

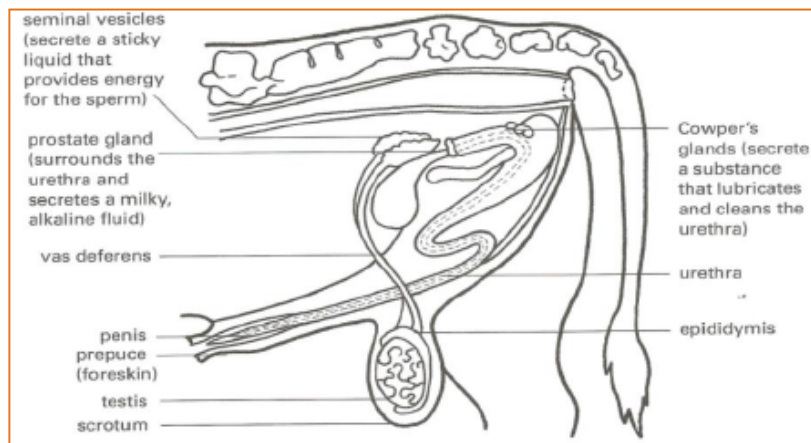
AGRI-SCIENCES

Male reproductive organs

Function and structure of reproductive organs

● Male reproductive system is made up of:

- **Primary** reproductive organ, = testes
- **Secondary** reproductive organs, = penis, epididymis, vas deferens
- Accessory sex glands.



The male reproductive system of a bull

Primary reproductive organs

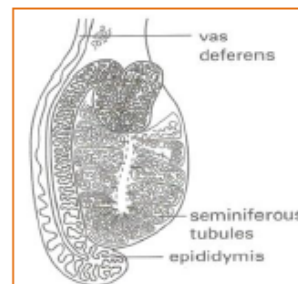
- ◆ Primary reproductive organs in male animal = testes.
- ◆ These organs produce male gametes + sex hormones.
- ◆ Primary reproductive organs control growth, development of secondary reproductive organs.

- ◆ Secondary reproductive organs = structures + organs that play a role in reproduction.

Testes

✱ Testes have two main functions:

- Production of male gametes (spermatozoa)
- Production of male sex hormones.



Cross-section of a testis.

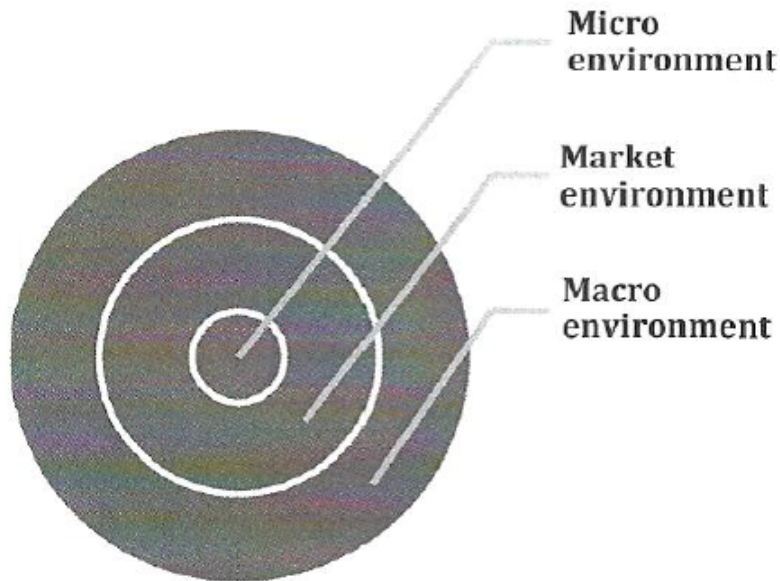
- ✱ Seminiferous tubules, - small, convoluted tubules.
- ✱ Seminiferous tubules join a network of tubules to form head of epididymis.
- ✱ Testes produce male hormone, testosterone.
- ✱ Testosterone is needed for development of secondary sexual characteristics + for normal mating behaviour.
- ✱ Testosterone is needed for functioning of accessory glands, production of spermatozoa, maintenance of male reproductive system.

BUSINESS

Overall Organisation Performance

- ◆ Problems in the business environment, - strategies can be implemented to eliminate / reduce the impact of problems on performance of the business.

Three business environments:



With the macro environment, external business influences were identified using a PE²STLE analysis:

- Political factors
- Economic factors
- Ethical factors

- Social / Socio-Economical factors
- Technological factors
- Legal environment
- Environmental factors

Porter's five forces model was used to look at the market environment and the influences of various role players in the market environment:

- ✱ Level of rivalry / power of competitors
- ✱ Threat of new entrants
- ✱ Substitute products available
- ✱ Power of buyers
- ✱ Power of suppliers

The micro environment includes the eight business functions:

- Purchasing department
- Production department
- Financial function
- Human Resources / Human Capital function
- Marketing department
- Public Relations
- Administrative function
- General Management

- ◆ Performance of the business, - how events in the macro, market + micro environment may have a

CAT

Internet Services and connections

Introduction

- Most essential aspects of computer use are to have internet access.
- Important reason why person would acquire a computer.
- Worldwide computer network consists of computers and networks that are linked using telephone lines, undersea cables, and satellite and microwave connections.
- Purpose of communicating and sharing resources.



- WAN network spread over wide geographical area, city across provinces or countries or continents.
- Purpose: facilitate communication and transfer files over wide geographical area.
- **E.g. cell phone network linking different areas in SA.**
 - Cell phone network linked different areas in SA.
 - Bank networks.
 - Internet.

Internet connections

- People all over the world use internet every day to communicate, check weather, make travel plans, do business, shop, learn.
- Staying connected became extremely important.
- Besides device to connect to internet, also need Internet service provider (ISP).
- Need to decide what type of internet connection you going to use.

Internet service providers

- ISP – company that has permanent, fast connection to internet.

CONSUMER

The commercial pattern

Information on the pattern envelope and instruction sheet

The front of the pattern envelope

On front of envelope you'll find:

- Commercial name of pattern (e.g. Easysew)
- Style number (e.g. 9748)
- Size / size range (e.g. 8 – 10 – 12, L – XL – XXL / Men's neck 40cm)
- Illustration of each of garments, variations
- Special features of pattern (e.g. 8 styles with 1 easy pattern)



The front of a pattern envelope.

The back of the pattern envelope

6 PIECES GIVEN		MISSES' DRESS						
Dress		Extra fabric needed to match plaids, stripes, one-way designs. Use nap yardage and nap layouts for satin or one-way design fabrics. Not suitable for obvious diagonal fabrics.						
D Back facing		STANDARD	Bust	80	82	88	91	97 102 cm
C Front facing		BODY	Waist	58	61	65	69	74 79 cm
E Sleeve view 1		MEASURE-	Hip – 23 cm below waist	85	88	91	97	102 102 cm
F Armhole facing view 2		MENS	Back – neck to waist	39	41	41	42	43 43 cm
		Fabric required	Sizes	8	10	12	14	16 16
		View 1 Dress						
		88 cm or 91 cm without nap						
		112 cm or 114 cm without nap						
		137 cm without nap						
		147 cm without nap						
		View 2 Dress						
		80 cm or 91 cm with nap						
		80 cm or 91 cm without nap						
		112 cm or 114 cm without nap						
		137 cm without nap						
		View 1 or 2 front facing 70 mm of 64, 61, 68 or 91 cm woven or non-woven tab.						
		Garment measurements.						
		Finished back length of dress						
		Width of lower edge of dress						
		Sewing notions – Thread, binding (opt), 58 cm neck type zipper.						

The back of the pattern envelope.

- Back of envelope gives full details about design
- Can use it as shopping guide, indicates everything to purchase for style you wish to make

Here you'll find:

- Style number (e.g. 9748)
- Number of pattern pieces in pattern (e.g. 6 pieces)
- Description of garment(s) e.g. collarless dress with zip
- Shapes of pattern pieces that indicate how easy / difficult garment will be to cut, sew

ECONOMICS

Contemporary economic issues: environmental sustainability

The definition of environment

- ♦ Environment = physical surroundings and physical conditions that affect people's lives.

Includes land, sea and atmosphere - provides a flow of goods and services - following:

- Materials (example soil, water, minerals and timber) and energy from fossil fuels, tides and winds.
- Space, to produce food, erect buildings, develop communications and provide for sporting and recreation activities.
- "Natural world"- consumer good (sense of an amenity) - affords utility directly by providing fresh and clean air, water, sunshine, areas for walking, places for holiday safaris, nature studies, and enjoyment of scenic and peaceful surroundings.
- Dumping place for our waste.

The state of the environment

- Environment - under pressure - human claims on environment are more than what nature can provide for on a long-term basis.

These claims originate because of the following reasons:

Increasing population numbers.

- World's population grows mostly - result of high birth rates in developing countries.

Excessive consumption.

- Caloric food intake by people in developed countries is 30% higher than amount that nature can provide on a sustainable basis.



Human ecological footprint

- Human ecological "footprint" - 50% bigger than what nature could accommodate (ecological capacity) in 2007.
- Estimated that by 2030, a second planet will be needed to accommodate our needs.

GEOGRAPHY

Mapwork techniques

Scale, contours and cross sections

- Scale, contours and cross sections helps determine size and physical shape of an area.

Scale

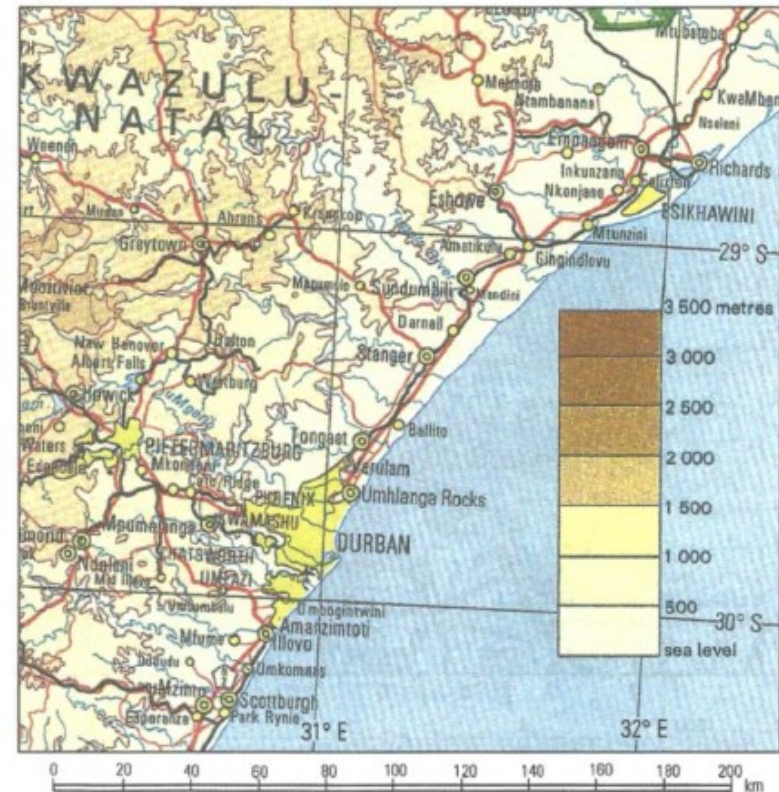
- Scale of 1:50000 = distance of 1 cm on a map represents a real distance of 50 000 cm (half a kilometre) on the ground.
- Map scales shows distances on the ground have been reduced to fit onto a map.

Scale of a map can be given in three ways:

Ratio	Example 1:50000, / fraction, example $\frac{1}{50\ 000}$
Word statement,	Example '1 cm represents 500 m' / '2 cm represent 1 km'
Line scale	Diagram on a map showing distance on ground of any distance on a map.



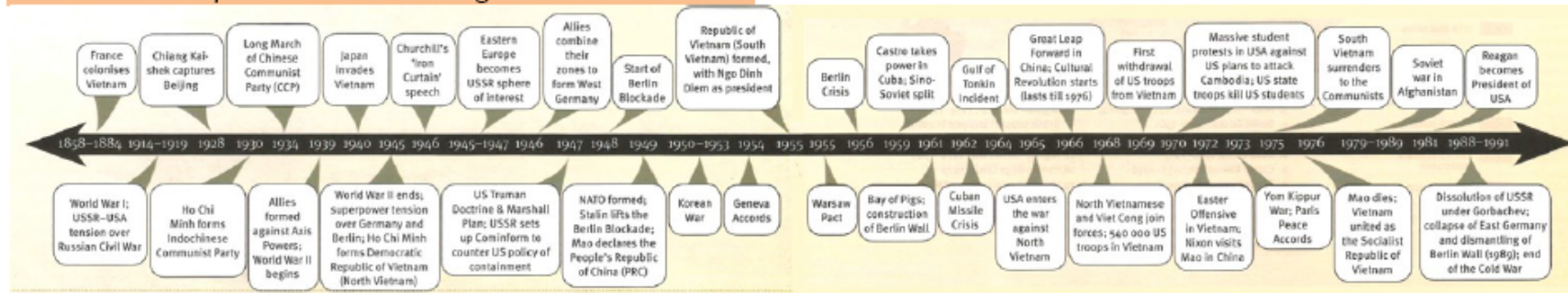
A line scale for a map with a scale of 1:50000



Scale 1:2 500 000, a small scale showing a large area, but with little detail

HISTORY

A timeline of important events during the Cold War



- ✳ Cold War, often dated from 1947-1990 - sustained state of political and military tension between powers of Western world, led by United States and its NATO allies, and Communist world, led by Soviet Union, its satellite states and allies.
- ✳ This 'war' began after the success of their temporary wartime alliance against Nazi Germany, leaving USSR and US as two superpowers with huge economic and political differences.
- ✳ Soviet Union created Eastern Bloc with eastern European countries it occupied, maintaining these as satellite states.
- ✳ US -through Marshall Plan -helped in reconstruction of Western Europe, exerting its ideological influence in the background.

- ✳ In addition, in 1949, United States forged North Atlantic Treaty Organisation (NATO) - military alliance using containment of communism as its main strategy through Truman Doctrine.
- ✳ Soviet bloc formed Warsaw Pact in 1955.
- ✳ Some countries aligned with either of the two powers.
- ✳ Others chose to remain neutral with Non-Aligned Movement.

Background and focus

Polarisation of East (USSR) and West (USA)

- During the Second World War, Russia, America and Britain had put their ideological differences aside in order to win the war against Germany.
- Europe - economically shattered at the end of the war.

HOSPITALITY

Food-borne diseases

Hepatitis A

- ✱ Hepatitis A - contagious liver disease = inflammation of liver due to infection.

Hepatitis A	
Causes/sources	- Caused by hepatitis A virus. Transmission: - Contact with an infected person's stool - Eating food made by an infected person who didn't wash their hands after using the toilet - Drinking untreated water - Sexual activity with infected person
Incubation period	- Hepatitis A incubation period can range from 15 to 45 days - dependent on number of virus particles consumed. - Fewer particles lead to a longer incubation time. - During hepatitis A incubation period - infected person is contagious - remains so for about a week after jaundice appears.
Symptoms	- Tiredness - Upset stomach - Fever - Loss of appetite - Stomach pain

- Diarrhoea
- Dark yellow urine
- Light-coloured stools
- Yellowish skin / eyes (jaundice)

How to prevent the illness and possible transmission

- Always wash your hands with warm, soapy water after using the toilet / changing diapers - before working with food.
- Use bottled water - developing country.
- See your doctor right away if you think you have been in contact with hepatitis A virus.
- Get hepatitis A vaccine.

People at risk

- Travellers and children
- People who have sexual contact with infected people
- Users of certain illegal drugs - injection and non-injection
- Family and caregivers after arrival of international adoptees
- People with chronic (lifelong) liver diseases - hepatitis B / hepatitis C
- People who are treated with clotting-factor concentrates

IT

Appendix B - Databases used

EdwardShop.mdb

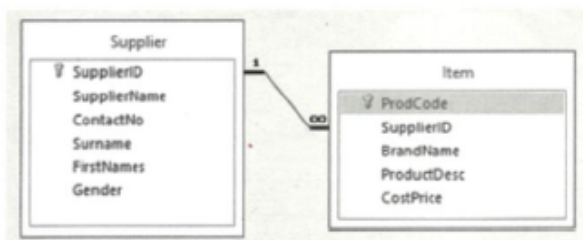
(Item table; Supplier table)

- @ Shop buys items they sell from various suppliers
- @ Information on their suppliers and items they buy saved in EdwardShop.mdb database

The database EdwardShop contains 2 tables:

- @ Supplier table which contains records of suppliers shop order from
- @ Item table which contains records of items they buy from suppliers
- @ Diagram below provides graphical representation of relationship between 2 tables – Supplier and Item

Relationship diagram:



- @ Each supplier supplies 1/many items to store

- @ Specific item only supplied by 1 specific supplier
- @ Therefore one:many relationship exists between Supplier and Item table as shown in relationship diagram

Supplier table: Design View

Field Name	Data Type	
SupplierID	Short Text	Maximum 5 characters
SupplierName	Short Text	Maximum 25 characters
ContactNo	Short Text	Maximum 10 characters
Surname	Short Text	Maximum 15 characters
FirstNames	Short Text	Maximum 25 characters
Gender	Short Text	Maximum 1 character

Supplier table: Example of records and data

SupplierID	SupplierName	ContactNo	Surname	FirstNames	Gender
BU485	Bulgar Inc	021-953-42	MATSOMA	SEWELA LLOYD	M
CAS33	Caddy's	051-208-45	MOGASHOA	PALESA TLODIPJANE	F
CH627	Champion Dealers	011-100-15	MOTHOA	MONGAPI MARLIZE	F
EL302	11Seven	021-912-29	DIRGALE	KATLEGO LETHEBE	M
F1645	Fiddler Family Inc	011-106-28	KGANYAGO	SIBONGILE	F
GO209	Go-Go General Dealers	012-355-92	MBEWE	SIBUSISO METHEMBE	M
JO824	JoMo Central Deliveries	021-412-29	PHALAFALA	NAKEDI PEARL	F
KI980	King Distributors	021-997-53	RAMAPHOKO	MOSIBUDI PETERLENE MURIEL	F
LA303	Lance & Hamilton	051-115-90	SELEMELA	KWENA CAROL	F

LO – Life Orientation

Development of the self in society.

Life skills required to adapt to change

Changes in life are **potentially** stressful, life orientation helps you deal with these changes.

Identify stressors:

- ⊗ Stressors – experiences which are **perceived** as threatening to one's sense of well-being.
- ⊗ You may feel like you don't know how to handle these situations – as a result they can cause stress.



Examples of stressors

Types of stressors:

Physical:

- ⌘ Insufficient or unhealthy food
- ⌘ The need to lose weight but not knowing how to
- ⌘ Disease and or pain
- ⌘ Desire to be more physically active but not having the time
- ⌘ Physical changes, particularly to your reproductive system.

Emotional:

- ⌘ Being pressured into using drugs, cigarettes or alcohol
- ⌘ Caring for a sick person in the family
- ⌘ The death of a family member
- ⌘ Uncertainty about career choices
- ⌘ Sexual, physical, emotional or financial abuse
- ⌘ Personality disorders – **Obsessive Compulsive Disorders**
- ⌘ Shyness - inability to make friends
- ⌘ Feelings of inadequacy
- ⌘ Overwhelmed by school work
- ⌘ Parents getting a divorce
- ⌘ The main breadwinner in your home losing their job.

Social:

- ⌘ Pressure to do something you don't want to do
- ⌘ Boyfriend/girlfriend breaking up with you
- ⌘ Being in a sexual relationship you don't want to be in
- ⌘ Loneliness
- ⌘ Getting bullied at school.

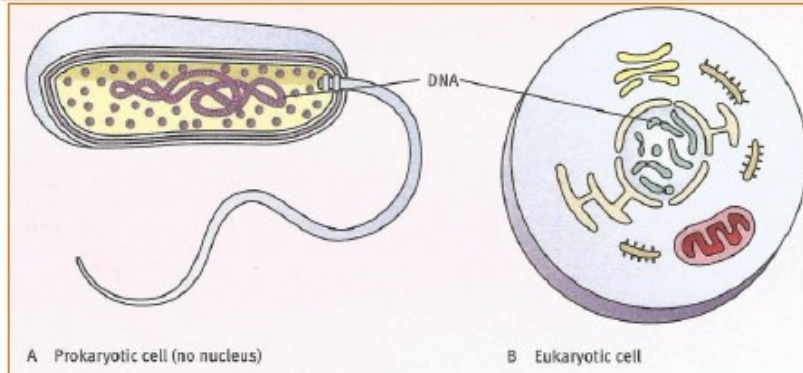
Environmental:

- ⌘ Living in a noisy, polluted environment
- ⌘ Not having any space to yourself at home

LS – Life Sciences

Deoxyribonucleic acid (DNA)

Location of DNA in the cell

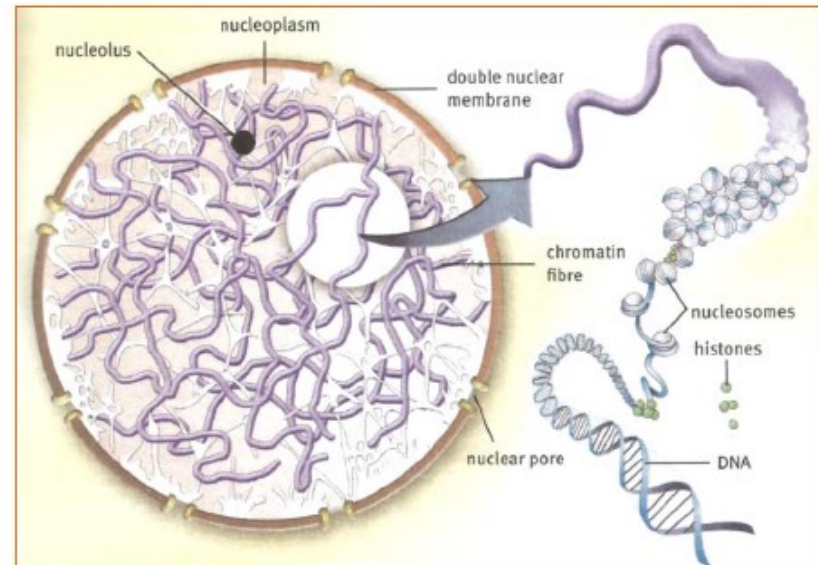


- In prokaryotic organisms that have no nuclei, - bacteria, deoxyribonucleic acid (DNA) is found in cytoplasm of cell.
- Not enclosed by any membrane.
- Eukaryotic organisms (protists, fungi, plants, humans), most cell's DNA is located in nucleus.
- Small amount of DNA outside nucleus, = extra-nuclear DNA.

Chromatin and chromosomes

- ✱ Unwound DNA of a single minute cell, it would be over 2 m long!
- ✱ DNA is packaged into a very tiny space.

- ✱ Tightly wound around proteins to form a dense network of fibres = chromatin.
- ✱ DNA is packaged to protect it, + control which parts of DNA are active at a given time.
- ✱ After code is accessed, it is packaged again.



How is DNA packaged in chromatin?

- ✱ During a certain phase (prophase) of cell cycle, chromatin becomes more condensed, takes form of chromosomes.

PS – Physical Sciences

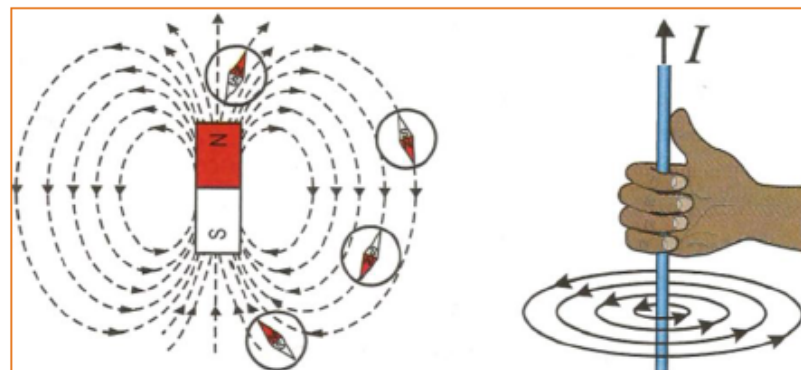
Electrodynamics

Electrical machines

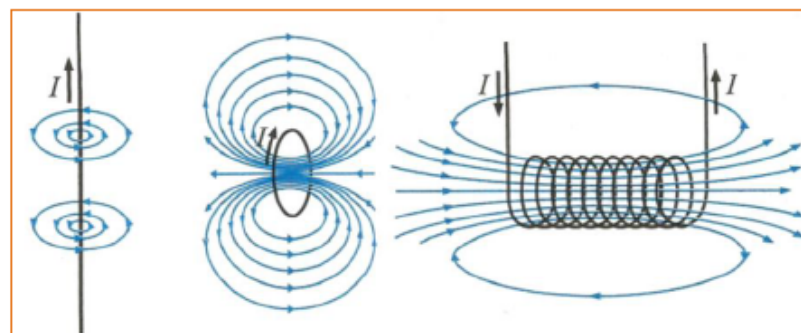
- ◆ Electrical machines have had a tremendous impact on production, overall use of energy.
- ◆ Between 30 to 40 percent of all fossil fuels burnt are used to generate electricity,
- ◆ Two-thirds of electricity is converted by motors into mechanical energy.
- ◆ Electric motor + electric generator = two examples of electric machines.
- ◆ Electric motor, electrical energy is converted into mechanical energy.
- ◆ Mechanical energy is converted into electrical energy in generator.

Revision of magnetism and electromagnetism

- ✱ Magnetic field is any region in space in which a magnet / ferro-magnetic material experiences a force.
- ✱ Magnetic fields point from north to south.
- ✱ Any conductor which carries a current produces a magnetic field.
- ✱ Direction of magnetic field can be found by using right hand rule: hold conductor with right hand, with thumb pointing in direction of current.
- ✱ Fingers wrapped around conductor point in direction of magnetic field.



The magnetic field of a bar magnet. Right hand rule to find direction of magnetic field.



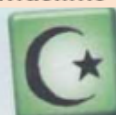
Magnetic fields of different current-carrying conductors.

- ✱ If magnetic flux linked to a conductor changes with time, emf is induced in conductor.

RELIGION

Internal differentiations within religions

- ✱ Every religion has some beliefs that are not negotiable - all religion's followers share.
- ✱ Most religions, interpretations of beliefs may differ from one school of thought to another.
- ✱ Sometimes differences are major - have even led to religious wars - sometimes they are minor.
- ✱ 'School of thought' - strand / branch – example – Buddhism - names of different schools are based on where leaders were schooled.
- ✱ Christianity - different branches - Roman Catholicism, Protestantism and Greek Orthodox.
- ✱ Within Protestantism - other divisions = denominations.

Judaism 	◆ Central idea of a covenant between God + Jewish people. ◆ God protects his chosen people, who in turn, carry out his rules.
Muslims 	◆ Believe that Allah revealed the final truth to Muhammad.
Christians	◆ Believe that Jesus fulfilled the Jewish prophecy of a Messiah - he is a universal saviour.

	
Hindus 	◆ Believe there is only one ultimate reality - many paths to reach it. ◆ Hinduism is underpinned by the belief in reincarnation
Confucianism 	◆ Teaches – universe works according to a cosmic order and humans should live according to cosmic order in a properly organised society
Taoism 	◆ Proposes – humans live their lives effortlessly in harmony with the Tao way of the universe.
Buddhism 	◆ Does not teach about a god/gods – encourages a way of living to end suffering caused by unfulfilled human desires.
African Traditional Religion 	◆ Ancestors - Creator's messengers and caretakers for the physical world. ◆ They look after the welfare of the living, mainly through elderly, who in turn teach youth orally through the rituals.

TOURISM

Global events of International Significance

What is a global event?

- 🌐 An organized event involving people from countries all around the world.
- 🌐 Large events (Olympic Games) or smaller events (Tourism Indaba)

Types of Global Events:

Sporting Events

Sports tourism is a multi-billion rand industry which strongly impacts the global economy but more specifically the economy of the hosting country. Spectators are responsible for most of the economic impact. Other contributors – **sponsors** and merchandisers selling **replica** shirts and other **paraphernalia** related to the event.

The three largest sporting events in the world are:

1. The Olympic Games
2. FIFA Soccer World Cup
3. Tour de France.



Tour de France



FIFA World Cup



Olympic Games

The Federation International Football Association (FIFA):

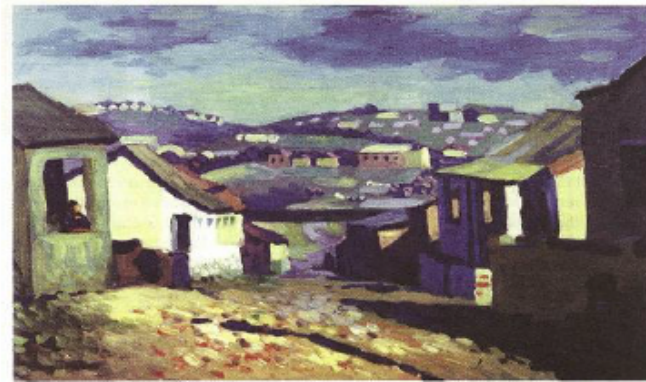
- 🎯 Significant impact on both the global economy and tourism.
- 🎯 FIFA – global governing body of soccer. (208 country members).
- 🎯 Event is held in a different country every four years.
- 🎯 Nine cities in South-Africa co-hosted in 2010.
- 🎯 32 teams with an average of 50 people per team.

VA – Visual Arts

George Pemba (1912 – 2001)

- Born in Korsten village, PE – Eastern Cape
- After completing secondary school - obtained Teachers diploma at Loveday Training College in Eastern Cape
- He Worked at the Lovedale printing press/was a teacher in King Williams Town/later worked at Governmental administration department in Port Elizabeth
- As a child he was encouraged to paint and draw by family and teachers
- Never got formal training – only short time interaction with a variety of artists and lectures
- In 1931, Ethel Smythe - taught art at the University College of Fort Hare gave Pemba and introduction to drawing
- In 1936 he was able to study under Professor Austin Winter Moore at Rhodes University for 5 months
- He also painted with the artist Dorothy Kay and attend art classes in Muarice van Esche's studio in Cape Town
- During this time he met Gerard Sekoto and Koenakeefe Mohl = both encouraged him to become full time artist and pay more attention to immediate surroundings as a subject matter
- He resigned from his work in 1952- become a professional artist

- He struggled because of the Apartheids system – opportunities to exhibit and interest of buyers was a problem
- He and his wife ran a spaza shop to make a living
- His art made the circumstances that the black people had to endure visible – public to view



Influence:

- Pemba's work similar to Realism
- Depicted the plight of the poor in townships in naturalistic manner
- Admired Millet/The Gleaners
- Painting style – Impressionism
- Strong light forces and fleeting moments of daily life
- Influence of Expressionism is visible through his depiction of the effects of urbanization on people/use