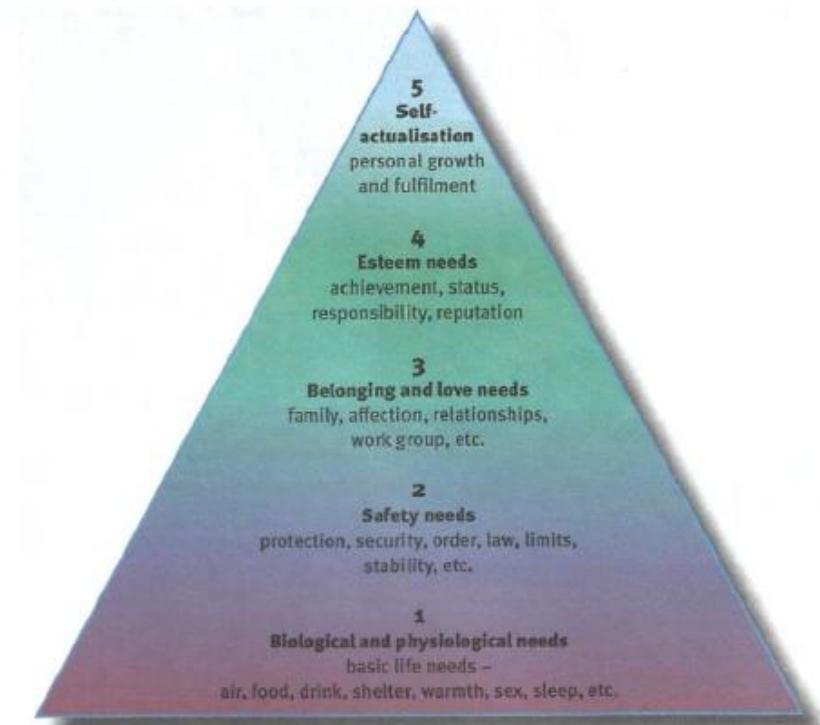


Business

The market: customers and consumers

Consumers and customers

- ◆ No business can exist without customers from amongst consumers of market environment.
- ◆ Customers of business = 'the market' for that business.
- ◆ Business must know who its customers are.
- ◆ Understand why they buy the goods + services that business produces.
- ◆ People pay for goods and services in order to satisfy needs and wants.
- ◆ Maslow classified these needs in a hierarchy that looks like a pyramid.
- ◆ In this hierarchy, consumer will always try to satisfy their basic needs first -starting at bottom of pyramid.



Maslow's hierarchy of needs (original five-stage model).

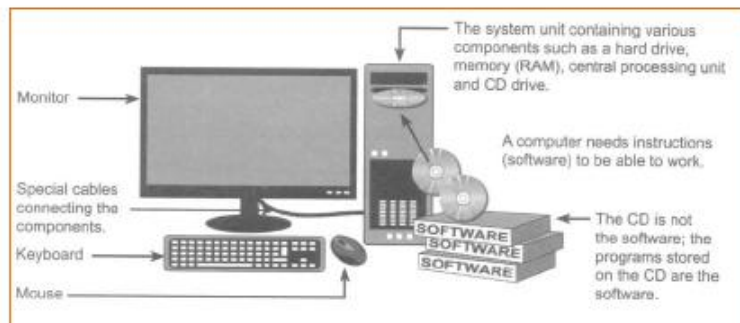
- ◆ We may often think that some consumers show no logic in choices.
- ◆ Always a reason why consumers spend money in the way they do.
- ◆ Decisions (consumer behaviour) are influenced by cultural, social, personal + psychological factors.

CAT

Introduction to computers
Hardware versus software

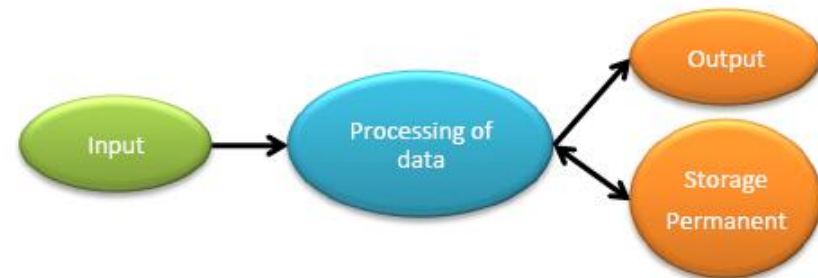
Difference between two critical components of computer system, hardware, software:

Hardware	Software
- Physical parts of computer can touch, see as hardware. - Examples - mouse, screen, keyboard, printer, different components inside computer.	- Get computer to do something, need to give it very specific instructions. - Instructions = programs /or software.



How a computer works

- Computers take input (usually from keyboard / mouse), something to it (process it) produce some form of output (usually on screen / on printer).
- Often input / output stored use at later stage.



Computers process data into information.

- Data unprocessed items.
 - Include text, numbers, images, audio, video.
 - Information result of processing of data, should be useful, meaningful.
-
- Process of input, processing, output, storage = information processing cycle.
 - Computers linked to other computers some way - can communicate with one another.
 - Communication - important element in cycle.

Consumer

Restaurant etiquette

Reservations and restaurant staff

- Important part of eating out, need to know how to handle them properly.
- Reservations are like other appointments, make reservations stick to it.
- Call ahead if going to be more than 15 minutes late, cancel as far in advance as possible if plans change.
- Restaurants take credit card numbers to hold reservations and charge no-show fee.
- Waiters have difficult job, deserve respect and courtesy.
- Be polite and pleasing to waiter; thank him every time he brings something to table.
- Leaving restaurant leave required tip, or more if service was good thank waiter.

Handling tableware

- Can be very intimidating to sit down at formal dinner without knowing how to handle tableware.
- Simple place setting found in restaurants offer simple service.

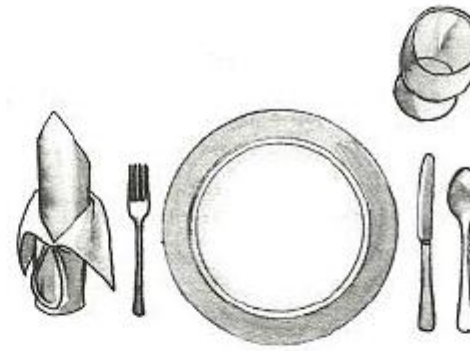


Figure 4.4 A simple place setting

- Place setting quite simple, however formal meals have more complicated place settings.



Design

1980s -1990s: exploring digital design; transforming typography as integral part of conceptual design-embedded type to become an integrated design element

- One designer who was inspired by digital possibilities was April Greiman.
- From 1980s Greiman used digital images and typography in new, and shocking ways to explore possibilities of digital design.
- Her posters and magazine designs challenged what good typography should have been.
- In posters - Snow White and the Seven Pixels she used a digital style typeface - not completely legible - merged it with images and areas of colour.
- Move toward using typefaces that are a conceptual part of a design became more prominent from 1980s and 1990s.
- Designers used typefaces and lettering as a key component of design - not merely as a method to show the message.
- It was the way in which they used typefaces and letterforms that became the message -transforming typography into an integrated design element - not merely an added block of text.
- Designers - Neville Brody and David Carson's work represent this move in design.



Poster "Snow White + the Seven Pixels" – designed by April Greiman in 1986. Design reflects her digital inspiration



In "Your Turn, My Turn" Greiman uses type that is slightly blurred, which seems to be out of print registration. This idea is ironic, as digital prints are not produced with



During the 80s and 90s designers - David Carson started exploring the boundaries of typography. Focus on clean legible type was replaced with a sense of experimentation.

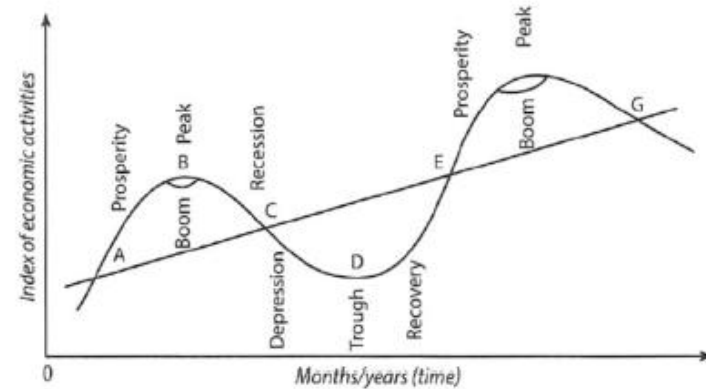
Economics

Composition

- Path of any economic activity is analysed over a period of time, wave-like pattern can clearly be observed.
- Example - analyse unemployment figures - increase for a while - then decrease.
- This pattern is continuously repeated.

a. Cyclical patterns

- Wave-like pattern = cyclical pattern.
- Cycle begins at a low point, moves upwards to a high point - curves downwards until a low point is reached again.
- Upward and downward periods are divided into 4 phases:**
 - Prosperity phase (ending in a boom)
 - Recession phase
 - Depression phase
 - Recovery phase
- Figure shows a "smoothened" cycle.
- Nice and smooth and regular.
- In practice, business cycles may be highly irregular.



Pattern and phases of business cycles

- Vertical axis of graph shows economic activities (indicators) - employment, production, income + spending together in form of an index number.
- Index number indicates level of a variable in relation to its value at another (earlier) time.
- Horizontal axis shows time - example, months and/or quarters and/or years.
- On curve:**
 - Segment AB indicates prosperity phase,
 - Segment BC indicates recession phase,
 - Segment CD indicates depression phase,
 - Segment DE indicates recovery phase.
- Upper turning point of business cycle = peak.
- Short period around peak = boom.

Geography

Heating of the atmosphere

- atmosphere is warmed up by Earth – not by sun
- atmosphere keeps Earth warm – doesn't allow heat to escape
- gases = carbon dioxide/water vapour form invisible heat bubble around Earth = greenhouse effect

How is the atmosphere heated?

- Sun's energy = solar radiation
- Travels through atmosphere without heating atmosphere up
- Solar radiation consists of short/long electromagnetic waves
- Short waves = ultra – violet light (UV)/visible light
- Long waves = infrared heat
- Gases in atmosphere – transparent to short – wave light
- Can trap/absorb long – wave infrared heat
- Exception is ozone – absorbs UV light
- Short – wave light = absorbed by Earth
- Earth heats up/radiates/sends back long – wave infrared heat into atmosphere
- Infrared heat – absorbed by gases in atmosphere
- Sun warms Earth – Earth warms atmosphere
- Energy absorbed by atmosphere drives the weather
- Weather is solar – powered

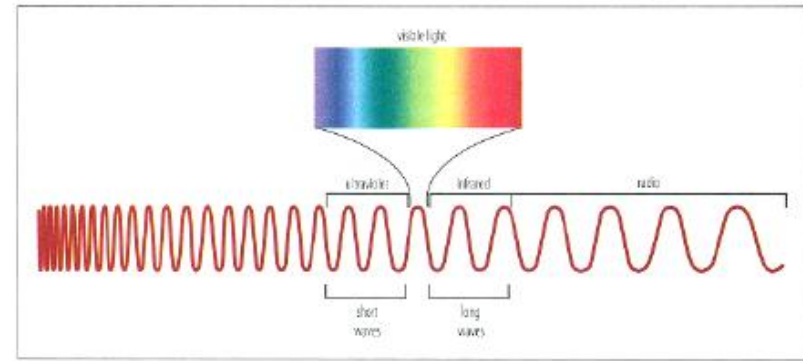


Figure 1.2.1 The electromagnetic spectrum of the Sun. Most of the Sun's energy is concentrated in visible light

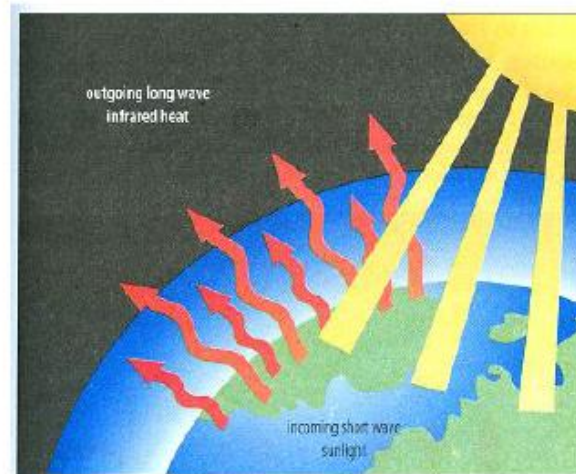


Figure 1.2.2 The Sun heats up the Earth, and the Earth heats up the atmosphere

History

The world around 1600

What was the world like around 1600?

- Around 1600, great changes were starting to happen in the world.
- 15th and 16th centuries, Europe was not very powerful / influential beyond its borders.
- 1600's, Europe started to emerge as a dominant force in the world.
- Same time, great empires of Asia + Africa were losing power and influence.
- These empires - Ming, Mughal + African empires of Ghana, Mali + Songhai - were thriving centres of trade, scientific discovery, arts + culture.
- By 1600, financial + military power had shifted to Europe.



Source A: Mosque in Timbuktu, West Africa, completed in 1327. It is made almost entirely of earth and organic materials - fibre, straw and wood, and has prayer space for 2 000 people. It is still in use today.



Source B: Il Duomo, Catholic cathedral in Florence, Italy, built 1296-1462. City of Florence wanted to show off its grandeur with cathedral. When it was built, it was the largest cathedral in Europe, with room for 30 000 people.



Source C: Forbidden City in Beijing, China, built 1406-1420, a sacred palace where emperors lived. World's largest palace complex and has 9 999 rooms.

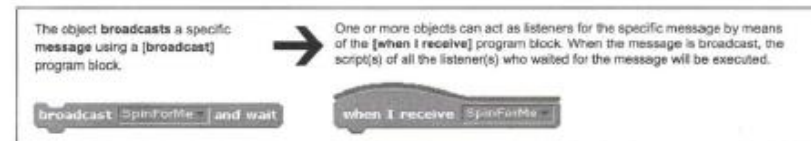
IT

Interaction between sprites

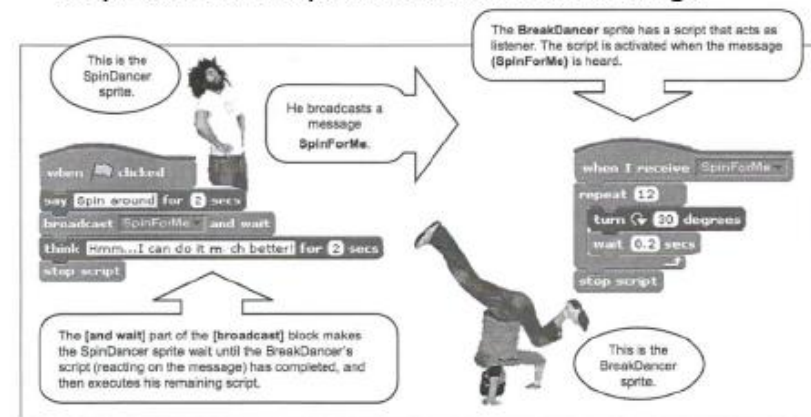
- ✱ Sprite is only capable of 'controlling' itself, - working with its own data.
- ✱ Program blocks - [show] and [hide] only make sprite itself appear and disappear.
- ✱ When a sprite does a calculation, he uses only the variables available in his own Variables instruction group.
- ✱ Learn how to let sprites communicate with one another.
- ✱ **Two types of communication between sprites:**
 - Sprite can broadcast a message to other sprites to let them know it is their 'turn' to
 - Different sprites can work with same variables - they can share data.

Broadcasting and receiving messages

- Scratch, scripts can be activated when an event takes place (example, when flag is clicked / spacebar is pressed).
- User is responsible for these events.
- Object (sprite / even stage) can activate scripts while program is running.
- Done as follows:



- Example of one sprite that broadcasts a message, script of another sprite that reacts on message:



- Blocks related to broadcasting and receiving messages are found in Control instruction group.
- You can choose name of message you want to broadcast yourself.
- Click on down-arrow in [broadcast] block.
- Choose new... and enter a descriptive name for message you want to broadcast.
- One / more scripts can react to same message.

LO – Life Orientation

Physical fitness

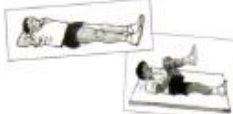
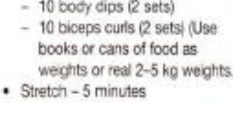
A balance fitness programme

4 aspects make up balanced fitness programme:

- ★ Cardio fitness
- ★ Muscular strength
- ★ Muscular endurance
- ★ Flexibility

Planning your own exercise programme

Example of exercise programme that combines the 4 aspects of well-balanced fitness programme:

MONDAY	TUESDAY	WEDNESDAY
• Stretch – 5 minutes • Jog – 20 minutes • Abdominal strength – 10 sit-ups (2 sets with a 30-second break between sets) • Stretch – 5 minutes 	• Stretch – 5 minutes • Jog – 20 minutes: jog 5 minutes, then sprint 1 minute • Leg strength: 10 lunges (2 sets – 30-second break between sets) • 10 side leg raises (2 sets – 30-second break between sets) • Step-ups for 1 minute (with 30-second break – repeat for 4 minutes). (Find some steps or use a sturdy bench or box.) • Stretch – 5 minutes 	• Stretch – 5 minutes • Boxercise – 10 minutes (Put on your favourite music and punch and do some boxing kicks.) • Dancing – 10 minutes (Put on your favourite music and dance till you drop.) • Abdominal strength – 10 crunches (2 sets with a 30-second break between sets) 
THURSDAY • Stretch – 5 minutes • Bike – 20 minutes (Do this in a park or find a biking trail, if possible.) • Upper body strength: – 10 bent-knee push-ups (2 sets) – 10 body dips (2 sets) – 10 biceps curls (2 sets) (Use books or cans of food as weights or real 2–5 kg weights.) • Stretch – 5 minutes 	FRIDAY • Stretch – 5 minutes • Hike – 45 minutes to 1 hour (Drink water and take breaks when you have to. Find a good route and get some friends to go with you.) • Stretch – 5 minutes 	 WEEKEND You deserve to take a break but continue to do fun activities!

Safety issues relating to fitness exercise

Follow these guidelines when exercising to prevent injury, damage to your body:

When not to exercise:

- ★ If you have fever (high temperature) due to 'flu / other illness

Where to exercise:

- ★ Away from traffic, obstacles blocking your movements / can cause you to stumble, fall

What to drink:

- ★ Have water nearby especially in hot weather

What to wear:

- ★ Clothing, footwear that allows free movement, not too loose / tight
- ★ Warm up to prevent injury, increase enjoyment of strenuous exercise session
- ★ Jog easily for 5 minutes
- ★ Stretch upper leg muscles, front, back (quadriceps, hamstrings), lower leg muscles (calf, Achilles tendon), arm muscles, front, back (biceps, triceps, chest (pectoral muscles)

LS – Life Sciences

Joints

- ✱ Joints are found where two bones make contact with one another.
- ✱ Without joints, we would not be able to move.
- ✱ Our skeleton has over 100 different joints.

Classification of joints

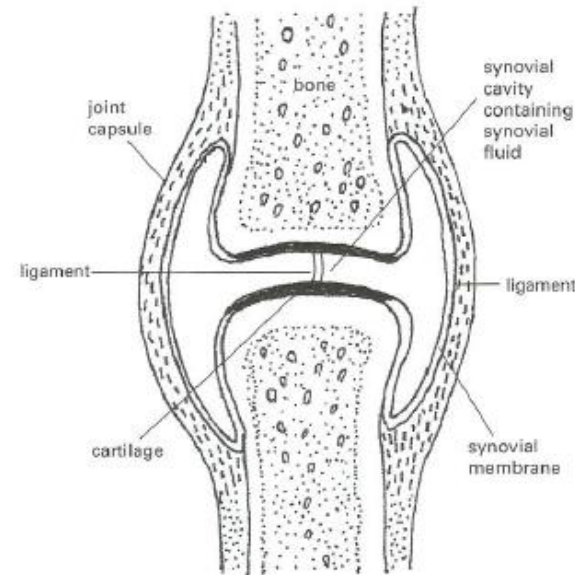
- ✱ Joints - classified according to amount of movement they allow.
- ✱ **Three kinds of joints:**
 - Fibrous joints,
 - Cartilaginous joints
 - Synovial joints



Fibrous joints – immovable -
example joints between bones
of the skull.
Joints = sutures.



Cartilaginous joints are slightly movable, - example joints, / discs, between the vertebrae.



Synovial joints allow free movement, for example the knee and elbow joints.

Mechanical Technology

Joining methods

What are semi-permanent joining applications?

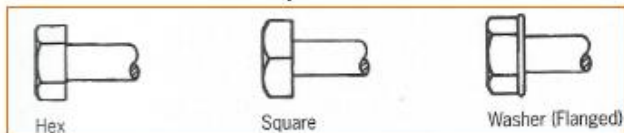
- Semi-permanent joining applications - methods used to join different objects together, securely not necessarily permanently.
- Numerous ways of joining engineering materials together, deal with only following: bolts, studs, nuts, locking devices, rivets, split pins, keys.

Bolts and machine screws

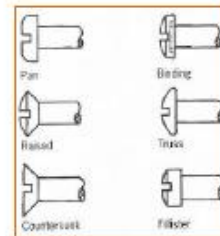
- Bolt - term for threaded fastener, with head, designed to be used with nut.
- Several hundred different types of bolts used in engineering applications.

Head styles

- ◆ Common head styles for bolts:



- ◆ Machine screws normally characterised by slotted head, may have other drive configurations.
- ◆ Few given below:



Different bolt and machine screw heads

Drive configurations

- ◆ Bolt / screw's drive configuration determine what type of tool used to fasten it.
- ◆ Each drive type designed for specific purpose, has special tool to drive it.
- ◆ Some more unusual ones, - tri-wing®, used for tamper-proof applications - difficult to remove without correct tool.

Here are a few examples of different drive configurations:



Different drive configurations

PS – Physical Sciences

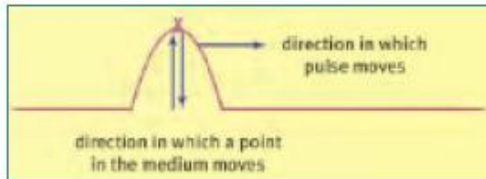
Transverse pulses

Transverse pulses

- Vibrations are important, - produce waves.
- Properties of a wave depend on vibration that makes wave.

Pulses

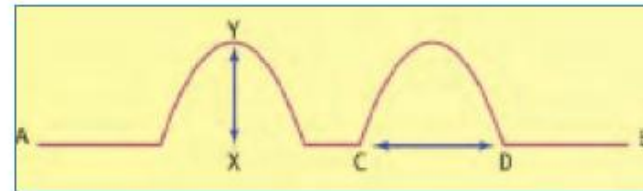
- Medium - solid, liquid / gas which a wave can move.
- Water, air / length of rubber tubing can each be a medium for a wave.
- Slinky spring is also a medium.
- Pulse is any single disturbance that moves along a medium.
- Transverse pulse - disturbance that moves at right angles to direction which pulse moves.



Pulse passing through a medium

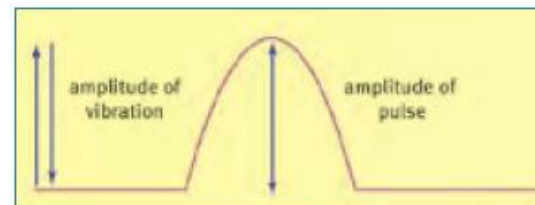
- Rest position is position of spring when there is no pulse / disturbance passing along it.

- Amplitude - maximum distance that a point in medium moves from its rest position when pulse passes through.
- Figure - straight line AB is rest position, distance XY is amplitude of pulse.
- Distance CD is pulse length.



The amplitude of a pulse and the pulse length

- Loose end of spring is moved with a larger amplitude; it forms a pulse that has a larger amplitude.
- Amplitude of pulse is same as amplitude of vibration that caused it.



Sketch of pulse showing amplitude of vibration and amplitude of pulse

Tourism

Introduction to tourism

What is tourism?

- ◆ Tourism - study of activities, services, + industries that provide a travel experience to groups / individuals.
- ◆ Includes behaviour of tourists + their reasons for travelling, businesses which serve tourists, - economic, social + environmental impacts of tourism.
- ◆ Tourism is one of the fastest growing industries in the world.
- ◆ **Made up of different sectors:**
 - Transport sector
 - Hospitality sector
 - Travel organising and support services
 - Attraction sector
- ◆ These sectors work together to meet needs + wants of tourists.
- ◆ Tourism = movement of people from where they live to tourist destination.
- ◆ Involves how they get there (transport), facilities + attractions available at destination, + return home again.
- ◆ Movement of people = tourism system.
- ◆ Illustrated as follows:



Tourism system

The difference between inbound and outbound tourism

- ✳ When tourists travel into a country from another country, = **inbound tourism**.
- ✳ Example, soccer spectator from Australia comes to SA to watch World Cup Soccer matches.
- ✳ When tourists travel out of home country to visit another country, = **outbound tourism**.
- ✳ Example, - South African tourist flies to Brazil for a holiday.