

Unit # 12

Population Growth and

World Food Supplies

آبادی میں اضافہ اور دُنیا میں غذا کی فراہمی

Learning Outcomes

After completing this unit students will:

- Understand and evaluate contemporary social and economic issues
- Summarize the main points of the discussion for the benefit of the whole group
- Summarize the text with the help of mind map
- Write a letter to the editor expressing their ideas, points or opinions clearly

Pre-Reading

- **What do you understand by the term 'over-population'?**

Ans. Over population means when population exceeds the resources available in the country.

- **Why is over-population a big challenge of twenty first century?**

Ans. Because over population has caused the shortage of many civic facilities.

- **How are population and food supplies interdependent?**

Ans. Population and food supplies are interdependent because more population needs more food and other resources.

For the Teacher

Use pre-reading activity to give students an understanding of the text. Encourage them to give their views on the picture. Why is the China Wall shown? How is it related to the population issue?

(1) The alarming and incessant growth of population is causing serious economic problems in almost all continents. Great pressure is being placed on arable land, water, energy, and biological resources. As the world population grows, the food problem will become increasingly severe. The most vulnerable will be population in developing countries. The per capita availability of food grains has been declining for the past 25 years. Certainly, with a quarter million peoples being added to the world population each day, the need for grains and all other food will reach unprecedented levels.

Below, world population and its growth trends are given.

- 10,000 years ago, 10 million people
- By 1850, population was 1 billion
- 80 more years to reach 2 billion in 1930
- 45 years, it doubled again (4 billion in 1975)
- 12 years to reach 5 billion (1987)
- 6 billion in 1999
- By the year 2020, there will be 8 billion

آبادی میں خوفناک اور مسلسل جاری اضافے سے دنیا کے تقریباً تمام براعظموں میں شدید نوعیت کے مسائل پیدا ہو رہے ہیں۔ قابل کاشت اراضی پانی، توانائی اور حیاتیاتی وسائل پر بہت زیادہ دباؤ آتا جا رہا ہے۔ دنیا کی آبادی میں اضافے کے ساتھ خوراک کا مسئلہ بھی پریشان کن صورت اختیار کرتا جائے گا۔ سب سے زیادہ خطرہ ترقی پذیر ممالک کی آبادی کو لاحق ہوگا۔ گزشتہ پچیس سال سے فی کس موجودہ شرح اناج کم ہوتی جا رہی ہے۔ یقینی طور پر روزانہ دنیا کی

آبادی میں ایک چوتھائی ملین (اڑھائی لاکھ افراد) کا اضافہ ہوتے رہنے سے اناج اور دیگر قسم کی غذائی ضروریات ناقابل مثال حدوں تک پہنچ جائیں گی۔ دنیا کی آبادی اور اس میں اضافے کے رجحانات درج ذیل ہیں:

- دس ہزار سال پہلے دس ملین (ایک کروڑ) افراد۔
- 1850ء تک آبادی ایک بلین (ایک ارب) تھی۔
- 1930ء بعد 80 سال (دو ارب) ہو گئی۔
- 1975ء میں چار ارب ہو گئی۔
- 1987ء میں پانچ بلین (پانچ ارب) ہو گئی۔
- 1999ء میں 6 بلین (6 ارب) ہو گئی۔
- 2020ء تک آبادی آٹھ بلین (آٹھ ارب) ہوگی۔

(2) There are about quarter of a million people added to the planet per day. This exponential growth is mostly happening in developing nations.

اس زمین پر روزانہ قریباً ایک چوتھائی ملین (2.5 لاکھ) افراد کا اضافہ ہوتا ہے۔ آبادی میں یہ کئی گنا زیادہ تر ترقی پذیر ممالک میں ہو رہا ہے۔

(3) More than 99 percent of the world's food supply comes from the land, while less than 1 percent is from oceans and other aquatic habitats; The Continued production of an adequate food supply is directly dependent on ample fertile land, fresh water and energy. As the human population grows, the requirements for these resources also grow. Even if these resources are never depleted, on a per capita basis they will decline significantly because they must be divided among more people. At present, fertile agricultural land is being lost at an alarming rate. The shortage of productive fertile land combined with decreasing land productivity is the major cause of current food shortages.

دنیا کی ننانوے (99) فیصد سے زیادہ غذا زمین سے حاصل ہوتی ہے جبکہ ایک فیصد سے کم سمندروں اور دیگر آبی ذرائع سے حاصل ہوتی ہے۔ مناسب غذا کی مسلسل پیداوار کا برابر استدار وہ زیادہ زرخیز زمین، تازہ پانی اور توانائی پر ہے۔ جب انسانی آبادی بڑھتی ہے تو ان کے ذرائع کی ضروریات بھی بڑھ جاتی ہیں۔ یہاں تک کہ اگر یہ وسائل کبھی کم بھی نہیں ہوتے وہ فی کس شرح نمایاں طور پر کم ہو جائیں گے کیونکہ وہ یقیناً زیادہ افراد میں تقسیم ہوں گے۔ فی الحال، زرخیز زرعی زمین خطرناک شرح سے کم ہو رہی ہے۔ زمین کی کم ہوتی ہوئی پیداوار دینے والی زرخیز زمین کی کمی غذا کی موجودہ قلت (کمی) کی بڑی وجہ ہے۔

For the Teacher

Share with students the present situation as we have already started feeling the effects of over population.

What does word "depleted" means?

Ans: The word depleted means exhausted or reduced.

(4) Water is another critical item for all crops. Massive amount of water is required during the growing season for cultivation. In fact, agricultural production consumes more fresh water than any other human activity. In many countries, people are facing shortage of fresh water. Competition for water resources among individuals, regions, and countries and associated human activities is already occurring with the current world population. Water resources, critical for irrigation, are under great stress as populous cities, states, and countries require and withdraw more water from rivers, lakes, and aquifers every year. A major threat to maintaining future water supplies is the continuing over-use of surface and ground water resources.

تمام فصلوں کے لئے پانی ایک اور اہم (ضروری) چیز ہے۔ درحقیقت زرعی پیداوار میں کسی اور انسانی سرگرمی کی نسبت زیادہ تازہ پانی استعمال ہوتا ہے۔ بہت سے ممالک میں لوگ تازہ پانی کی قلت کے مسئلہ کا شکار ہیں۔ دنیا کی موجودہ آبادی میں افراد، خطوں (علاقوں)، ممالک اور متعلقہ انسانی سرگرمیوں میں پہلے ہی پانی کے ذرائع پر مقابلہ ہو رہا ہے۔ آبی وسائل جو کہ آب پاشی کے لئے ضروری ہیں پہلے ہی دباؤ کا شکار ہیں کیونکہ گنجان آباد شہروں، ریاستوں اور ممالک کو زیادہ پانی کی ضرورت ہے اور وہ ہر سال دریاؤں، جھیلوں اور چٹانوں میں موجود آبی ذخائر سے زیادہ پانی نکال

رہے ہیں۔ مستقبل میں پانی کی فراہمی کو برقرار رکھنے میں درجوش ایک بڑا خطرہ زمین کی سطح پر اور زیر زمین پائے جانے والے آبی وسائل کا مسلسل جاری ضرورت سے زائد استعمال ہے۔

Do you also face shortage of water in your locality? Why?

Ans: Yes, we are also facing shortage of water in our locality due to over population.

(5) Fossil energy is another prime resource used for food production. Nearly 80 per cent of the world's fossil energy is being used by the developed countries. The intensive farming technologies of the developed countries use massive amounts of fossil energy for fertilizers, pesticides, irrigation, and for machines as a substitute for human labour. In developing countries, fossil energy has been used primarily for fertilizers and irrigation to help maintain yields rather than to reduce human labour inputs. Because fossil energy is a finite resource, its depletion accelerates as population needs for food and services escalate. Thus, cost of fuel increases everywhere.

خوراک کی پیداوار کے لیے استعمال ہونے والا ایک اور بہترین ذریعہ فوسل انرجی ہے۔ دنیا کی تقریباً اسی فیصد (80%) فوسل انرجی ترقی یافتہ ممالک استعمال کر رہے ہیں۔ انسانی لیبر کے تبادلے کے طور پر ترقی یافتہ ممالک میں کاشتکاری کی ٹیکنالوجیز کے بہت زیادہ استعمال کی وجہ سے فوسل انرجی کی بہت زیادہ مقدار کھا دوں، جراثیم کش ادویات، آب پاشی اور مشینوں میں استعمال کر رہے ہیں۔ ترقی پذیر ممالک میں فوسل انرجی انسانی لیبر کے کم استعمال کی بجائے بنیادی

طور پر کھادوں اور آب پاشی کے لئے استعمال کی گئی ہے تاکہ پیداوار کی شرح برقرار رکھی جائے۔ چونکہ فوسل انرجی محدودیمانے پر پائی جاتی ہے اس لیے انسانی آبادی کی خوراک اور خدمات کی ضرورتیں بڑھنے کے ساتھ اس میں زیادہ تیزی سے کمی واقع ہوئی ہے۔ اس طرح ہر جگہ ایندھن کی قیمتوں میں اضافہ ہوتا ہے۔

For the Teacher

Help students find the cause in the passage, ask the question 'Why'?

Help them find the effect, ask question "What is the result"?

Sometime multiple causes may lead to one effect and sometime one cause may lead to many effects. Ask students to look for clue words (transitional devices) that show cause-and-effect relationships*, such as because, since, as a result, so, the reason that, and consequently.

How is fossil energy a finite source?

Ans: Fossil energy is due to long period that's why it's finite as compared to its consumption.

(6) Certainly, improved technology will assist in more effective management and use of resources, but it cannot produce an unlimited flow of those vital natural resources that are the raw materials for sustained agricultural production. For instance, fertilizers enhance the fertility of eroded soils, but humans cannot make topsoil. Indeed, fertilizers made from finite fossil fuels are presently being used to compensate for eroded topsoil. A productive and sustainable agricultural system depends on maintaining the integrity of biodiversity.

یقیناً بہتر ٹیکنالوجی سے موثر بندوبست کرنے اور وسائل استعمال کرنے میں مدد ملے گی مگر اس طرح سے نہایت اہم قدرتی وسائل استعمال کی وہ فراوانی حاصل نہیں ہو سکتی جو رکی ہوئی زرعی پیداوار کے لیے خام مال کی حیثیت رکھتے ہیں۔ مثال کے طور پر کھادیں خستہ حال زمین کو زیادہ بہتر بناتی ہیں مگر انسان زمین کی اوپر کی سطح (خود) نہیں بنا سکتا۔ درحقیقت، خستہ حال بالائی سطح زمین کو درست کرنے کے لئے فی الحال محدود پیمانے پر پائے جانے والے فوسل سے حاصل ہونے والے ایندھن میں استعمال کیے جا رہے ہیں۔ ایک پیداواری اور قابل اصلاح زرعی نظام کا دار و مدار ماحول میں پائے جانے والے جانداروں کی سالمیت کو برقرار رکھنے میں ہے۔

(7) Strategies for the future must be based on the conservation and careful management of land, water, energy, and biological resources needed for food production. Yet none of these measures will be sufficient to ensure adequate food supplies for future generations unless the growth in the human population is simultaneously curtailed. Several studies have confirmed that to maintain a relatively high standard of living throughout the world, the optimum world population should be less than 2 billion. Therefore, from now until an optimum population is achieved, strategies for the conservation of land, water, energy, and biological resources are to be implemented effectively. Maintaining a sound and productive environment all over is essential.

مستقبل کے لیے حکمت عملی پر مبنی منصوبوں کی بنیاد غذائی پیداوار کے لیے درکار زمینی، آبی، توانائی اور حیاتیاتی وسائل کی بقا اور محتاط بندوبست پر ہونی چاہیے۔ تاہم اگر ساتھ ہی انسانی آبادی میں اضافہ کو کم نہیں کیا جاتا ہے تو ان اقدامات میں سے کوئی قدم بھی اس قدر کافی نہیں ہوگا کہ جس سے آئندہ نسلوں کے لئے غذا کی فراہمی یقینی بنائی جاسکے۔ کئی تحقیقی مطالعہ سے تصدیق ہونی کہ دنیا میں قدرے بہتر معیار زندگی برقرار رکھنے کے لئے دنیا کی زیادہ سے زیادہ آبادی دو ارب سے کم ہونی چاہیے۔ اس لیے اب سے زیادہ سے زیادہ آبادی کی شرح حاصل ہونے تک زمینی، آبی، توانائی اور حیاتیاتی وسائل کے لیے حکمت عملیوں پر بااثر انداز سے عمل کرنا ہوگا۔ ہر جگہ پر مضبوط اور پیداواری ماحول برقرار رکھنا ضروری ہے۔

What other word you can use to replace "optimum"?

Ans: The best is the other word we can use to replace "optimum".

THEME

The world's population is more than 7.0 billion, and it is still growing. It has about doubled in the past forty years. We are now faced with the issue of over population. With the population so high resources are running low. If- things continue like this we are going to encounter major problems in the future. Therefore, there is a great need for countries to limit expanding populations.

Aquifers

a layer of rock or soil that can hold or transmit water

Arable	land used or suitable for growing crops
Critical	serious
Current	present-day
Depleted	reduced
Enhance	improve
Escalate	to become or make something
Fossil	an animal or plant that lived many thousands of years ago and is preserved in rock or as a piece of rock
Integrity	righteousness
Vulnerable	in danger

Vocabulary

A. Give meaning of each word as used in the text.

Words	Meanings
Incessant	Nonstop
Adequate	Sufficient
Integrity	Honesty
Declining	on the way out
Pesticides	insect killer

Massive	Huge
Sustained	Continued
Eroded	Worn
Unprecedented	Unparalleled

B. Make sentences of the following words.

Ample, depleted, critical, current, enhance, optimum

Words	Sentences
Ample	At evening, I have ample time for you for discussion.
Depleted	Minerals resources have depleted very fast.
Critical	Cancer patient is in critical situation.
Current	Federal Government is trying to complete all the running projects during current financial year.
Enhance	Better energy sources enhanced our exports.
Optimum	We should work hard to get optimum rate of economic growth.

C. Complete the following sentences with words beginning with prefix dis- or un-.

1. My shoe is united

(not tied)

The prefixes dis-and un-mean 'not'.

2. Waqar **disagree** with Nazish.

(does not agree)

3. Ali is **unable** to beat me in the video game.

(not able)

4. Waheed **disobey** his parents.

(does not obey)

5. Our teacher says she does not want **unfinished** homework's handed in.

(not finished)

A. Answer the following questions.

1. **Which areas are most affected by incessant growth in population?**

Ans. The alarming and incessant growth of population is causing serious economic problems in almost all continents. The most affected by incessant growth in population are developing countries.

2. **Why are developing countries going to suffer more due to over population?**

Ans. The alarming and incessant growth of population is causing serious economic problems. There is also reverse shortage of food. Therefore, developing countries are suffering more.

3. **What is the major cause of food shortages and malnutrition?**

Ans. The major cause of food shortages and malnutrition is over population.

4. How are water resources under great stress?

Ans. Water resources are under great stress as populated cities, states, and countries require and withdraw more water from rivers, lakes, and aquifers every year. A major threat to maintaining future water supplies is the continuing over-use of surface and ground water resources.

5. What is the effect of depletion of fossil energy?

Ans. In developing countries, fossil energy has been used primarily for fertilizers and irrigation to help maintain yields rather than to reduce human labour inputs. Fossil energy is a finite resource, its depletion accelerates as population needs for food and services escalate. Thus, cost of fuel increases everywhere.

6. What is the limitation of improved technology?

Ans. Improved technology cannot produce an unlimited flow of vital natural resources that are the raw materials for sustained agricultural production. For instance, fertilizers enhance the fertility of eroded soils, but humans cannot make topsoil. Indeed, fertilizers made from finite fossil fuels are presently being used to compensate for eroded topsoil.

7. How can sufficient food supply be made possible for the future generation?

Ans. ensure adequate food supplies for future generations unless the growth in the human population is simultaneously curtailed

8. What strategies should be adopted for safe future?

Ans. We can make it sure by decreasing human population. We should be careful to manage land, water energy and biological resources needed for food supply

Patterns of Text Organization

Text structure	Signal words	Signal to reader
Cause and effect	Therefore, so, for this reason, as a result, is caused by, this leads to, effects of due to	Evidence of cause(s) and effect(s) will be given.

For the Teacher

Help students analyze the paragraphs to identify words, phrases or sentences that support the main idea through cause and effect.

Help them organize information using organizational pattern of cause and effect to complete the activity B.

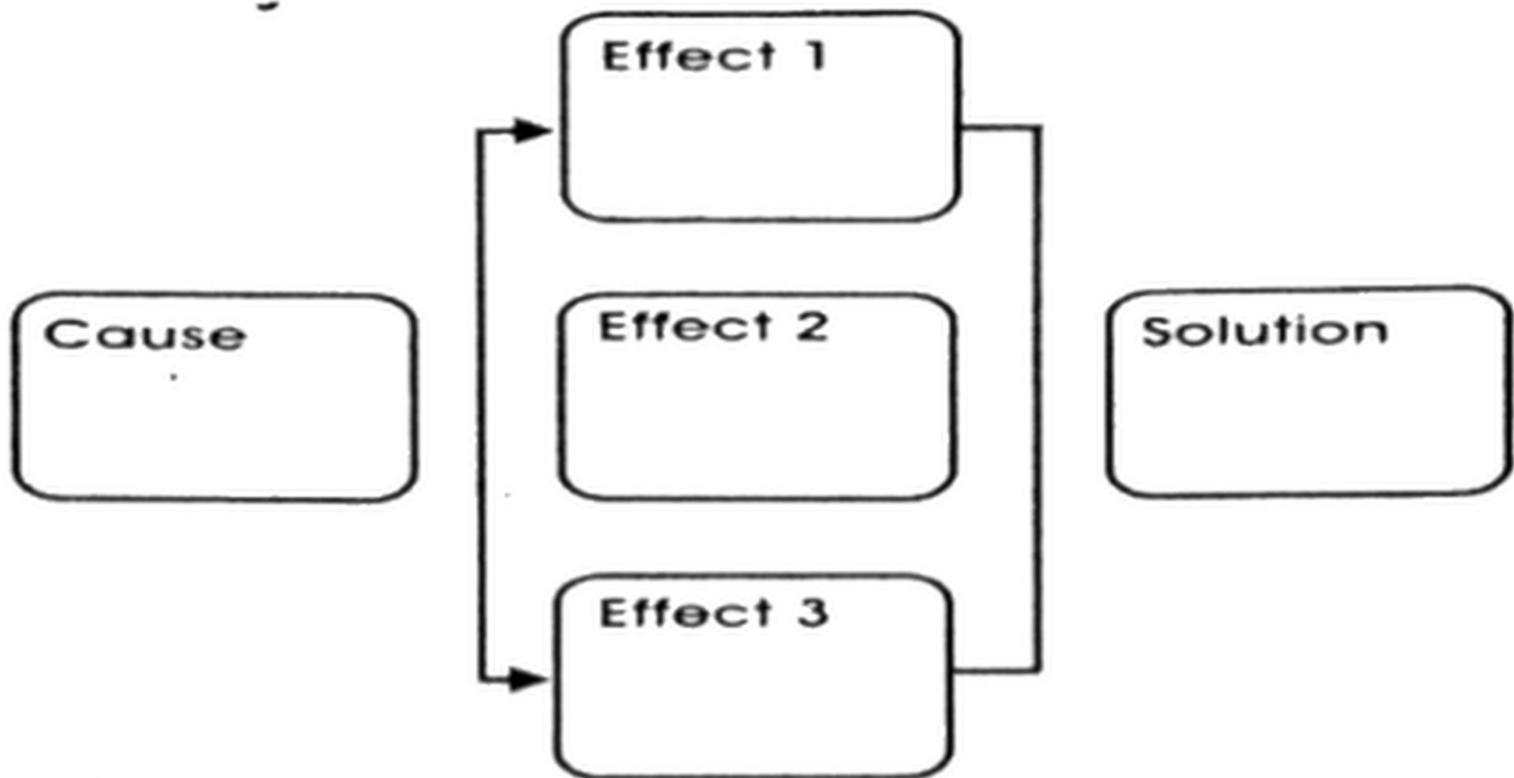
B. Read the text and put information into the graphic organizer showing cause and effect.

Ans. Cause: Over Population

Effect 1: Scarcity of food.

Effect 2: Shortage of fresh water.

Effect 3: Effect 3 depletion of fossil energy.



Solution: Control on population and conservation of resources.

Glossary:

Subordinating Conjunctions:

Subordinating conjunctions connect two groups of words by making one into a subordinating clause.

Time	Condition	Cause and effect	Contrast
after, when, until, soon, before, once, while, as soon as, whenever, by the time	if, whether or not, provided, in case, unless, even if, in the event	because, as, since, in order that, now that, as much as	though, while, although, whereas, even though

A. Choose the appropriate conjunctions.

1. He couldn't go home _____ he had no place to go.

(a) but (b) for (c) though

2. _____ it was hot, he was wearing a coat.

(a) When (b) Although (c) Then

3. _____ I have no money; I cannot go for shopping.

(a) Since (b) Before (c) As

4. He lost his job _____ he was often late.

(a) while (b) because (c) or

5. _____ I had more time I would help you.

(a) Since (b) When (c) If

Answers:

1.b	2.b	3.a	4.b	5.c
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Adverb Clause

Function	Begin with...	Example
Modifies a verb an adjective, or an adverb in the main clause.	A subordinating conjunction such as after, although, because, if, since, when, where	Father called me when he arrived home.

B. Replace each adverb clause by an adverb or adverb phrase.

1. I have not been well since I returned from Murree.
2. I am glad that he has recovered from his illness,
3. As soon as I saw the cobra I ran away.
4. He may go home after his work is finished.
5. I did not pay her, as I had no money with me.

Answers:

1. I have not been well **after** I returned from Murree.
2. I am glad **because** he has recovered from his illness,
3. **As** I saw the cobra I ran away.
4. He may go home **as** his work is finished.
5. I did not pay her, **because** I had no money with me.

C. Underline the adverb clauses in the following sentences and state whether each is an adverb clause of time, place, reason, purpose, result, manner, comparison, condition or concession,

1. The frightened child ran as fast as he could.

Adverb clause of time

2. Even if they hurry, they may not get there on time.

Adverb clause of condition

3. The player is out of the match because he has hurt himself.

Adverb clause of reason

4. If she recovers quickly, she will join the team.

Adverb clause of condition

5. The speaker was so absorbed in his speech that he forgot the time.

Adverb clause of manner

6. She switched on the television so that she could listen to the news.

Adverb clause of purpose

7. They left before the concert ended.

Adverb clause of time

8. He acted as if he owned the car.

Adverb clause of manner

9. Where the road bends dangerously, be more careful.

Adverb clause of plea

10. He will get a good job when he graduates.

Adverb clause of time

For the Teacher

Grammar C: Tell students they can identify the types of adverbial causes with the help of subordinating conjunction used in that sentence. Therefore, it is important to differentiate between subordinating conjunctions of time, condition, cause and effect, condition, purpose etc.

D. Match the two clauses and make meaningful sentences.

1. The rain started while I was driving home.

2. I wrote many books when I was awarded the literature prize.

3. They had to cancel the meeting because the director didn't show up.

4. You won't succeed if you don't try hard.

5. Although, it was raining he went out without an umbrella.

Oral Communication Skills:

Prepare a group presentation on the following.

City life has become increasingly difficult because of over population.

A. Write a précis of paragraph 6.

Ans: Improved technology can help for the better management of natural resources. However, they cannot help us for the unlimited supply of raw materials to sustain agriculture produce. This is only possible through the maintenance of bio diversity.

B. Write an essay on "Over Population".**Ans. Over Population**

Over population is the most important problem of our country. It is a great pity that no heed is being paid to it. Rate of increase in population is going upwards with an astonishing speed but no government has ever taken it seriously and no practical steps have been taken to do the needful in this respect. Over population is a situation when the needs of the population are more than its income and resources due to its enlarged number. This is a great threat to the existence of humanity.

Unfortunately, our dear homeland like many other countries of the third world is indulged in this miserable plight and facing so many horrible problems. Though this country is rich in agricultural produce which is increasing with every coming year due to mechanical cultivation yet all this spare produce is consumed by the over population and still more is needed.

The causes of over population are more than one, the greatest of which is illiteracy and ignorance. Education makes a man, and a woman also, wise and foreseeing but the ignorance snatches from him wisdom, intelligence and power of foresight. An ignorant person only lives in his Present with good or bad memories of the Past. He never thinks of the future and never worries for it. Joblessness and poverty are also considered as the causes of over population.

Another cause of overpopulation is early age marriage. In some countries particularly in our own, the marriage in early age is in vogue. This bad practice increases the birth rate and population of the country dangerously.

In backward countries most of the people think it their national obligation to increase the population at a tremendous rate. So, there is always a race among them in this curious activity.

Over population has created intense dangers to humanity particularly in urban areas it has created grim problems such as pollution, shortage of housing facilities, shortage of schools, hospitals, facilities of refreshment and recreation and above all insufficient food for the people.

Over population is the main cause of spreading pollution in our atmosphere. More the population is, there will be more garbage, more vehicles more industries and thus more smoke and pollution.

In short over population is a great threat to humanity which requires more wisdom and foresight from all the humans. It has now become an international problem. Whole the world should make collective efforts to check the overwhelming flood of population. Religious scholars, teachers, poets, writers and the man in street all should join hands to solve this problem and should tell the world that "Child is beautiful but the over population is ugly",

The essay is closed with the conclusion that man was sent to this world to increase his knowledge piety and prosperity and not to over populate this planet. It will be like digging our own grave and darkening future of the coming generations to increase our number blindly, rather we should try our best to increase human resources by remaining in our limits

For the Teacher

Writing B: Ask students to develop a mind map first, and make an outline of the points/details that they want to include in their essay. Groups of students may be formed to conduct the activity.

