students need direction which may be provided by adults around them.

**Key message :** Over concern with body image and shape can lead to restrictive dieting and unhealthy weight control methods which may lead to potentially dangerous disordered eating behaviors

**Suggested activities :**

**Ask students to answer the following for self assessment.**

- Do you look in the mirror and focus on your positive features and not the negative ones?
- Do you say something nice to your friends about how they look?
- Do you think about your positive traits that are not related to appearance?
- Do you read magazines with a critical eye to find how photographers make models look the way they do?
- Do you want to lose weight? (Be realistic in your expectations and aim for gradual change).
- Do you realize that every one has a unique size and shape?
- Do you have questions about your size or shape? (Ask a health professional).



## WORKSHEET

### Questionnaire for Self – Assessment

- Are you concerned about your weight (or shape or size) at all? Do you think your friends are concerned about their weight a lot?
- Do you know that diets are the worst way to lose or maintain weight? Have you ever dieted? Why?
- Do you know how to tell if you are too thin or too heavy or just right?
- How do you feel right now?
- Do you know that eating only low-fat or fat-free foods is NOT healthy eating?
- Do you know that you need fat in your diet and without it you can have all kinds of health problems?
- What would you do if you had a problem with your eating or if you were concerned about a friend who had a problem?
- Do you know anyone who has a problem with their eating habits? Have you talked to them about it?
- Do you follow any special diet? (like counting calories and/or fat grams, fad diets, skipping meals, etc.)
- Do you ever take any pills to control your appetite or your weight? Do you know anyone who does it? If yes, why do you think he/she does it?
- What kind of exercise do you do? Why do you do it?



# Food & Nutrition



# 2

## Food And Nutrition

Nutrition can be defined as the procurement of substance (nutrients) through food, necessary for growth, development, maintenance and activities of a living organism.

Students of classes-6 to 8 ( age group 10-14) are in the stage of wanting to become independent in all the spheres. So, it becomes our collective responsibility to train them in a way where they learn and become conscious about their food and the nutrition they derive from it.

School going students need nutritive food for their optimum growth as these are the formative years of their physical growth. Teachers and parents must very consciously plan daily routine so that students develop good food habits. Values inculcated at school and home during this period invariably become part of one's personality.

Through this Unit we have tried to provide an opportunity to the students of this age group to experiment and have hands on experiences which can enthuse them and leave an impact of a lifetime.

These are a few suggested activities given in this Unit. Teachers/counsellors can devise activities more suitable/relevant to their social and cultural ethos and appropriate to the age group they deal with .



**STUDENT WORKSHEET - I**

**SELF EVALUATION :-**

1. Cereals, pulses, milk and its products, fruits and vegetables, fat and sugar are the different food groups. Does your food include all these food groups?
2. What do you usually carry for school lunch?
3. What do you prefer to carry for picnics (Chips, Colas, fruits, cakes)?
4. Do you regularly have breakfast before going to school?
5. Does your diet contain a daily serving of raw fruits?
6. Do you exercise daily?
7. Do you include sprouts in your diet?
8. How often do you eat sweets such as chocolates, cakes and ice cream (once a week / twice a week / everyday).
9. Do you prefer adding vegetables in your noodles?
10. Name any two common adulterants found in food.
11. Is it important to check the seal and label before buying a packed food product?
12. Why is khichadi more nutritious than plain rice?
13. Is it necessary to include soya bean/nutrient nuggets in your diet?

## STUDENTS' WORKSHEET - II

## TRUE OR FALSE

1. Carbohydrates, fats and proteins provide the body with energy.
2. Studying hard uses a lot of energy and for this should take vitamin pills.
3. It is a good idea to drink plenty of aerated water in summer.
4. Solid foods do not contain water.
5. Cellulose cannot be digested. Therefore, it is not useful in the diet.
6. Only starch can be obtained from grain and it is fatty.
7. An athletic in training needs meals rich in protein only.
8. Milk contains all nutrients.
9. Polished rice is better than any other variety of rice.
10. The quality of protein present in milk and soya bean is better than those found in pulses.
11. Fruit juices are healthy as compared to whole fruit.
12. Rice eating leads to obesity.
13. The amount of water intake should be reduced if one is suffering from diarrhoea.
14. Anger at meal time interferes with digestion.
15. You need to eat more when you use your muscles vigorously.
16. You need to drink 8 to 10 glasses of water everyday.

- 17. None of the vitamins in vegetable leaks out into the water in which they are cooked.
- 18. It is a good idea to add some baking soda to the water in which green vegetables are to cooked because it keeps them looking fresh and green.
- 19. Exercise and balanced diet are both equally important to avoid obesity.
- 20. Whole grain cereals are more nutritious than refined cereals.
- 21. Cooking food for more then 15 minutes results in loss of nutrients.
- 22. We should wash vegetables before cutting them.
- 23. Fermented foods are nutritious.
- 24. The left over oil after deep frying is safe for re-using as the medium for cooking.
- 25. Excess water may be discarded after boiling food.

**Answers**

1. T	2. F	3. F	4. F	5. F	6. F	7. F
8. F	9. F	10. T	11. F	12. F	13. F	14. T
15. T	16. T	17. F	18. F	19. T	20. T	21. T
22. T	23. T	24. T	25. F			

## Activity – Managing School Canteen!

**Background :** During this phase the students will see the greatest amount of growth in height and weight and so it is important that they are aware of requirement of nutritive diet to keep healthy.

**Methodology :** Students to be given Worksheets I and II before the activity. Class teacher may divide the students in five groups based on their interest and prepare the following duty chart.

**Group-1 :** Preparing day wise menu for a week. (This can be repeated) While preparing menu ensure that you suggest those items, which have high nutritive content and fewer calories. You may also advise to add Soya product wherever it is possible.

**Group-2 :** Preparing chart showing nutritive value of the fresh snack to be served in the canteen.

**Group-3 :** With the help of canteen in-charge teacher, keep a check on the packed food items so that no junk food is sold from the canteen. Canteen should operate as a small outlet with limited facility, which will encourage students to bring food from home.

**Group-4 :** Should occasionally check the hygienic condition and raw materials used in the canteen.

**Group-5 :** Should be responsible for cleanliness outside the canteen and arrange for two types of dustbins with labels so that students throw biodegradable and non- biodegradable waste separately.

Students to be given worksheet III before and after managing school canteen for a week.

**Observation :** Some times due to unavoidable reasons students fail to bring their tiffin from home and so schools are required to provide an alternative solution i.e. canteen. If students and teachers manage the canteen's menu, it can become a great learning experience of making nutritive food available to students and develop co-operative spirit by working as a team.

**Conclusion :** School going students need nutritive food for their optimum growth as these are the formative years of their growth. Food habits inculcated at school and home during this period invariably become part of one's personality.

### CONCEPT

Value of nutritive food.



### OBJECTIVES

- To make nutritive food available to students
- To make students know the nutritive value of what they are eating.
- Students develop co-operative spirit by working as a team.

### MATERIALS REQUIRED:



papers and pencil,  
Student  
Worksheet I, II, III



### MODE

Group Work



### TIME REQUIRED

45 minutes



**Key message :** A school is a place where learning takes place at all levels. In order to make learning an enjoyable experience, it is desired that the school must create an atmosphere where learning takes place effortlessly and when children grow up in such an environment, they turn out to be more aware and hence knowledgeable in every discipline.



**STUDENT WORKSHEET - III**

Fill in the food items you have during breakfast, lunch and dinner. Mention about the nutrient present by putting in respective box

Sr.No.	Food Items	Carbohydrates	Proteins	Fat	Minerals	Vitamins
1.	Breakfast (for e.g.) - ❖ Cornflakes With Milk ❖ One slice of bread with butter ❖ Fruit juice					
2.	Lunch					
3.	Dinner					

Is the meal you have at home balanced ?

# Activity – Newspaper In Health Education

## Background :

Media has a very strong influence on children. Taking advantage of this informal approach students can be guided to develop good food habits.

## Methodology :

Teacher may ask students to:

1. Cut one news clipping from the newspaper or magazine related to nutrition and paste it on an A-4 sheet.
2. Read the news article and note down difficult words and queries they have on the same sheet, below the news item.
3. Find out the meaning of these difficult words and write against them.
4. Clarify doubts (queries) from teachers, internet or the library books and note them down on the same sheet.
5. Pin their sheet on the bulletin board and place the bulletin board near library for the other students to read.

## Observation/Discussion :

It is important that students become aware about the food they eat. Newspapers carry many news articles related to food but students are unaware of such information. In order to make them aware, it is important that they are given an opportunity to discuss news related to nutrition among themselves. Gradually students will develop an interest and eventually awareness about food and nutrition.

## Conclusion :

The awareness will motivate students to think and develop an attitude to be selective about the food they eat.

## CONCEPT

Generating awareness about food and learning more about it in an informal way.



## OBJECTIVES

Students will develop a habit of reading newspaper daily and also identify various nutrition related news which will make them concerned about health related issues.



## MATERIALS REQUIRED:

Newspapers, Magazines and Journals



## Mode

Individual Work /  
Pair Work/  
Group Work



## TIME REQUIRED

One period



**Key message :**

Learning takes place all the time. Schools should use all such resources to make learning an enjoyable experience for the students. This will inculcate a healthy practice among the students to learn from these resources through out their life.

**Suggested activities :**

Students together can organize a quiz competition based on the articles put on the bulletin board.



# Activity – Food and Consumer Awareness

**Background :** The market is flooded with large variety of food items. Student must be well informed and trained to make right choices without getting trapped into fake marketing forces.

## Methodology :

Before you buy any food items, note the following carefully

- Date of manufacturing/packing.
- Date indicating time before it is required to be consumed
- Presence of “F.P.O.” or “AGMARK” marks
- Maximum Retail price
- Ingredients used
- Red /green dot indicating non-veg/veg
- Nutrient content

## Observation/Discussion :

Adulteration of food items is becoming more prevalent and eating outside is gaining momentum. When such food is consumed more often, it is important that students know what they are eating.

**Conclusion :** As an enlightened citizen, it is your duty to take up any issue related to adulteration and bring to the notice of concerned authorities.



## CONCEPT

Awareness about food you eat as a consumer



## OBJECTIVE

Students will develop an attitude to be selective about their food habits and also develop awareness about their right as a consumer in order to lead a healthy life.



## MATERIAL REQUIRED

Paper , pencil, Student Worksheet



## Mode

Individual/ Group Work



## TIME

Two periods



**Key message :** All that glitters is not gold. Do not compromise with the quality of food as it directly affects your health.

**Suggested activities :**

Collect information about common adulterants found in milk, turmeric powder, black pepper, mustard seeds, edible oil and honey.

**STUDENT WORKSHEET**

Fill in the table given below for any five food items

Sr. No.	Food item	Date of Packing	Best before	Trade Mark	Ingredients used	Nutrient Content	Red/Green Dot	M.R.P.

Teacher can demonstrate various tests to identify adulterants in the food items. Some are given below.

- **Vanaspati in Ghee or Butter**-Melt one teaspoon full of Ghee or butter sample in a test tube. Add an equal amount of concentrated Hydrochloric Acid and a pinch of common sugar. Shake well for about one minute and allow the tube to stand for five minutes. If you observe a crimson colour appearing in the lower layer, it shows the presence of vanaspati in Ghee or butter.
- **Argemone oil in Edible oil**-Add concentrated Nitric acid to the sample and shake carefully. Observe the colour of the acid layer. A red to reddish brown colour indicates the presence of argemone oil.
- **Metanil yellow in Dal**-Shake five grams of Dal with five ml of water. Add a few drops of Hydrochloric Acid. A pink colour indicates the presence of metanil yellow.

**Note :** Student's must not be allowed to use concentrated forms of acid themselves. Teacher must demonstrate the activities to them.