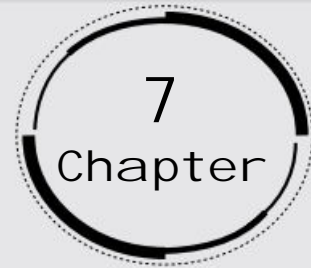


## Reaching the Age of Adolescence



1. What is the term used for secretions of endocrine glands responsible for changes taking place in the body?
2. Define adolescence.
3. What is menstruation? Explain.
4. List changes in the body that take place at puberty.
5. Prepare a table having two columns depicting names of endocrine glands and hormones secreted by them.
6. What are sex hormones? Why are they named so? State their function.
7. Choose the correct option.
  - (a) Adolescents should be careful about what they eat, because
    - (i) proper diet develops their brains.
    - (ii) proper diet is needed for the rapid growth taking place in their body.
    - (iii) adolescents feel hungry all the time.
    - (iv) taste buds are well developed in teenagers.

(b) Reproductive age in women starts when their

- (i) menstruation starts.
- (ii) breasts start developing.
- (iii) body weight increases.
- (iv) height increases.

(c) The right meal for adolescents consists of

- (i) chips, noodles, coke.
- (ii) chapatti, dal, vegetables.
- (iii) rice, noodles and burger.  
cutlets, and lemon drink.
- (iv) vegetable chips

8. Write notes on –
- (a) Adam's apple.
  - (b) Secondary sexual characters.
  - (c) Sex determination in the unborn baby.
9. Word game: Use the clues to work out the words.

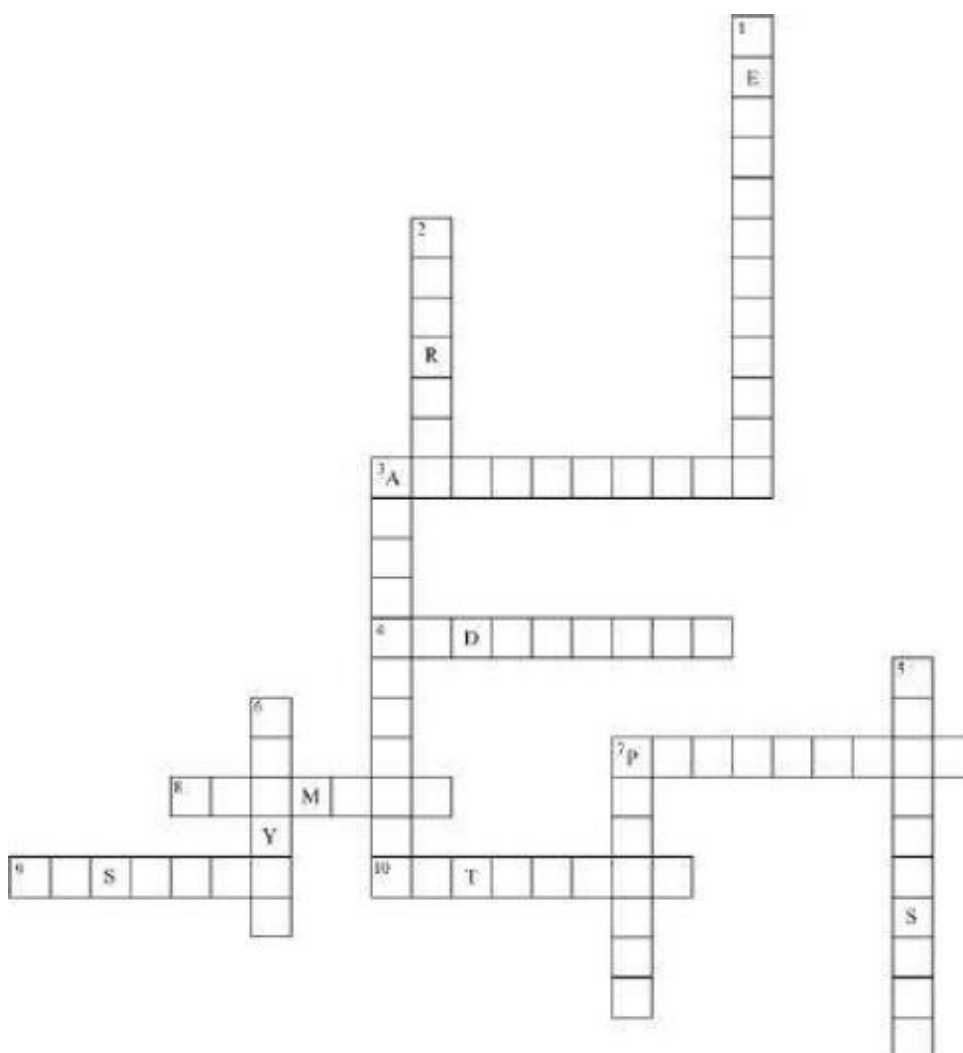
Across

- 3. Protruding voice box in boys
- 4. Glands without ducts
- 7. Endocrine gland attached to brain
- 8. Secretion of endocrine glands
- 9. Pancreatic hormone
- 10. Female hormone

Down

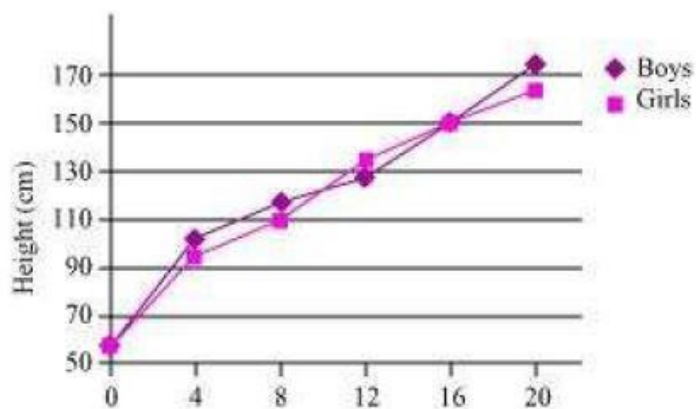
- 1. Male hormone
- 2. Secretes thyroxin
- 3. Another term for teenage
- 4. Hormone reaches here through blood stream
- 5. Voice box

6. Term for changes at adolescence



10. The table below shows the data on likely heights of boys and girls as they grow in age. Draw graphs showing height and age for both boys and girls on the same graph paper. What conclusions can be drawn from these graphs?

Age (Years)	Height (cm)	
	Boys	Girls
0	53	53
4	96	92
8	114	110
12	129	133
16	150	150
20	173	165



## Answers

1. The term used for secretions of endocrine glands responsible for changes taking place in the body is HORMONES. They are responsible for changes that takes place in our body.
2. Adolescence is the age period between puberty and adulthood. During this phase a boy/girl undergoes several changes along with reproductive maturity. These changes are very crucial which takes place from age period of 11 to 19. This period may vary from individual to individual.
3. Menstruation is a monthly process happens in the female after puberty. The inner lining of the uterus which is ready to conceive sheds the fertilization is not happening. Every month, an ovary produces an egg and uterus is ready for implantation. When the egg doesn't fertilize the uterine wall breaks down and blood vessels are broken up which leads to bleeding. This lasts for 3 to 5 days in a healthy female. And the process occurs every month, so this is called as Menstrual cycle.
4. Changes at puberty:
  - (i) There is a sudden increase in height and weight of the body.
  - (ii) Chest broadening in guys and hips broadening in girls are observed during puberty.

- (iii) Hormones play a role in both boys and girls. Changing pharynx leads to slight deepening of voice for girls and much deeper in boys.
- (iv) Appearance of facial and pubic hair in boys, while development of mammary glands in girls is observed.
- (v) Testis grows and starts producing mature sperms while ovaries start the menstrual cycle to produce eggs.

5.

Endocrine gland	Hormones
Testis	Testosterone
Ovary	Oestrogen
Thyroid	Thyroxin
Adrenal	Adrenalin
Pancreas	Insulin
Pituitary	Growth hormone

6. The hormones which are produced by the sex organs are known as sex hormones. The sex organs in male is testis while in female it is ovaries.

Testis produce testosterone as a male sex hormone while oestrogen and progesterone are produced by ovary which is the female sex organ.



Function of testosterone: It brings the secondary sex characters such as growth of facial and pubic hairs, deepening of voice, development of reproductive organs etc.

Function of Oestrogen: It brings the secondary sex characters such as breast enlargement, change in voice, development of reproductive organs etc.

7.

- (a) (ii) Adolescents should be careful about what they eat, because proper diet is needed for the rapid growth taking place in their body.
- (b) (i) Reproductive age in women starts when their menstruation starts.
- (c) (ii) The right meal for adolescents consists of chapatti, dal, vegetables.

8.

- (a) The larynx in human male tends to grow larger in size after puberty and the protruding part can be seen in their throat. Under the influence of sex hormone, the larynx develops and the vocal chords become thicker and the male voice becomes hoarse. This also results of low-pitched voice in male.
- (b) These are those characters which helps in distinguishing male and female. The characters develop during the time of puberty.

In boys:

- (i) Appearance of moustache, beard, chest hair
- (ii) Hair growth in pubic and other parts of the skin.

In girls:

- (i) Increasing the size of the breast and hips
- (ii) Growth of hair at pubic and other parts of the skin.

- (c) Sex determination is based on the sex chromosome that fuses together to make the zygote. Every individual has 23 pairs (46 individuals) of chromosomes whether male or female. Out of that 23 pairs, 22 pairs are the same in both male and female. Last is called as sex chromosome. In male sex chromosome is XY while in female sex chromosome is XX. During gamete formation male produces two types of gametes X gamete and Y gametes while female produces two X gametes.

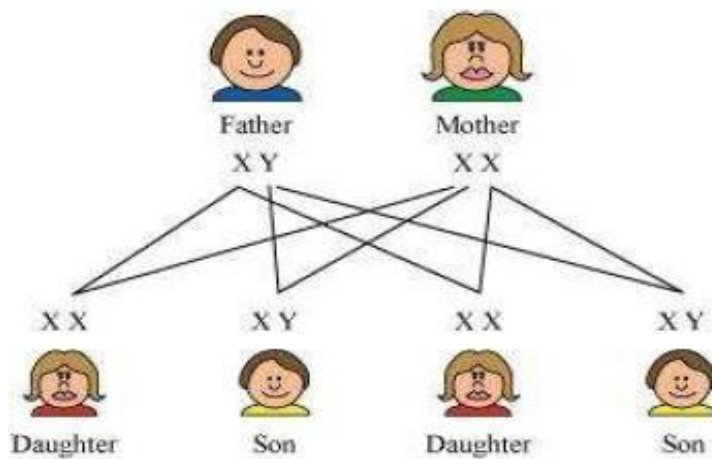
So, during fusion female will give 22+X always while male can give 22+X or 22+Y.

Depending on which one fuses with 22+X (given by female) the sex of the unborn baby is decided.

$22+X (F) + 22+X (M) = \text{girl child}$

$22+X (F) + 22+Y (M) = \text{boy child}$

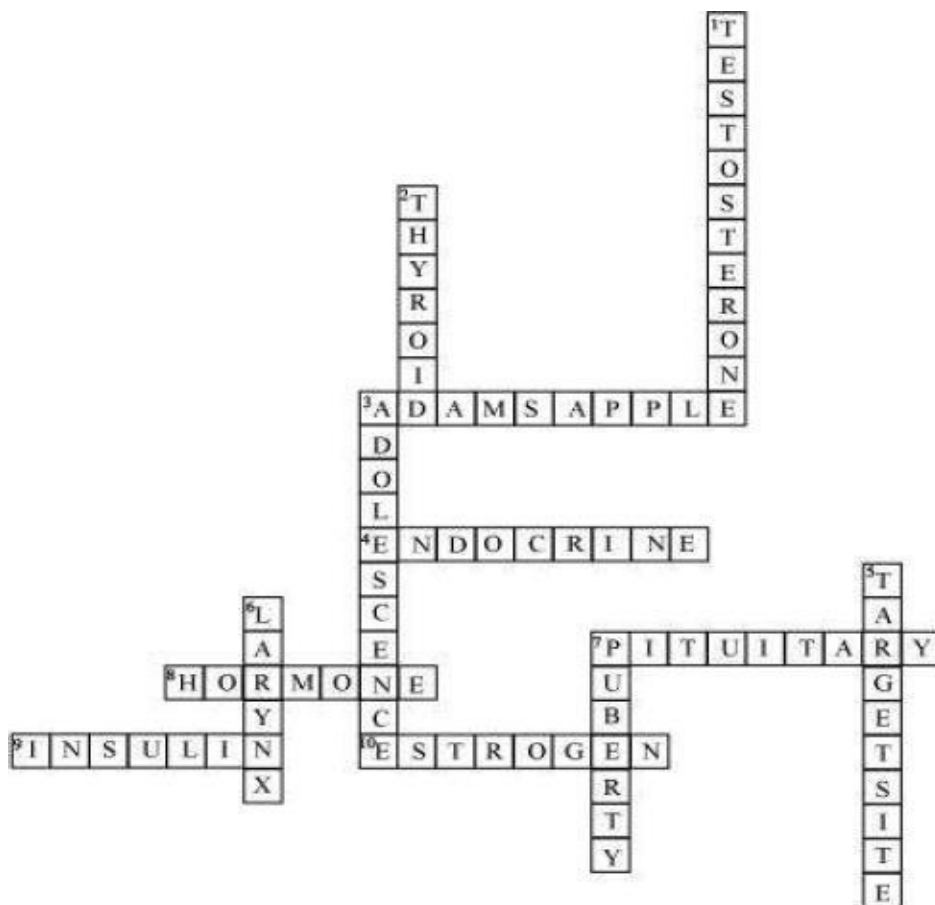
So, X and Y chromosome is the deciding factor for the sex of the unborn kid.

**9. Across**

3. ADAM'S APPLE
4. ENDOCRINE
7. PITUITARY
8. HORMONE
9. INSULIN
10. ESTROGEN

**Down**

1. TESTOSTERONE
2. THYROID
3. ADOLESCENCE
5. TARGET SITE
6. LARYNX
7. PUBERTY



10. The graph depicts the relation between the age and height of both boys and girls. During puberty, there is a sudden increase in height of both boys and girls. Based on the above graph, it can be observed that during the age of 4-8 years, girls have less height as compared to boys. However, as soon as girls reach 12- 13 years, their height shows a sudden increase and becomes more than boys. In later years, growth in both sexes becomes stable. Growth during puberty is under the control of hormones.

**Extended Learning — Activities and Projects**

**1: Find out from your elder relatives about their awareness of the legal status of early marriage you yourself main that information on it for me or teacher parents a doctor or the internet write a 2 minute speech explaining why early marriage is not good for the couple**

**Ans:** Early marriage which I am assuming means marriage between minors needs a parent permission to do so. When you marry when you are minor you are limiting your options for the future and legally binding yourself to another person both financially and emotionally. Marrying is a minor usually lea

**2: Collect newspaper cuttings and information in magazines about HIV/AIDS. Write one page article of about 15-20 sentences on HIV/AIDS. (I have images give me arrival)**

**Ans:** Article on HIV/AIDS is given below :

AIDS disease was 1st reported in the year 1981. This disease is caused by a virus called HIV, that is, human immuno deficiency syndrome. This virus has an envelope which encloses their RNA.

This disease transmits through -

a) mating with an unknown person.

b) transfus

**3: In our country according to 2011 census, there are 940 adolescent females for every 1000 male.find out.**

**a)the concerns of the community regarding this low ratio.Remember that the chance of having a boy or girl is equal.**

**b)what amniocentesis is and how useful this technique is. Why is its use for identification of gender of the unborn child banned in india?**

**Ans:** Explanation: There should ideally be equal ratio of boys and girls. the skewed sex ratio shows the community does not appreciate or accept baby girls. This leads to unnecessary crimes like trafficking etc.

Amniocentesis is a medical procedure which is very helpful in diagnosis of chromosomal abnormalitie

**4: Put your ideas together and write a short note on the importance of knowing facts about reproduction.**

**Ans:** The importance of knowing facts about reproduction are; Most people think of “reproduction” in terms of “human” reproduction, or the continued existence of our species. It's important to know how humans can “reproduce” or make babies so that you can either plan to have children or avoid an un