FYTR 1.2

FOUNDATION YEAR

READING TEST

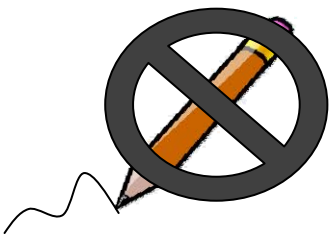
TITLE: **Technological Change**

LEVEL: Skills Practice

WHAT: **Practice Reading Exam including:**
Text
Worksheets
Answer Key

WHY: To give practice in multiple choice exam format similar to the Foundation Year Reading Exam

HOW: Read the text and answer the questions.
Check your answers in the Answer Key.
If your answer doesn't match the Answer Key, refer to the script.



PLEASE DO NOT WRITE ON THE PACKAGE

IF ANYTHING MISSING/DAMAGED, PLEASE CONTACT THE LSU STAFF

PRACTICE EXAMINATION - READING TEST

INSTRUCTIONS FOR STUDENTS:

The questions in this section relate to the reading text: **Technological Change**

There are 6 parts in the reading section of the test:

Part 1: Skimming	(15 marks)
Part 2: Scanning	(15 marks)
Part 3: Vocabulary	(5 marks)
Part 4: Connectors	(5 marks)
Part 5: Reference	(5 marks)
Part 6: University Word List	(5 marks)

Time approximately: 45 minutes

TECHNOLOGICAL CHANGE

Technology is the means by which production takes place. Technological change refers to changes in the methods of production. There are many different ways of classifying technological change. One classification is set out in Figure 1.11 (page 2), which divides technological change into a three-stage process – hand based, muscle-based and brain-based. This, like any classification, is an oversimplification as it presumes no technological change took place prior to the invention of the steam engine. In fact, many changes took place in agriculture and in the production of other commodities as metals were discovered and used. Nevertheless, technological change took off in leaps and bounds after about 1780, which marks the beginning of the Industrial Revolution.

THE INDUSTRIAL REVOLUTION

The Industrial Revolution refers to the major changes in manufacturing which took place around two hundred years ago, initially in England and then through Europe and North America. Pre-industrial societies were organised around agriculture. The predominant mode of production of goods and services outside agriculture was handicraft production. Some degree of specialisation took place in pre-industrial society, such as the local black-smith, but it was limited. This all changed with the advent of the Industrial Revolution. Handicraft production gave way to factory production, following the invention of the steam engine.

The steam engine led to major changes in production. It was used in coal mining, textile manufacturing and transport, among other applications. Machines powered by steam replaced handcrafted methods of production and factories replaced the 'cottage industries' which were family based. The factories heralded in large-scale production and the division of labour, or specialisation of function, of the worker. The craftsman was replaced by the unskilled process worker who performed one function in the production process. Much of this unskilled work was performed by children as there were no laws governing the employment of children early in the nineteenth century. Working conditions were very poor and hours of work were long.

Agriculture declined as an employer of labour. Small farms were replaced by large-scale agriculture. Manufacturing and mining overtook agriculture in employment terms in Britain around 1815. These factors contributed to a flow of migration from the country to the cities. Many small landowners were forced off the land because they could not afford to buy the new agricultural machinery and hence could not compete with the larger landowners. They migrated to the cities in search of jobs, but found the only job available was unskilled factory work, with little pay and long hours.

Electrical power came into use in the early part of the nineteenth century and gradually replaced steam power, leading to a further increase in the scale of production. Coal and later oil were used extensively in industry and in the generation of power from coal-fired power stations resulting in massive increases in smog levels in the cities of Europe.

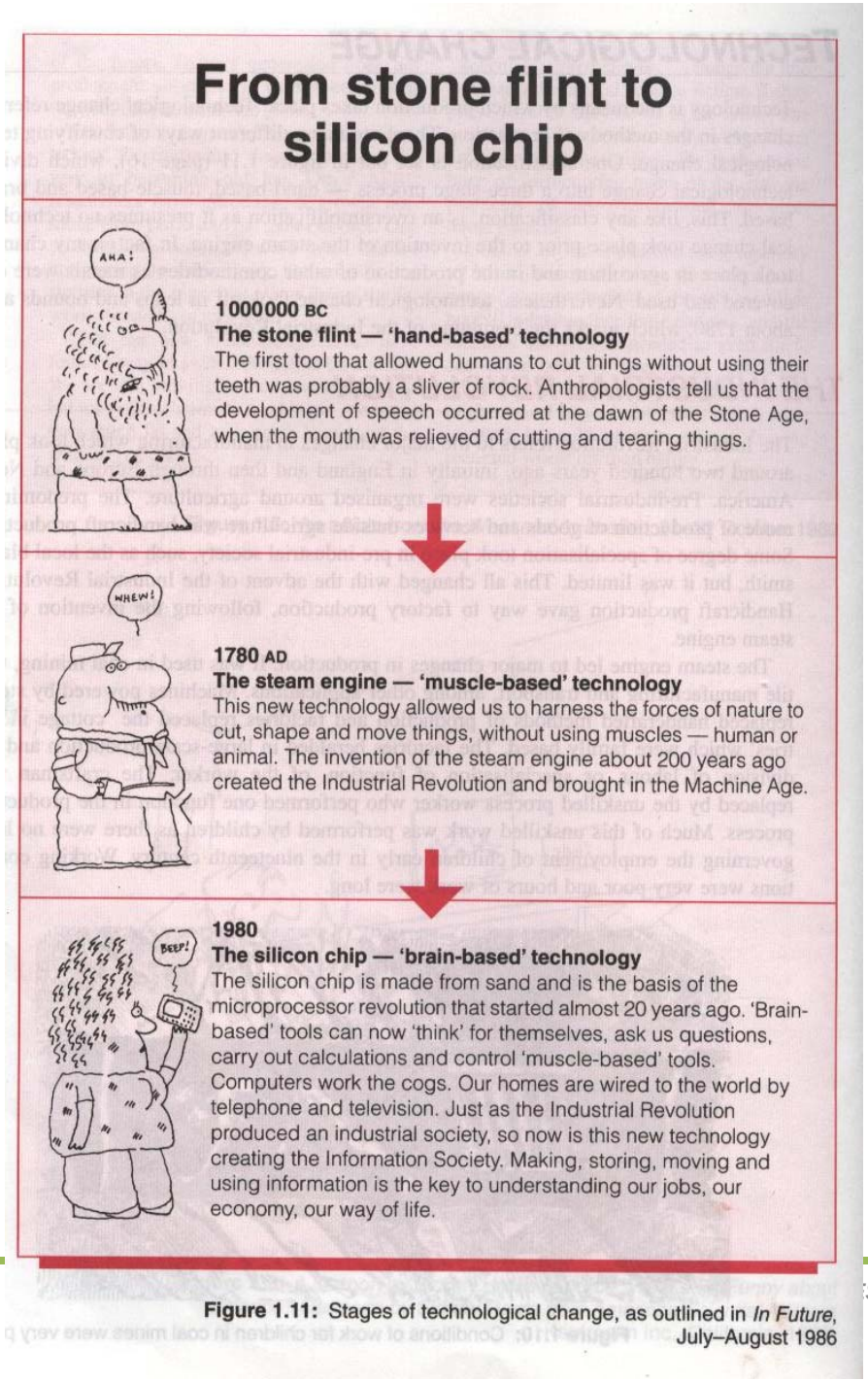


Figure 1.11: Stages of technological change, as outlined in *In Future*, July–August 1986

The Factory Acts that were passed by the British Parliament, to regulate working hours and to restrict the employment of children, brought about some improvement in working conditions. Trade unions were formed to provide workers with some level of organisation to fight against their poor working conditions and low pay. Improvements in pay, working conditions and hours of work were hard fought for and came about relatively slowly.

POST-INDUSTRIAL SOCIETY

Manufacturing industry continued to provide increases in employment until well into the twentieth century due to technological developments such as the internal combustion engine and its widespread use in motor cars, the invention of radio and television and air travel.

By the middle of the twentieth century, manufacturing industry began to decline as an employer in most industrialised countries. It was overtaken by what are known as the service industries — namely, transport, education, tourism, administration, sales and marketing and media.

These trends in employment are summarised in Figure 1.13, which shows the pattern in Great Britain since 1780. A similar pattern of changes in employment would be obtained if a graph was drawn for other industrialised countries.

Figure 1.13: Employment trends in Great Britain since 1780

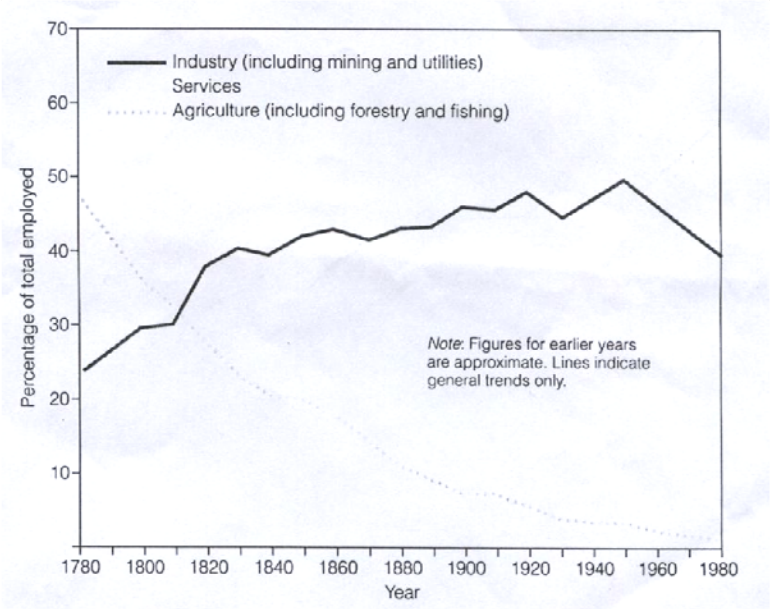


Figure 1.13: Employment trends in Great Britain since 1780 (*Source*: Barry Jones, *Sleepers, Wake!*, Melbourne, Oxford University Press, 1982, p. 3)

(Source: B. Jones (1982) *Sleepers, Wake!* Melbourne Oxford University Press p. 3)

This trend has led some writers to refer to societies in which employment is dominated by the service sector as post industrial societies. The term is not altogether appropriate since manufacturing still accounts for around *25* per cent of employment. The service sector is, however, the major employer in all industrialised societies and both agricultural and manufacturing employment

have shown steady declines.

THE INFORMATION SOCIETY

The invention of the electronic computer in the 1940s has heralded what many writers are calling the information society. The first computers were large, cumbersome machines which took up whole floors of buildings and required experts to program. Developments in electronic technology since then have led to great reductions in the size and cost of computers and increases in their speed, capacity and power. A computer that fits into a briefcase is hundreds of times faster and more powerful than a computer installation in a medium-sized company only fifteen years ago.

These changes are a consequence of the invention of the transistor in the l950s and the integrated circuit in the 1960s. The transistor, which replaced vacuum tubes used in older computers, was smaller, more reliable and cheaper to produce. The invention of the integrated circuit enabled many transistors to be incorporated into one small chip of silicon. This meant that computers could be even further reduced in size, enabling the development of personal computers (PCs). The technology is still developing to make computers even smaller, faster, cheaper and more powerful. Figure 1.14 sets out the developments so far.

Developments in computer technology

Period	Technology	Computer size	Capacity
1950s	Vacuum tubes	One floor of **a** building	1000 bytes
1960s	Transistors	Large cupboard	32 000 bytes
1970s	Integrated circuits	Small cupboard	128 000 bytes
1980s	Large-scale integrated circuits	Desk top	4000 000 bytes

Figure 1.14: Developments in computer technology

Some of the developments which have resulted from the advances in computer technology have led writers to refer to it as an information explosion or information technology revolution. Some examples are as follows:

♦ **Computers in the office**

Computers are now widely used in the office as word processors. They have replaced the typewriter completely. Documents can now be typed, revised and distributed much more rapidly than before. The computer revolution in the office has been complete.

♦ **Computers in the factory**

The increasing power of computers has enabled them to become an integrated part of factory production. At the product design level, through the use of computer aided design (CAD), designers are able to produce plans,

specifications and all types of designs on the computer. These designs are checked by engineers through the use of computer aided engineering (CAE). The products developed are then manufactured

- **Computers in the home**

Due to reductions in their size and cost, computers are increasingly being used in the home. The widest use has been for computer games which serve not just as entertainment but as a means of familiarising children with computers. Increasingly computers are used by people working from home. The computer takes the office into the home.

- **Computers in the school**

Computers are being used in schools both to train students in the use of computers and to teach other material through the use of computer aided learning (CAL). Through this approach, topics in, say, mathematics or science are taught by taking students through a step-by-step instruction process on the computer.

These are just a sample of the uses to which computers are now being put. The incredibly rapid growth in the use of computers has led some to predict a post-service society in which employment in even the service sector will decline and people will have more leisure time available as robots and computers do all the menial tasks. This view has been challenged, however, by others who argue that employment trends do not bear this out.

Reference: R. Bell and R. Hall (1991) *Technological Change* in **Impacts** Jacaranda Press.

QUESTIONS

PART 1: READING FOR THE MAIN IDEA (SKIMMING)

Instruction: Read the text and answer the following questions. Circle the correct answer.

1. **This text**
   a) argues that technological change is necessary
   b) describes the developments in technology
   c) describes the way technological development has changed society
   d) argues that we need to understand technology in order to live in the modern world.
2. **Figure 1.11 shows three stages of technological change. The middle section (1780 AD The steam engine….) corresponds to which of the headings:**
   a) the Industrial Revolution
   b) Post-Industrial Society
   c) The Information Society
3. **The graph in Figure 1.13 is given to show how in the 200 years from 1780 to 1980**
   a) agricultural employment decreased while employment in industry and services increased
   b) overall there was an increase in the number of workers in Great Britain
   c) employment trends in Great Britain fluctuated
   d) it is better to find a job in the services rather than in industry, and worst of all in agriculture
4. **The Information Technology Revolution or information explosion was made possible by**
   a) the invention of computers
   b) the invention of the transistor
   c) the invention of the integrated circuit
   d) all of the above
5. **The main emphasis in this text is on**
   a) the benefits of technology
   b) the effect of technology on employment
   c) the problems associated with technology
   d) the likely future developments in technology and society

PART 2: READING FOR SPECIFIC INFORMATION (SCANNING)

Instruction: Read the text and answer the following questions. Circle the correct answer.

6. **Which of the following is NOT a feature of pre-industrial society?**
   a) Agriculture was the basis of society
   b) Items such as clothing were made by hand
   c) Goods were made by family units
   d) workers were unskilled
7. **During the Industrial Revolution people left agriculture to work in cities. This was because**
   a) they preferred to work in factories
   b) they could not afford to stay on the land
   c) manufacturing and mining became more attractive after 1815 because of regular working hours
   d) there was too much competition between landowners and employers in the cities.
8. **The term *Post-Industrial Society***
   a) means that industry is no longer important in society
   b) means that the manufacturing industry is no longer the main source of employment
   c) is an unsuitable expression meaning ‘the service industry’
   d) refers to a period in industrialised societies beginning in 1780

9. **The Information Society**
    a) began in the 1940s
    b) began in the 1950s
    c) began in the 1960s
    d) cannot be given a precise starting date
10. **This text is not up-to-date. It was published in**
    a) 1986
    b) 1982
    c) 1987
    d) 1991

PART 3: VOCABULARY

Select the most appropriate meaning for the following words as they are used in the text. Line numbers are given for each word.

11. **prior to** (line 8)
    a) before
    b) after
    c) during
    d) in place of
12. **commodities** (line 9)
    a) manufactured goods
    b) convenient objects
    c) means of transport
    d) factories
13. **predominant mode** (line 18)
    a) most common method
    b) old-fashioned style
    c) hand-made model
    d) permanent means
14. **advent** (line 21)
    a) invention
    b) arrival
    c) discovery
    d) celebration
15. **scale** (line 43)
    a) speed
    b) variety
    c) amount
    d) quality

PART 4: CONNECTORS

Select the most appropriate replacement for each of the following connectors in the text. Line numbers are given for each word.

16. **in fact** (line 8)
    a) on the other hand
    b) however
    c) actually
    d) furthermore
17. **nevertheless** (line 10)

a) however
b) furthermore
c) on the other hand
d) actually

18. **hence** (line 39)
a) after that
b) so
c) however
d) moreover

Insert the most suitable connector at the beginning of the sentence given from the text. Line numbers are given.

19. **It was used in coal mining, textile manufacturing and transport, among other applications.** (par. 3, sentence 2, line 24)
a) For instance
b) Such as
c) Moreover
d) Therefore

20. **Improvements in pay, working conditions and hours of work were hard fought for and came about relatively slowly.** (par.6, sentence 3, line 73)
a) For instance
b) Moreover
c) However
d) Therefore

PART 5: REFERENCE

Select the most appropriate choice for what the reference word is referring to. Line numbers are given for each word, and the reference words are written in bold in your text.

21. **It** (line 24)
a) Production
b) the steam engine
c) changes in production
d) the Industrial Revolution

22. **further** (line 43)
a) later than steam power
b) more than the previous production by steam power
c) more widespread than steam power in Europe
d) a large increase in production

23. **It** (line 82)
a) manufacturing industry
b) the employer
c) the middle of the twentieth century
d) industrialised countries

24. **This** (line 115)
e) the invention of the integrated circuit
f) the ability to incorporate many transistors in a small chip
g) the integrated circuit
h) the use of small silicon chips to improve transistors

25. **This view** (line 155)
a) the rapid growth in the use of computers

b) the prediction of a post-service society
c) the idea that employment should decrease in the service sector
d) the increase in leisure time

PART 6: UNIVERSITY WORD LIST

Below is a summary of some of the main points discussed in the text. Choose the most appropriate word to place in each of the numbered spaces. All of the words have been taken from the University Word List.
The (26) _____ of technological change has been immense. It has (27) _____ the way in which people in industrialised countries earn their living. The Information Revolution has now also (28) _____ the lives of people in many countries. There has been a significant increase in the speed at which information is (29) _____ _____ and consequently the speed of change in industry and commerce has also (30) _____ greatly.

26.
a) impact
b) affluent
c) circumstance
d) function

27.
a) transformed
b) restricted
c) shifted
d) preceded

28.
a) affected
b) effected
c) concentrated
d) ensured

29.
a) transformed
b) transmitted
c) signified
d) specified

30.
a) accelerated
b) benefited
c) contracted
d) distorted

ANSWER KEY

PART 1: READING FOR THE MAIN IDEA (SKIMMING)

1.c 2.a 3.a 4.d 5.b

PART 2: READING FOR SPECIFIC INFORMATION (SCANNING)

6.d 7.b 8.b 9.a 10.d

PART 3: (VOCABULARY)

11.a 12.a 13.a 14.b 15.c

PART 4: (CONNECTORS)

16.c 17.a 18.b 19.a 20.c

PART 5: (REFERENCE)

21.b 22.b 23.a 24.b 25.b

PART 6: (UNIVERSITY WORD LIST)

The (26) _____ of technological change has been immense. It has (27) _____ the way in which people in industrialised countries earn their living. The Information Revolution has now also (28) _____ the lives of people in many countries. There has been a significant increase in the speed at which information is (29) _____ _____ and consequently the speed of change in industry and commerce has also (30) _____ greatly.

26. **a) impact** 27.**a) transformed** 28. **a) affected** 29.**b) transmitted** 30. **a) accelerated**