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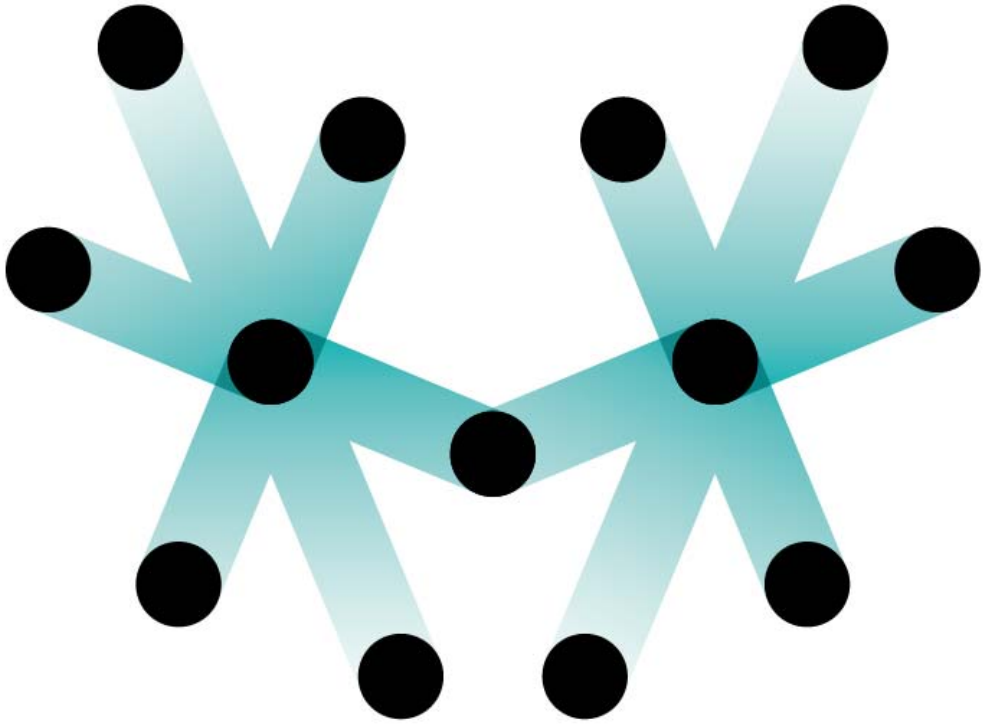
- E X P L A I N -

Map your knowledge



Handbook for Students

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1 HOW TO MANAGE YOUR TIME

1.1 Discover - Organising learning time and space

How many of us have been in the situation when we said that we couldn't finish an activity because we didn't have enough time?

Time is so valuable and yet most of us either do not use it effectively or do not appreciate it. Time is an inevitable flow of minutes and seconds. A day has the same number of hours for everyone, yet some people achieve more than others. This is because they know how to organise their time well.

Time Management refers to the way in which a person controls and plans their time for specific activities in order to increase efficiency, effectiveness and productivity.

There are electronic applications (computer or mobile) or methods on paper that helps us to organise our time (calendar, notes etc.), but they do not help us with time perception. When you do something you like, time passes quickly, and when you do something you don't like, time passes slowly. So the perception of time passing is created in our mind.

It is known that everything created by us, can be organised by us. For this reason, it is our responsibility to organise our time efficiently and thoroughly.

Why we should organise our time:

- The value of time is measured by the value of the work done in that time. It helps us prioritise activities.
- Time Management helps us be more effective by understanding amount of work we need to do in a specific period of time. Time management will also make us be more focused and do quality work e.g. if we know we have a short period for an activity, then we need to focus doing it right the first time.
- Time cannot be saved for later. We must use it now!
- Time is limited and once it's gone, we cannot recover it.
- Organising time makes us focus on what we do and how we do it.
- Time management makes us do things we don't like but have to do regardless.
- Time management helps us to be disciplined and motivated.

Time management does not only refer to assigning enough time for certain activities, but also to choosing the activities that are most vital and valuable to us. In other words, **time management means organising your life.**

One day would not be not enough time to do absolutely everything we want or need to do, so it is up to us to choose the activities that are vital and assign them sufficient time in order to finish them, but also to be productive in the meantime (and not lose time).

At different stages of life, activities have different degrees of importance with different priorities e.g. when we are in school, we allocate a lot of time to learning, but we also want a lot of time for socialising with friends and recreational activities.

When organising your time you should alternate activities with breaks avoiding procrastination and wasting time.

Breaks are useful:

- To help you relax before starting another activity.
- To increase productivity, because when the brain is relaxed, your memory and thinking are more efficient.
- To increase the power of learning. Breaks increase your creativity and new ideas often come during these times.
- To increase concentration and motivation. Breaks help avoid boredom.
- To reduce one's stress.
- To improve health and immune system.
- To increase energy levels, especially when your breaks include physical exercise.
- To improve self-esteem.
- To improve sleep patterns.

Reasons for procrastination and wasting time:

- Lack of resources.
- Lack of motivation.
- Lack of attention and focus that can lead you to being easily distracted.
- Low self-esteem.
- Being stressed e.g. relationships with colleagues or family members etc.
- Emotional state e.g. bored, agitated, anxious, worried, overwhelmed etc.

By identifying one or more of these reasons, you can help improve the effectiveness of your time management.

The activities should be coupled with general objectives or tasks to help you to be mobilised in their achievement.

Objectives	Activities
Hygiene and health	Eat at regular hours Take a bath Take physical exercise
To get better grades	Doing 10 extra exercises every day Repeat theory every weekend Ask teacher for guidance Participate in school competitions

1.2 Learn

1.2.1 To evaluate the ability to organise your time

To assess your ability to time manage you must begin by creating a plan of activities (conversations, creativity, actions, and tasks) for one week. For each activity you must note how much time you need to finish it and how much time you lose on unproductive activities. The goal is to find out how long it takes you to get results and to determine the toughest activities that require more concentration or need extra help. You should be honest when filling in all activities and tasks, including procrastination.

You can use a *comparative table* (below) to write proposed and fulfilled activities, divided into time slots for each day of the week. In the table, you can complete three rows for the morning, the afternoon and the evening. But the number of rows can be extended for other periods of time or for shorter periods of one hour etc. Individual time periods depend on each person and must be adjusted according to the needs of the individual.

Example of a comparative table for assessing activities from the point of view of duration and productivity:

	Time	Proposed Activity	Activity Achieved
Day 1	7-8am	Breakfast and sport (60 min)	Breakfast (30 min) Sport (30 min)
		Effectively 60 min for activity	0 min lost
	8-10am	Nature Science Project (120 min)	Internet search re project subject (40 min) Facebook socialising (25 min) Talking on the phone with a friend about project (15 min) Writing the project (100 min) 180 min. = 40 + 25 + 15 + 100
		Effectively 140 min for activity	60 min lost = 20 min extra time work + 40 min socialising

You can observe that after each row activity:

- 'The Proposed Activity' column shows the total time spend for an activity;

- The 'Activity Achieved' column contains the time lost, meaning the difference between the amount of time proposed for an activity and the sum of activities effectively carried out including procrastination.

Comparative table helps us to:

- Realise how we spend our time;
- Calculate necessary time for a specific activity;
- How effective we are in achieving proposed activities.

1.2.2 To prioritise activities

To effectively **prioritise daily activities**, examine your table and look for the following:

A. What are the **most important** (e.g. review of a topic/ project) **and urgent / necessary activities** (learning one subject, attending a practical laboratory, completing of homework etc.) throughout the week. The activities can be divided into smaller tasks and organised in descending order of importance and urgency as follows:
   a. Important and urgent.
   b. Important and NOT urgent.
   c. NOT important and urgent.
   d. NOT important and NOT urgent.
   e.

This is known as the 'Eisenhower Principle', named after the US President who organised his workload using this system.

Activities must be prioritized by importance and not by urgency, as shown in the following figure.

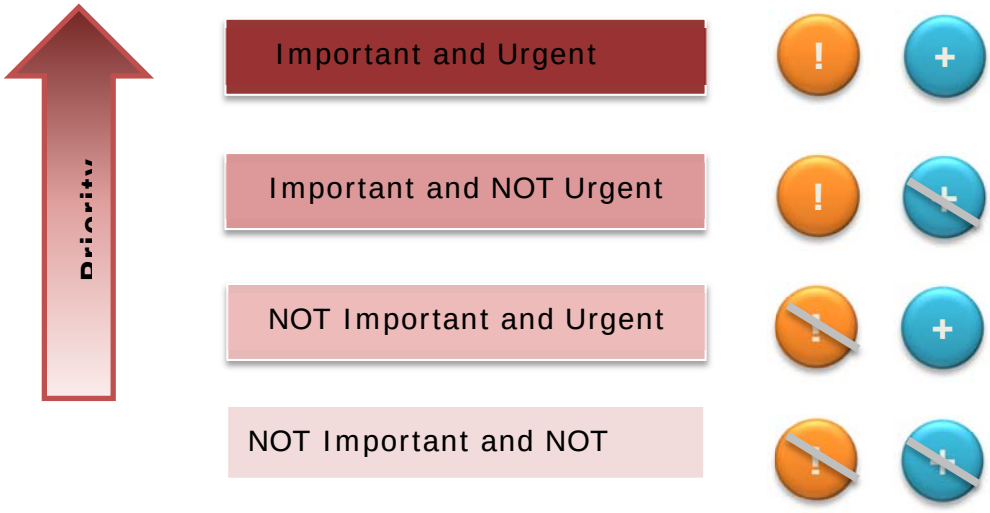
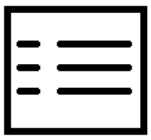
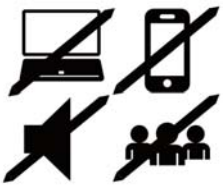


Figure. Eisenhower Principle for activities prioritization

B. **How much time is required to complete an activity?** You should calculate the average time e.g. how long it takes to write an essay of one page about a subject that you know nothing about or need to ask a tutor for help with. There is the risk that you may calculate an unrealistic time for a given activity. The time required for completion of an activity depends on age, experience and concentration. When allocating time for activities in the future you can use the time it took to complete activities from the past.

C. **What activities were NOT planned, that you did instead of planned ones** e.g. on phone with friends, surfing social sites, watching TV etc.? Establish what you need to do to stop the time wasting and allow you achieve the proposed plan. Some examples are:
   - Switch off the phone when you need to learn.
   - Stay offline to avoid social sites.
   - Go to the library or another quiet place without external stimuli.
   - Avoid looking to other things that are not related to the actual activity.
   - Avoid daydreaming.
   - Avoid delaying your planned activity until the last minute.
   - Tell yourself that organising a new activity is enjoyable and exciting.

Steps to prioritise the daily activities are:

1.	Make a list with all your daily activities and divide into smaller tasks	Define what are the most important and urgent/necessary activities throughout the week.	
2.	Organise tasks based on importance and urgency	a. Important and urgent. b. Important and NOT urgent. c. NOT important and urgent. d. NOT important and NOT urgent	
3.	Calculate how much time is required to complete an activity	Using your own experience in similar tasks or search for help from a tutor.	
4.	Avoid procrastination	Stay focused on your activity and: a. switch off the phone; b. stay offline on social sites; c. choose a quiet place; d. avoid external stimuli.	

1.2.3 To evaluate the most productive time of the day

The **circadian rhythm** (biological clock) is a set of biological and mental processes established in 24 hours by a living thing following the light and dark periods of a day. According to circadian rhythm, some people are productive in the morning, others at the midday or in the evening. To determine the times of the day when you are the most productive, you should answer to the following questions:

a. What is the time of the day when you feel the most energetic and focused? (You may find that there are several periods in one day.)
b. When you don't have other compulsory activities, for example school, sports practice etc.?

There is a **test** by which can determine (using a questionnaire with 19 questions) your circadian rhythm, so the time of the day (morning, afternoon, evening) when you are the most productive. This test can be found in Section 1.3 or online at http://www.cet-hosting.com/limesurvey/index.php.

This test can be used as an aid to determine your highest-energy periods during the day, but cannot be used as the sole measure of intellectual productivity as it can be influenced by several factors (age, gender, stress etc.).

1.2.4 Techniques for time slicing

After creating the list of activities and prioritising them, you should allocate time for breaks in between activities.

There are a couple of techniques that help you to divide the time in periods of activities and breaks:

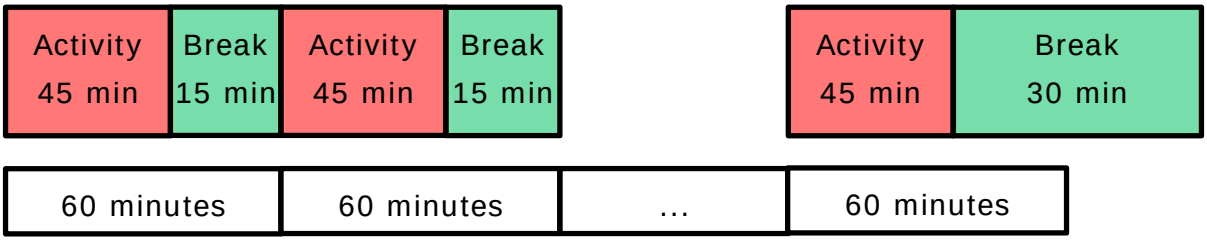
• **Pomodoro technique** - the activities will be executed in 25 minutes, alternating with breaks of 5 minutes. After four pairs of activity-break or at the end of one activity that takes longer, the break will be about 15-30 minutes. You can use a timer or a smartphone application (iPhone or Android) for time measurement.

Activity 25 min	Break 5 min	Activity 25 min	Break 5 min	Activity 25 min	Break 5 min	Activity 25 min	Break 15-30 min
30 minutes		30 minutes		30 minutes		30 minutes	30 minutes

- **Periods of 90 -20 minutes** - alternating periods of 90 minutes for activity with 20 minutes for relaxation.

Activity 90 min	Break 20 min	Activity 90 min	Break 20 min	Activity 90 min	Break 20 min

- **Periods of 45 -15 minutes** - alternate intense activity for 45 minutes with a break for 10 minutes. This method is used to allocate time for classes and breaks in the institutionalised educational programs in several countries, for example Finland and France. After 5-6 pairs of activity-break, it is necessary to take a longer break around 30 minutes. In other environments, there are periods of 50-10 minutes (educational system in Romania).



Each person may choose a certain duration for an activity, depending on his age. A younger person may choose to focus for a shorter period of time or depending on the type of activity i.e. learning requires more time and concentration than information searching, or writing a project requires less time than synthesising a text.

1.2.5 How to manage time

Time management techniques can help you plan, organise and prioritise activities every day or for longer periods (week, month or year). These methods are not always effective, because they are based on universal time (clock time), rather than each person's individual perception about time combined with the activities they have to achieve. Time management must be done every day.

To better **organise your time and to accomplish activities** in one particular day, you can apply the following steps:

1. **Workspace** should be in **order** and without **disturbing factors,** (telephone, email, Internet, TV, friends, social networks, computer games or game console). This will aid concentration. It has been proven that if we get distracted by another activity, it takes at least 10 minutes to return to the initial activity.
2. Make a **list of all activities** for that day. For each activity that has been determined by their **importance and urgency**, set a **time frame** (start - end) in which you implement it. If the activity extends over a longer period of time, then divide it into sub-activities. For each activity identify the **venue** (e.g. office, reading room).
3. **Prioritise activities** using the Eisenhower Principle (1.2.2 chapter) and **organise** them into an agenda **list**. The activities should be put in the agenda so that the most difficult must be scheduled when you are the most productive (corresponding to circadian rhythm). If the two activities have the same importance and urgent levels, then you can give them degrees e.g. more important, less important. Activities involving creativity must be arranged at times when you have less energy. Activities not urgent and not important should be scheduled during periods of lowest energy, for example reply to emails, online chat or phone, read the news or internet information searching, conversations with others etc.
4. **Plan relaxing breaks** between activities or do something which distracts your attention from your current activity. Some possible activities are:
    - Before each planned activity, schedule a few minutes to **assess expected results**. After each activity you should plan several minutes to **evaluate obtained results**.
    - Get up from the desk and do some physical exercise.
    - Play some sport.
    - Go up and down some stairs.
    - Take a small meal or a healthy snack.
    - Keep hydrated. Water is best.
5. **Periodically reorganise the list of activities**. The importance and urgency of activities may change during the day.

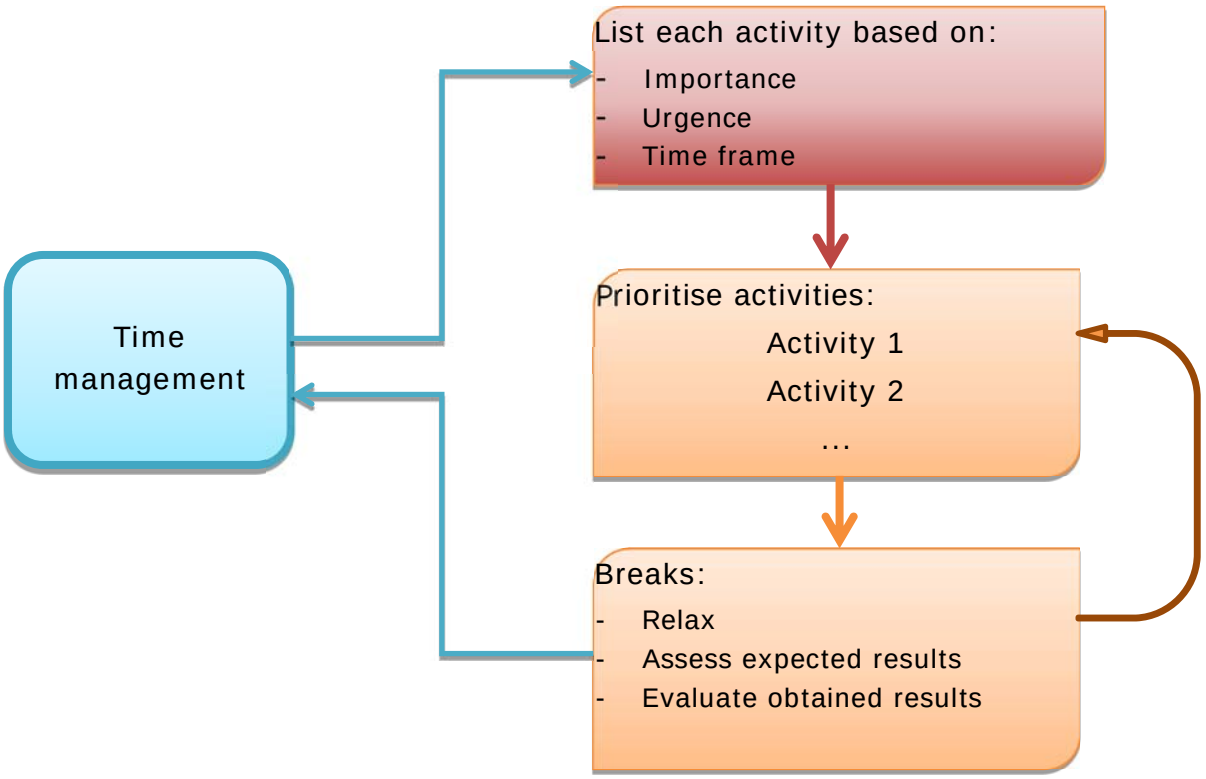
6. **Search for help** from friends, teacher, internet, documents etc. when you are in trouble.
7. **Rest** for at least 7-8 hours every night to keep your energy and productivity levels high.

Here are some **tips to avoid distractions** which will help you to focus only on the current activity:

- Establish a time frame for responding to emails.
- Set the receiving email sound on mute.
- Set the status "Busy" on chat applications.
- Switch the phone off or set lists of users for which it is urgent to answer and ignore calls until you take a break.
- Read the news at the beginning or at the end of the day.
- Do not connect on social networks during planned activities.
- Close the door and put the sign "Do not disturb".
- Use headphones to block out your roommates.
- Reorganise materials regularly in folders and books.

Workspace should be convenient and practical. Here are some **tips to improve working conditions**:

- The office chair should have the right height.
- Position of desk should be close to a natural source of light. If this is not possible, ensure the desk is well lit.
- The walls should be decorated with images of nature, which will increase creativity.
- You should listen to music to increase your concentration and to block out ambient noise. It is believed that listening to instrumental music or "white noise" (calming sounds) has a calming effect.


List each activity based on:
- Importance
- Urgence
- Time frame
Time management
Prioritise activities:
Activity 1
Activity 2
...
Breaks:
- Relax
- Assess expected results
- Evaluate obtained results

1.3 Practice

1.3.1 Organise your time for one week

Based on the example completed in 1.2.1, for each day of the week, plan activities with the time frame for each. It is important to be honest in order to properly calculate the average time for each type of activity and to find when and why you lose time.

	Time frame	Proposed activity	Fulfilled activity
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Day 6			

Day 7			

Using the one week activities list you should:

- calculate the real time needed for a special activity
- identify the most common delaying activities
- identify the most productive time of the day
- search for the most helpful resources.

1.3.2 Evaluate your time management capacity

1. Assume that you have evaluated your circadian rhythm and you are a "morning" type. Tomorrow you will have classes from 8am to 2pm. For the following day you have to learn a chapter in your languages book and repeat it for an hour. You have to do a science project as well as 10 mathematics problems to solve. From 6 o'clock you have tennis practise for one hour. Organise your day by allocating to each activity the appropriate importance and urgency in order to achieve all proposed activities.
2. Suppose that today is Saturday and you need to complete the following activities: buy a shirt, write a project in physics, complete mathematics homework, carry out a synthesis in English after reading a book which you will find at the library (you need to consider the roundtrip travel time), see a 2-hour movie with friends at 8pm and wash the car. Considering the fact that you are a “morning” type, organise the activities of this day.

1.4 Self-Assessment

Objectives

- Learn what is time management.
- Learn why we should organise our time.
- Learn why we should take breaks.
- Complete a comparative table.
- Prioritise daily activities.
- Evaluate the most productive time of the day for you.
- Techniques for time saving.
- Steps to organise time and activities.
- Learn how to avoid distracting factors.
- Learn how to improve our working conditions.

CHECK LIST – For Vocational Training and Secondary Schools (EQF 3/4/5)

QUESTIONS	YES	NO	Aspects to change or improve
Did you make a comparative table today?			
Did you know the exact amount of time needed for a specific activity?			
Did you complete all the proposed activities in the planned amount of time?			
Did you notice procrastination in comparative table?			
Did you update the amount of time for a specific activity after you analysed the comparative table?			
Did you make a list of proposed activities every day?			
Did you prioritise your activities from the list?			

Did you know the time of the day when you are the most productive?			
Did you use a time slicing method?			
Do you manage your time efficiently? Did you: - make list of activities - organise workspace without distracting factors - prioritise activities - plan relaxing breaks - periodically reorganise the list of activities - search for help			

CHECK LIST – For University (EQF 6)

QUESTIONS	YES	NO	Aspects to change or improve
How often do you make a comparative table?			
Did you think that a comparative table helped you to improve activities' time estimations?			
Did you know the exact amount of time necessary for a specific activity?			
Did you fulfil all the proposed activities in the planned amount of time?			
Did you notice procrastination in comparative table?			
Did you identify the activities that distracted you?			

Were you able to detail the most common procrastination activities?			
What are the most frequent procrastination activities: - playing with phone. - browsing social sites. - finding other things to do. - daydreaming - delaying an activity until the last minute. - finding it hard to organise a new activity.			
After you analysed the comparative table did you update the amount of time for a specific activity?			
Did you make a list every day of proposed activities?			
Did you prioritise your activities from the daily activities list?			
Were you able to choose an activity which was important and urgent but which you didn't like, as opposed to one which was not important and not urgent but you did like?			
Did you know the time of the day when you are the most productive?			
Did you organise the most important and urgent activities when you are the most effective and energetic?			
Did you use a time slicing method?			
Did you try more time slicing techniques? Which method was most efficient for you?			

Did you manage your time efficiently: - organise workspace without distracting factors - list of activities - prioritise activities - plan relaxing breaks - periodically reorganise the list of activities - use help			
Were you able to choose a pleasant activity to you do during the breaks?			
Were you able to find the reason for procrastination?			
What were you avoiding when you were wasting time?			

1.5 Learning resources

List of commented links	
Evaluate the circadian rhythm	
19 questions with 4-5 possible answers. A score is calculated which is then interpreted	
EN	http://www.cet-hosting.com/limesurvey/index.php

List of commented links	
Gmail – eMail Client	
You can use the Calendar for setting events and to do lists, reminders etc. The Calendar can be synchronised with different mobile devices or used in cloud.	
It is Free and Web based. Requires a Sign In	
EN	https://mail.google.com

List of commented links	
Thunderbird – eMail Client	
You can use the Calendar for setting events and reminders. The Calendar can be synchronised with Address Book. Can be integrated with 'Remember the Milk', another Time Management application	
Free, application for Windows, Mac OsX, Linux. Support for several Languages	
EN	https://www.mozilla.org

List of commented links	
Remember the Milk	
You can use the Calendar for setting events and reminders. The Calendar can be synchronised with Address Book. Can be integrated with other Time Management applications	
Free, application for Android, iPhone. Integration with Gmail, Google Calendar, Twitter, Evernote. Need Sign In	
EN	https://www.rememberthemilk.com/

List of commented links	
eM – eMail Client	
You can use the Calendar for setting events, tasks and reminders, meeting invitations and confirmations. The Calendar can be shared with other people. Support for Gmail, Exchange, Google Apps, chat.	
Free, application for Windows. Support for several languages	
EN	http://www.emclient.com

List of commented links	
ToodleeDo – Project Management	
Scheduler for setting events, tasks, repeated tasks and reminders based on location. It allows you to write long notes, make custom lists, create structured outlines and track your habits. You can collaborate with friends, family or your co-workers, and safely store and sync all your data to your devices.	
Free, application for Windows, Apple OsX, Android.	
EN	https://www.toodledo.com/#

2 HOW DO YOU LEARN?

2.1 Discover – learning strategies

Learning style shows how different people process and learn new information. Therefore, each person has more than one dominant learning style and in different settings uses a combination of them.

Learning strategies are a number of rules, methods and principles used to facilitate learning. The application of learning strategies leads to active learning, because it teaches you how to learn and how to successfully apply your learning. In order to obtain good learning results it is necessary to use number of combined learning strategies.

There are many **theories that classify learning styles**, the two most common are:

- **The VARK model** - explains that learning process is based on four sensory stimuli: visual (graphic images), auditory (audio), read / write (symbols) and kinetic (space, movement).
- **The David Kolb model** – is based on the Experiential Learning Model which has four components: concrete experience (feeling/sensations), reflective observation (watching), abstract conceptualisation (thinking) and active experimentation (doing).

The differences between the two models are given by the modalities in the learning process. The VARK model focuses on the senses and the Kolb model focuses on the thinking. These two models are not mutually exclusive, on the contrary, they complete each other.

Identifying your own learning styles, or choosing the right approach for a particular learning area can be difficult. There are tests that help to identify learning styles and to choose optimal strategies. There are many people who have great capacity to learn, but do not achieve their potential because they **do not know how to learn**. By applying learning strategies they can increase their learning. People who apply the correct learning strategies will be able to understand different materials, organise (through encoding, structuring and extraction of information), memorise, summarise and extract material.

Choosing a **learning strategy depends on the learning style and domain**.

Learning begins with understanding the new information and linking it with prior learned information. It continues with creation of mental structured representations, with coding and with organising the new information. This helps to create flexible and active knowledge structures. Learning continues with memorising of new information and then with repeating and evaluation of new acquisitions.

Learning strategies:

- selecting relevant information;
- establish the association between learned information and new learning;
- memorise;
- note-taking skills and highlight the main ideas;
- strategies for understanding written and reader texts;
- project design skills;
- graphical representations;
- reasoning (inductive, deductive);
- simulations and examples;
- inference

The purpose of applying learning strategies is that students will become independent learners and will be able to choose and apply a strategy or a combination of strategies appropriate to learning context.

The role of the teacher is to assist students by steering them towards a strategy or a group of strategies, where applicable, in a particular educational context.

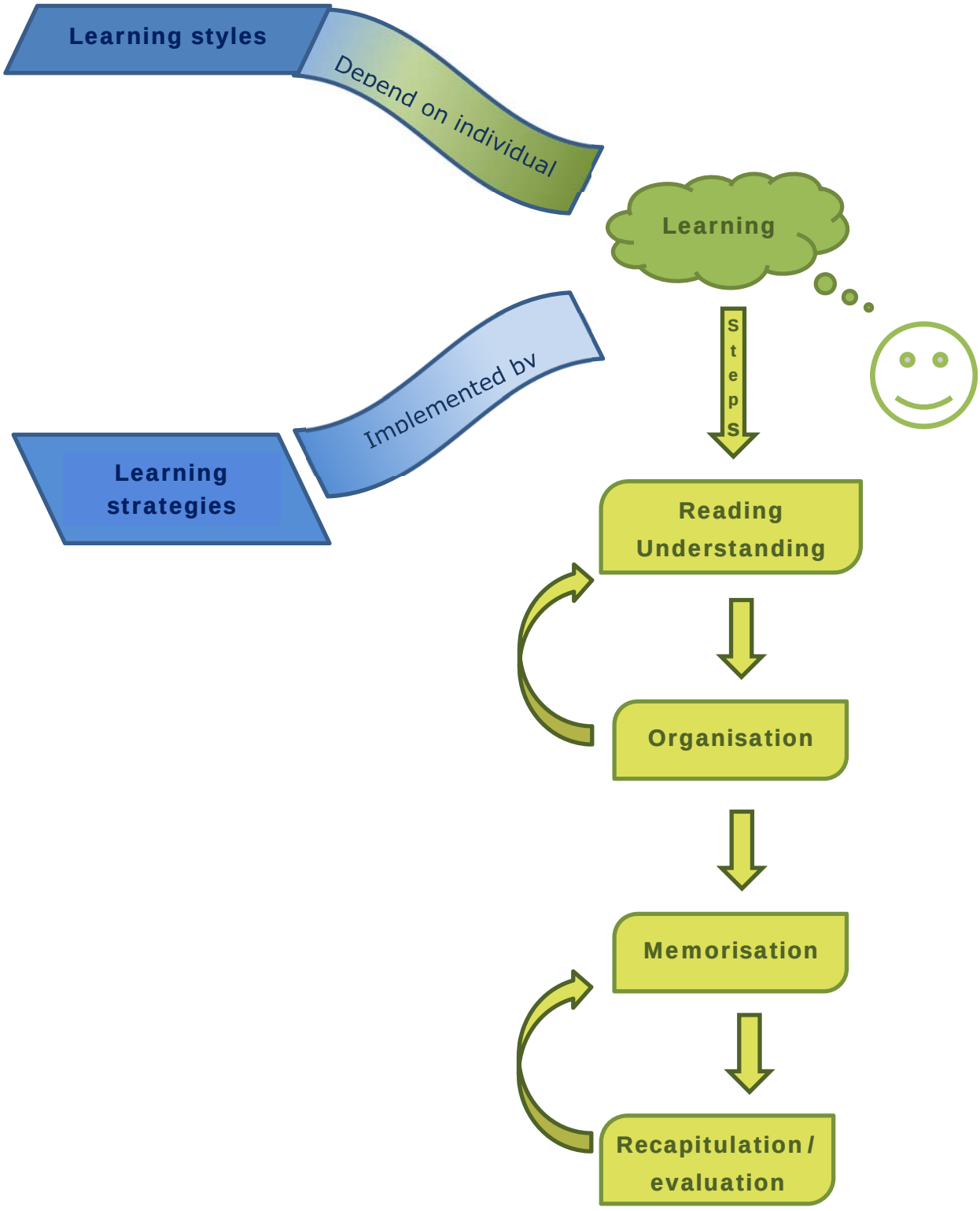


Figure: Learning Steps

The following table presents the learning strategies appropriate for the learning styles VARK.

Visual	Auditory	Read / Write	Kinetic
Diagrams	Discussions	Texts	Examples
Graphs	Conversations	Books	Simulations
Maps	Audio recordings	Notes	Demos
Colours	Seminars	Essays	Play roles
Different fonts	Acting	Bibliography	Models

The following table shows appropriate learning strategies for Kolb model.

Concrete experience	Reflexive observation	Abstract conceptualization	Active experimentation
Texts – reading	Discussions	Texts	Examples
Examples	Questions	Analogy	Simulations
Simulations	Diaries	Projects	Demos
Demos		Models	Case study
Models			Projects

2.2 Learn

2.2.1 Steps to learn

Learning a material is much easier when you understand it.

Steps that help to learn the study material are:

- **Read** slowly and carefully each section and only pass to the next topic after you **understand** the current one. There are tests that calculate your reading and comprehension skills.
- **Organise** the material so that the new information can to be grouped into categories and connected with already learnt information to create an active structure of interconnected information.
- **Memorising** - is the process that retains knowledge and experiences for later use. Memorising knowledge and skills can be done using short or long term memory. The purpose of learning is to memorise the information for a long period of time using your long-term memory. Superficial memorising allows us to reproduce a material without understanding and usually uses short-term memory. According to studies, after a day we remember only 40% of what we have learned and after one week we remember only 20% of what we have learned. Research in psychology showed that long-term memory is formed by repetitions at long intervals (space) and not by many repetitions at small intervals (compact).
- **Reviewing and assessing learning** – not only helps you to determine what you did not understand, but also helps to gain self-confidence.

2.2.2 To organise

There are a couple of methods that help you to organise information. They are as follows:

- **Visual** – organise ideas, concepts and information and associate them with images. It is important to use different colours, font styles (bold, italic) or font sizes in order to better express different concepts. Representing material can be done using graphical representations that group, classify or analyse information, such as:
  - ***Mark*** - after you read a whole paragraph, emphasise the main ideas or definitions and mark them using different highlighter colours (marked with a colour pen).
  - ***Mind map*** - is a chart which helps you to visually organise the information. Usually the centre of the diagram is one concept that links to other ideas.
  - ***Concept Maps*** - is a chart that represents relationships between concepts (new and old ones).
  - ***Tables and charts*** - represent data using pictures like bar, line, pie, and network.
  - ***Spider gram*** –a drawing that shows a summary of facts or ideas, with the main subject in a central circle and the most important facts on lines drawn out from it
  - ***Comics*** - explain an action or phenomenon by successive drawings.
  - ***Flowchart*** – is a diagram to represent an algorithm or a process.
  - ***Info graphics*** - uses graphics to illustrate information.
- **Audio** – organise the information using recorded presentations, reading and repeating aloud, listening to explanations given by someone else, explaining the subject to another person, discussions in a group, inclusion in a song of the studied subject, and using an application text to speech for read a written text.
- **Writing** - information to be learned presented in the form of texts, such as books, manuals, reports, essays, lists, dictionaries is organised through:
  - ***Notes*** - making a summary of the material helps you to memorise and easily repeat.
  - ***Summary*** - stimulates thinking and helps you to find links to other topics that you already know.
- **Kinetic** – organising the information for learning is achieved through physical activities, practical experiments (real or simulated), role play, and different forms of arts. This learning style is based on creating real experiences instead of studying the experience of others.

A more detailed explanation of this can be found in the following chapters.

However, studies have demonstrated that using a single learning style does not produce spectacular results, but combining multiple learning styles is beneficial for both groups and individuals. It can also be applied to a class of students. Therefore the tests for determining learning style have four scores, in order to understand the combination of learning styles. Predominant learning styles can be chosen depending on the context (e.g. studying anatomy is through reading /writing, a chemical phenomenon is by testing) or combined (using all the four styles helps for a deep understanding of a field of study) e.g. common craft (animations using simple drawings and text and spoken explanations to explain a subject) combines multiple learning styles.

Note: *that the best way to learn knowledge and skills is when the learning material is shown several times in various different ways which stimulates the different senses, thus activating different parts of the brain.*

2.2.3 To memorise

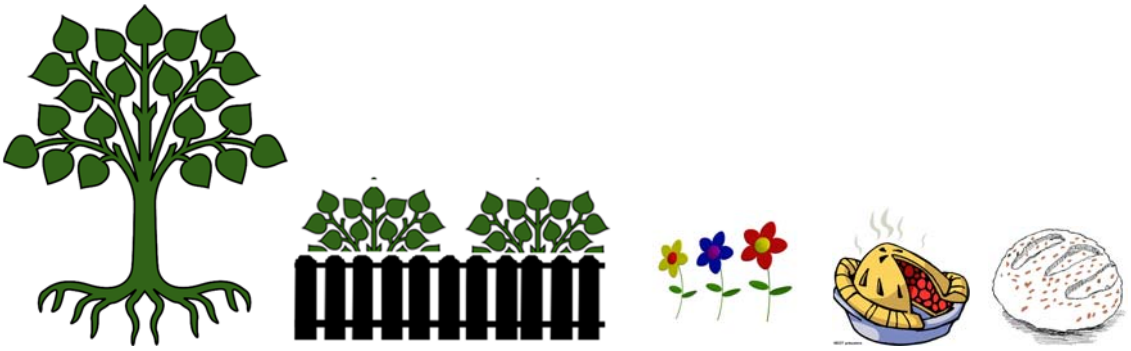
Sometimes you have to memorise information which is not logical (e.g. a song, a list of cities, the chemical elements of Mendeleev's table etc.). In such situations, a number of methods are useful and they are listed below:

- **Repetition** - research in pedagogy have shown that holding frequent repetition sessions of shorter duration is more effective than repetition many times in a single session. One of the major disadvantages of memorising is that the material is quickly forgotten. In order to prevent forgetting it is necessary to repeat it many times after longer intervals (or breaks) over a long period of time. There is an expression in Latin language “Repetitio mater studiorum est” which can be interpreted as “the harder you practice, the luckier you get”.

- **Acronyms** – when you want to learn a list of words, then you should construct and memorise an acronym from the first letters of these words. For example, European capitals: Stockholm, Brussels, Rome, Vienna, Bucharest, and Dublin -SBRVBD.

- **Viewing** – is used to memorise information that is associated with an image. For example, to remember a friend's birthday you have to visualise an image with the friend's home and a placard that says "Happy Birthday! - August 10th, 1990". For a better memorisation you can imagine funny or bizarre pictures.

- **Itinerary** - is utilised to store information associated with a frequently used route or with a familiar place e.g. room or divisibility rule for 5 (a number is divisible by 5 if the last digit is 0 or 5) you think you have 5 shirts and 0 skate-board or to memorise the parts of a plant (roots, stems, leaves, flowers, fruits, seeds) you can create an itinerary: when I go to school I walk beside a park where is a tree with large *roots* on the surface and a thick *stem*, then I walk beside a green fence with a lot of green *leaves*. After I pass the park, I must cross the street near a *flower* square. Then I pass by to a bakery which has specialties of tarts with *fruits* and bread with *seeds*.



ROOTS + STEM + LEAVES + FLOWERS + FRUITS + SEEDS

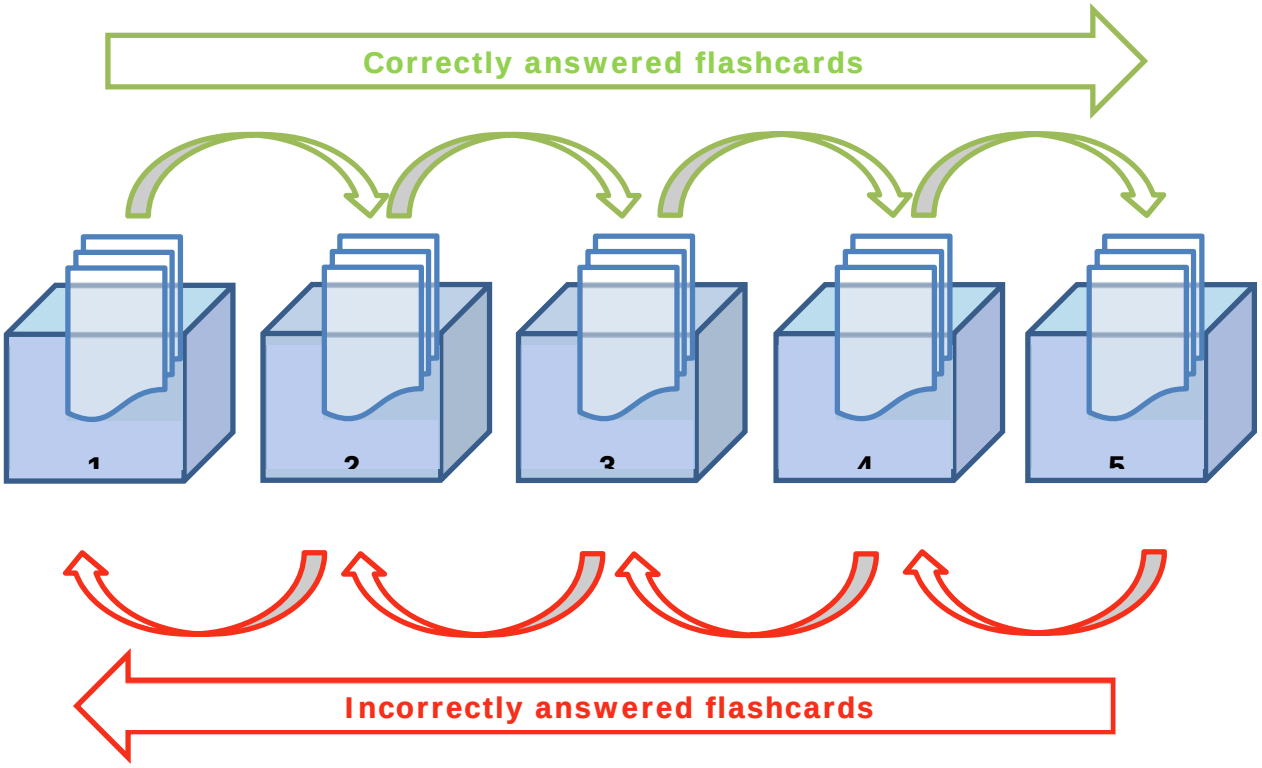
- **Flashcards** - help us to repeat the learned knowledge. They are small pieces of paper containing formulas, definitions, relationships between concepts, etc. created as pairs of questions and answers. Flashcards support us to easily figure out which topics we have forgotten and must repeat.

  Using repetition can help us bring learning in the past from the short-term memory into long-term memory. It is said that if we learn hard, we forget quickly. Even if we learn something we like, in order to be able to memorise for a longer period of time, we have to repeat it. A question: how many times should we repeat? The answer: whenever it is needed. If we repeat too often, we waste time. If we repeat it too rarely, we forget what we learnt. In addition, some topics are easier to remember than others taught at the same time. When we must repeat can be determined by when we begin to forget. But how do we know when we start to forget?

  To prevent forgetting you should repeat 5 times at different intervals. Take a box with 5 compartments. Put all the flashcards in the first compartment. The flashcards from the first compartment will be repeated every day. At each repetition the memorised cards will be put into the next compartment. The flashcards from the second compartment will be repeated every 3 days. Thus, each compartment has set a different interval for repetition. Consequently, the flashcards which are memorised in the current step will be repeated after a longer interval at the next step. If at the current step a card is not correctly or completely memorised, then it will be moved to a lower compartment, where it will be repeated more often.

  An example of repetition intervals is: 1 day, 3 days, 10 days, 30 days, and 90 days.

  These intervals can be modified. Thus, the second repetition can be made at 5 days instead of 3 days, and the last repetition can take place at 40 days instead of 90 days. Establishing optimal repetition intervals will be done by trial and experience and depends on each person.



There are several software applications (2.5 chapter) that are useful in organise your repetition intervals.

- **Explaining –** To explain to someone your new learning or knowledge (if nobody is available, then write it down) this will help you remember and better understand the study material. So, when you find something difficult to explain, it means that you have not memorised it and you must therefore repeat it.

2.2.4 To evaluate

- ***Simple questionnaires*** – the solving is a better way than re-reading the material, as it forces you to understand the study material. Questionnaires should refer to:
  - What are the learned concepts? - If you cannot simply explain with your own words what you've been learned, then it means that you don't understand.
  - What are the concepts that bind together or underlying?
  - What is the purpose of learning? The next questions arise: What do I know now? What would I like to learn? What problems can I solve with what I have learnt?
  - What problems are you capable of solving with new learned concepts?
- ***Exercises and problems*** - which are explained in the educational material should not only be read, they should be physically solved. In this way you will understand the concepts that were used to solve them. Then try to solve similar problems so you will know if you understand the concepts correctly. It is preferable to understand how to solve problems against memorising many types of problems.
- ***Practice*** – to use a method, rule, procedure or process in a particular field in order to obtain some expected results. Practice helps us to obtain a routine or habit that will quickly get results.
- ***Discussions*** – with a whole class or within a small group, help you to understand (through feedback) what you have learnt and what gaps still exist.
- ***Checklists and inventories*** - take you through the main points of learning material so you can easily discover the gaps.
- ***Presentation*** – record a presentation of what you have learned and then watch it. You can ask somebody else for advice or an opinion.

Every evaluation should begin from learning objectives.

2.3 Practice

2.3.1 Evaluate your memorising capacity

Try to apply a method of memorisation (repetition, acronyms, viewing, and itinerary) in the following problems:

1. Memorise regions / districts / counties from your country.
2. Memorise the anatomical parts of the human body.
3. Learn the date of the beginning of the Second World War.
4. Memorise the properties of arithmetic operations: commutative (addition, multiplication), associativity (addition, multiplication), (identity) neutral element (addition, multiplication), and distributive multiplication over addition.

2.3.2 Evaluate your repeating capacity

Try the flashcard method to learn:

1. The formulas for calculating perimeter and area for triangle, square, rectangle, circle.
2. The names of body parts in English.
3. Grammar for English tenses (affirmative, interrogative and negative) with keywords e.g. adverbs of time.

2.4 Self-Assessment

Objectives:

- What are learning strategies?
- Learning styles: visual, auditory, read/write, kinetic
- Learning steps: reading and understanding, knowledge organisation. Memorisation, recapitulation and evaluation.
- Methods for organising learning knowledge.
- Methods for memorising: repetition, acronyms, viewing, itinerary, flashcards, explaining.
- Methods to evaluate what have been learned: simple questionnaires, exercises and problems, practice, discussions, checklists and inventories, presentation.

Use the following checklists to make sure that you choose and apply the appropriate learning strategies.

CHECK LIST			
QUESTIONS	**YES**	**NO**	**Aspects to change or improve**
Are you a visual learner? Do you frequently use and understand diagrams, graphs, maps?			
Are you a visual learner? Does the learning material that uses different colours and fonts capture your attention?			
Are you an auditory learner? Do you better understand a subject when you discuss them with somebody else?			
Are you an auditory learner? Do you better understand a lesson when you listen to it rather than read it?			
Are you a learner through writing? Do you usually take notes when you learn?			
Are you a learner through reading? Do you better			

understand a lesson when you read rather than listen?			
Are you a kinetic learner? Do you prefer a practical example instead of reading a text?			
Are you a kinetic learner? Do you better understand a lesson when you follow a method rather when you read or listen?			
Are you using the next steps when you learn: - read and understand - organise the material - memorise - review and assess your learning			
What strategy do you prefer to organise material: - mark main ideas with different colours - take notes - mind map - concept map - make a summary			
Do you have a specific strategy to organise material for a specific domain? Explain why?			
What preferred strategy do you use to memorise a material: - repetition - acronyms - viewing - itinerary - explain to someone else			
Do you have a specific memorising strategy for a specific field? Explain why?			
How do you prefer to self-evaluate:			

- simple questionnaires - exercises and problems - practice - discussions - checklists - presentation			

2.5 Learning resources

List of commented links	
Learning strategies – test	
Evaluates learning strategies	
59 questions, with 5 possible responses	
RO	http://www.ccponline.ro/exemplu/exemplu_instrument.pdf

List of commented links	
Flashcard Learner	
Software – the most efficient way to learn and never forget again	
Trial and paid version	
EN	http://www.flashcardlearner.com/download/

List of commented links	
Anki	
Anki is a program which makes remembering things easy.	
Free version	
EN	http://ankisrs.net/

List of commented links	
Mnemosyne	
It's a free flashcard tool which optimises your learning process.	
Free version	
EN	http://mnemosyne-proj.org/

List of commented links	
Quiz for determine learning style in VARK model	
Questions and interpretation of quiz	
EN	http://vark-learn.com/the-vark-questionnaire/

List of commented links	
Quiz for determine learning style in VARK model	
Questions and interpretation of quiz	
EN	http://www.educationplanner.org/students/self-assessments/learning-styles-quiz.shtml

List of commented links	
Quiz for determine learning style in Kolb model	
Questions and interpretation of quiz	
EN	http://www.clinteach.com.au/assets/LEARNING-STYLES-Kolb-QUESTIONNAIRE.pdf

List of commented links	
Comprehension learning test	
First it is necessary to complete the speed reading test	
EN	http://www.readingsoft.com/index.html http://www.readingsoft.com/quiz.html

List of commented links	
Practice reading test	
Specific for different grades	
EN	http://www.pearsonlongman.com/ae/marketing/sfesl/practicereading.html

3 HOW DO YOU GRAPHICAL REPRESENT KNOWLEDGE

3.1 Discover – what is a Graphical Representation

The purpose of graphical representations is to exhibit relationships between ideas, data, information and concepts in a visual map or diagram. Graphical representations are easy to understand. They can also be edited and shared. The type of graphical representations will depend on the type of information shown and learning domain. They are one of the most effective learning strategies. A structured representation of information is closer to the workings of the human brain (structure of neurons) than other ways e.g. notes, highlights main ideas etc.

Advantages of graphical representations:

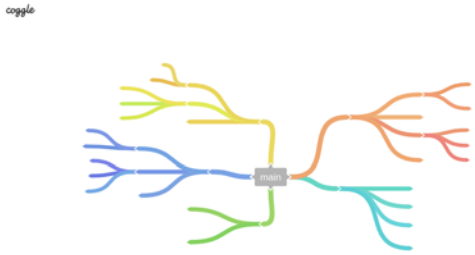
- Facilitate and improve learning;
- Helps to understand content;
- Can be used in a variety of topics (lessons, articles, literature);
- Increase structured thinking;
- Support creation of suggestive presentations;
- Helps to communicate;
- Useful for learning assessment and information evaluation;
- Increase creativity and helps to brainstorming;

Types of graphical representations:

- Mind map
- Concept map
- Info graphics
- Graphs

3.1.1 Discover – what is a Mind Map

*A Mind Map visually represents **hierarchical ideas and concepts** and helps to better synthesise and structure the information. Usually a Mind Map is designed around a single concept represented by an image and/or a word that connects other major concepts via connect branches. All these concepts form a radial structure or fireworks.*



Mind map structure:

- Central node;
- Labelled links;
- Branches with sub-nodes;

A Mind Map stimulates many areas of the brain (which stimulates memorising, as it was discussed in Chapter 3.2.4) because it uses graphics.

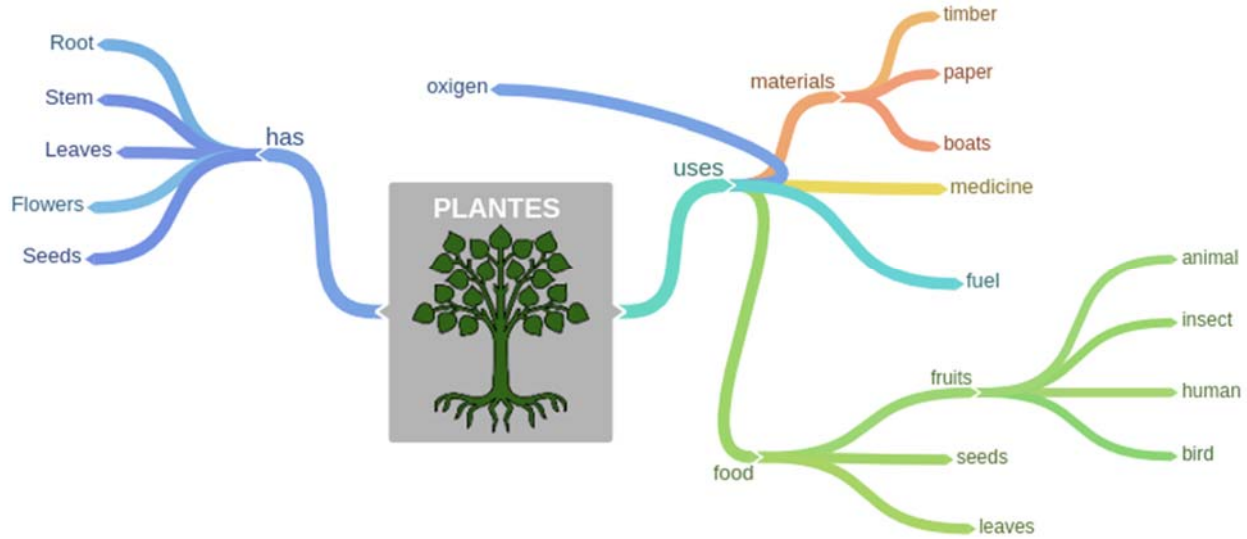
A Mind Map can be drawn by hand or using a software application.

Uses of Mind Maps:

- To organise and structure knowledge and classify information;
- To present information – better understanding of a text and memorising of main ideas;
- Learning and memorising;
- Planning (study time, events, presentations, project);
- Problems solving by improving cognitive functions;
- Brainstorming and creativity;
- Taking notes and summarising a text or a presentation;
- Decision taking;

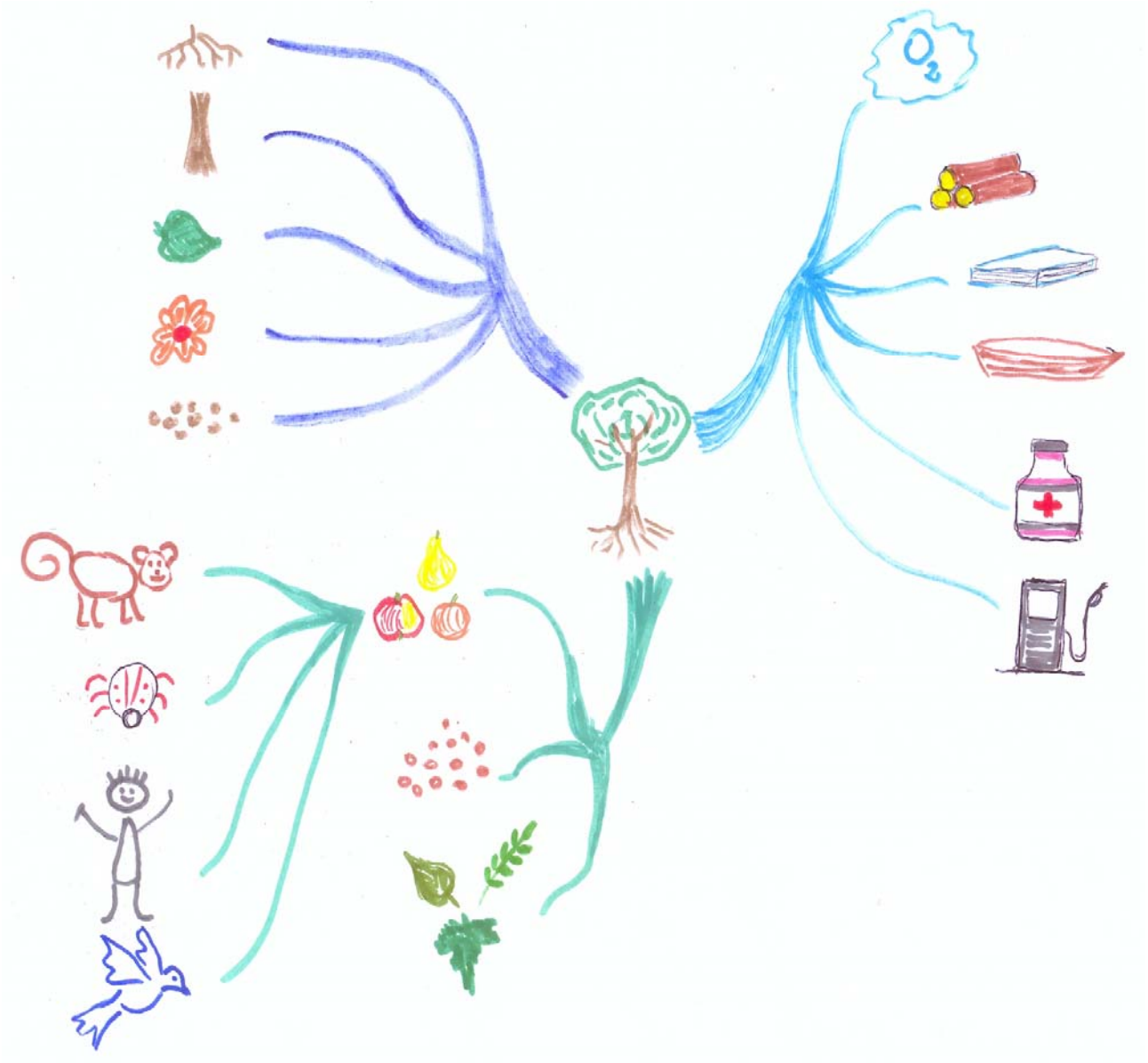
We should note that two Mind Maps representing the same subject, but created by two different people will look different. This is because each person has their own way of thinking logically and gathering knowledge from experiences which will be reflected in the Mind Map. Also, a person may have different representations at different moments of time for the same subject.

Example - Mind Map representing parts of a plant designed with a software application.



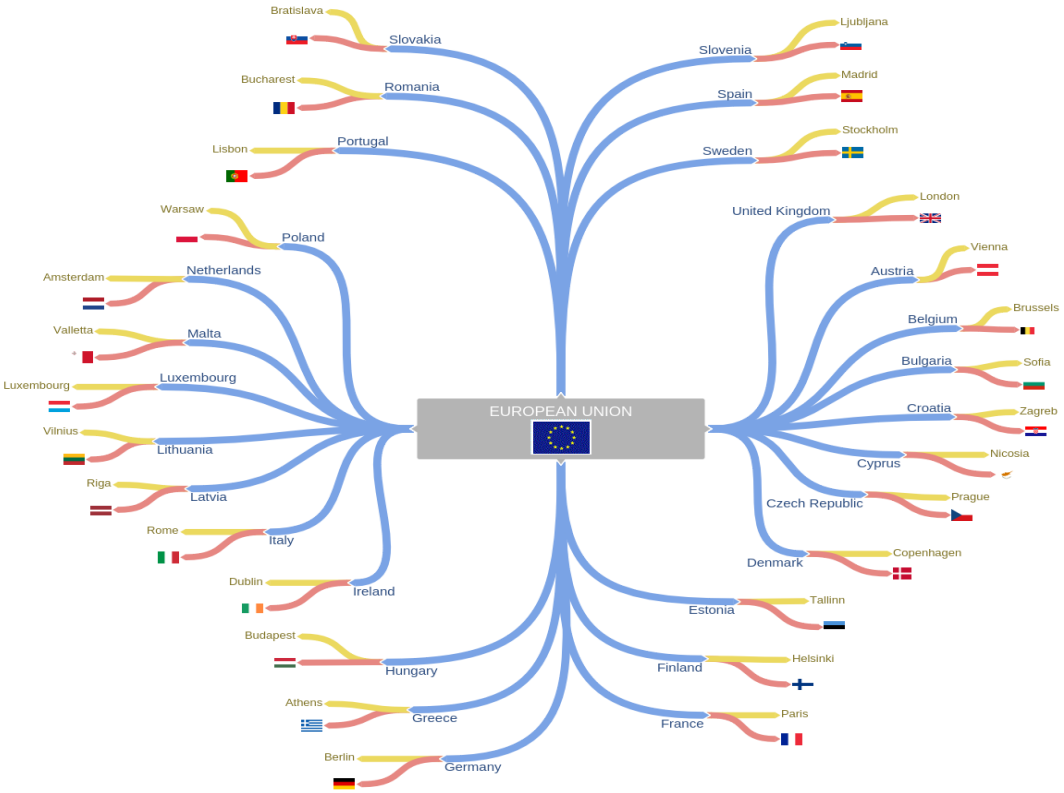
Creted with https://coggle.it

The same example of Mind Map representing parts of a plant designed by hand.

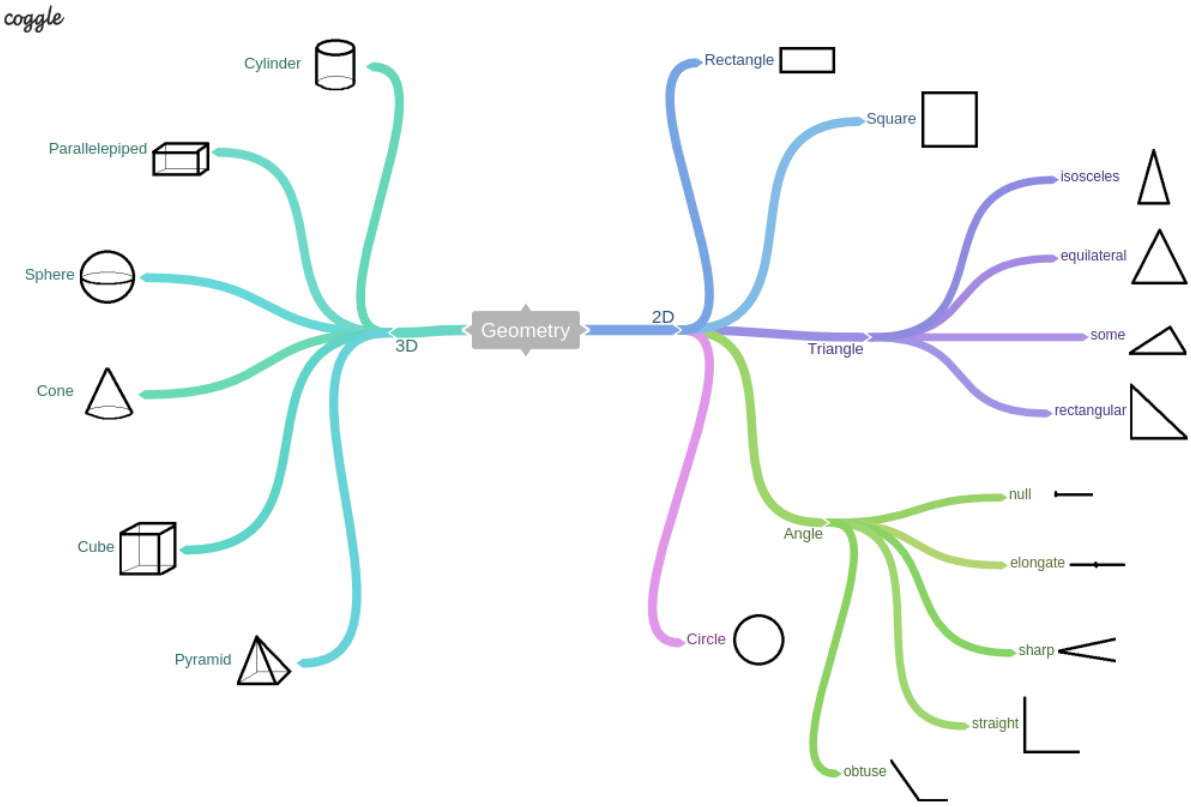


Example – EU countries with capitals and flags

coggle



Example – figures in geometry



3.1.2 Discover – what is a Concept Map

A Concept Map graphically represents ***the relationships between concepts or ideas*** *and helps in organising and structuring the information. Concept Map has a central concept branches in relations with other concepts. The concepts are represented in circles or squares connected by labelled arrows with other concepts forming a tree.*

Concept Map structure:

- Nodes;
- Labelled arrows;

Type of relationships between concepts can be: is a, consist of, contains, question, demand, define, and contribute. General concepts occupy high positions in the structure and concepts that have the same element are grouped on the same branch.

A concept map is context-dependent knowledge. The same knowledge, in another context, can form another concept map.

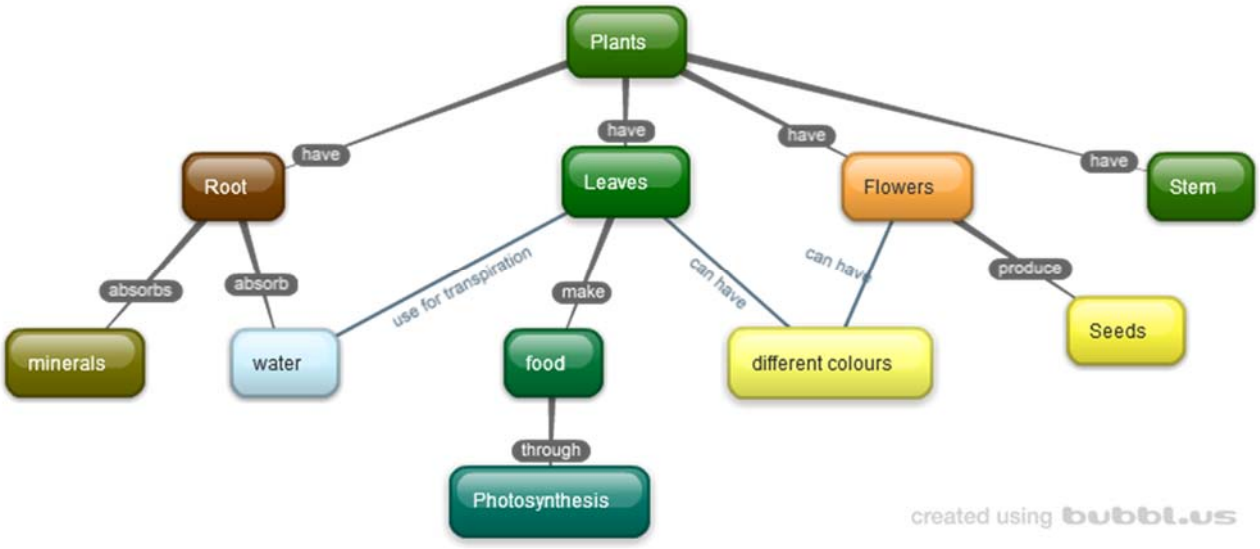
Like Mind Map, conceptual maps stimulate through the graphic entities, several areas of the brain thereby facilitating understanding, memorising and creating.

A conceptual map can be drawn by hand or by using a software application.

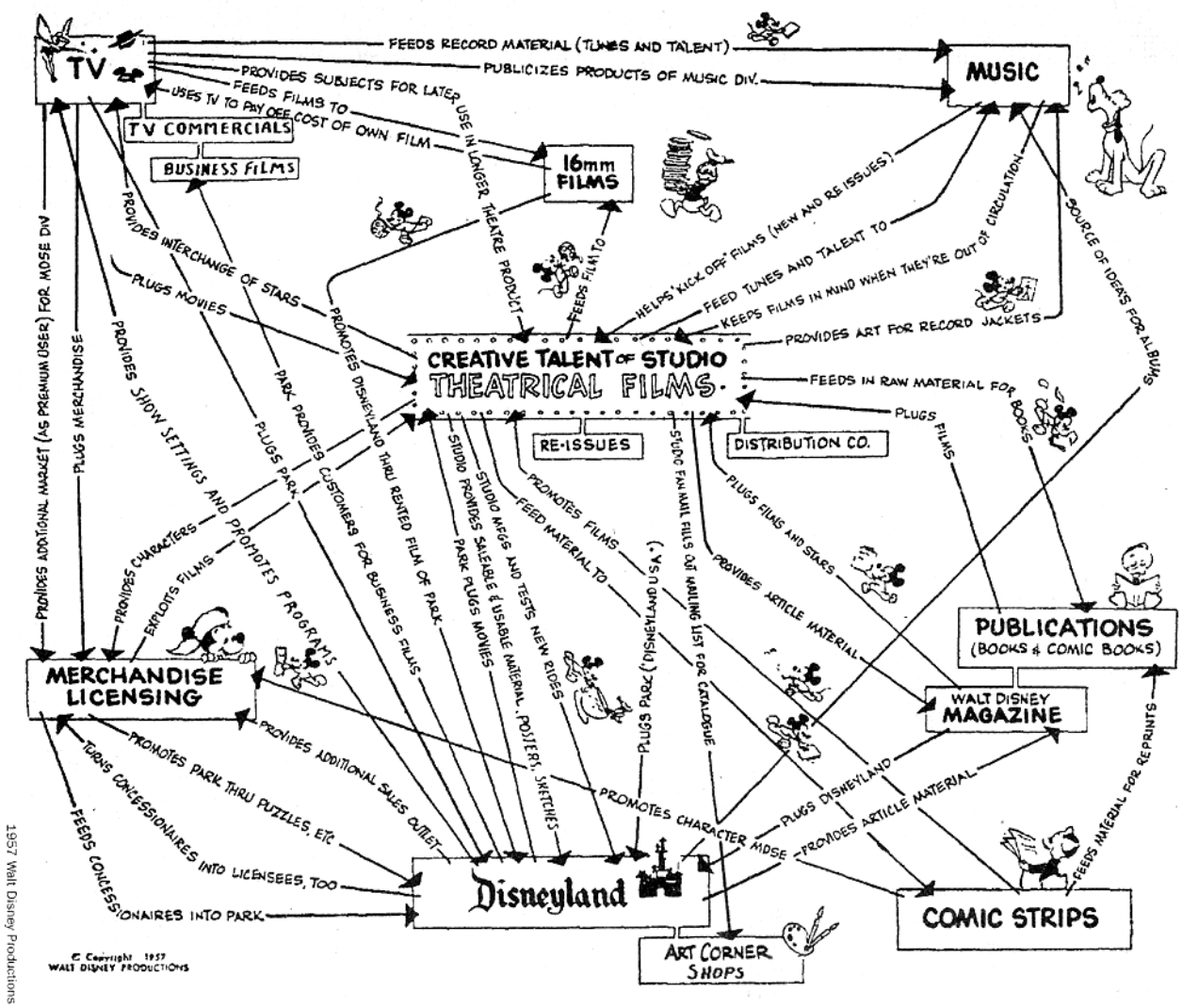
Uses of Concept Map:

- Synthesising concepts and relationships between them;
- Taking notes;
- Representing relational information (problem solving with alternative solutions grammatical structure of a language entities, organisational structure in an institution, structure concepts on a field of study, professional development, concepts and arguments, errors in a system);
- Understand text summaries by logical representation;
- Brainstorming - creativity;
- Software design (class structure, the structure of HTML pages, organising of files);
- Representing a learning plan;

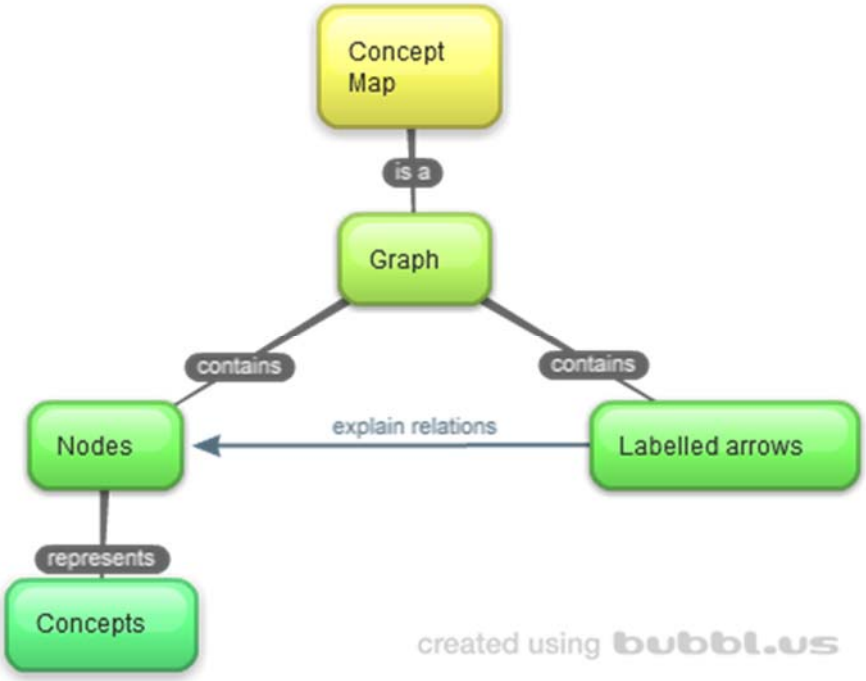
Example - Concept Map that represents structure and functions of plants designed with a software application.


Plants
have
Root
have
Leaves
have
Flowers
have
Stem
absorbs
absorb
use for transpiration
make
can have
can have
produce
minerals
water
food
different colours
Seeds
through
Photosynthesis
created using bubbl.us

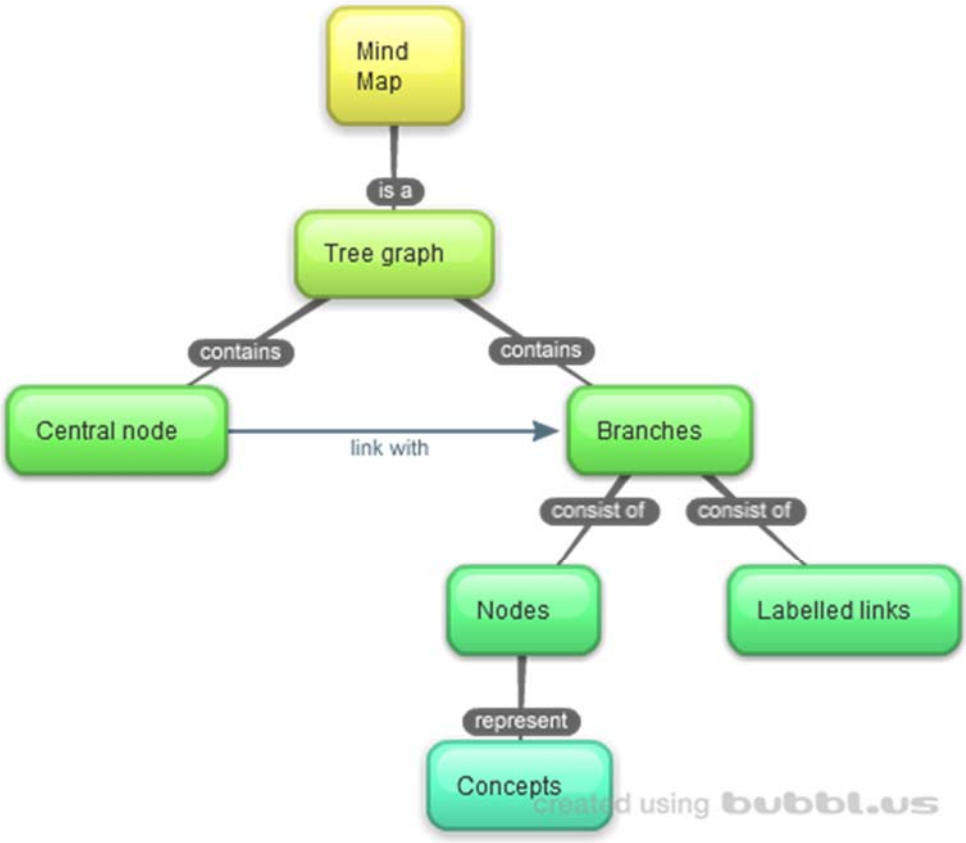
Example - Sample of a concept map created in 1957 by Walt Disney studios.



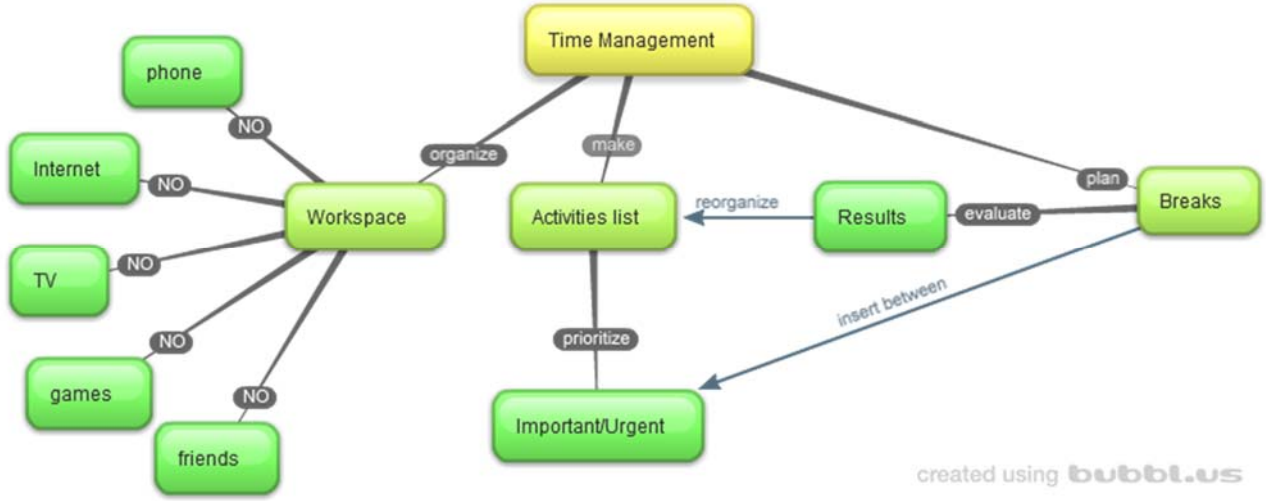
Example – What is a Concept Map?



Example – what is a Mind Map?



Example – how to manage time



3.1.3 Discover – differences between Mind Map and Concept Map

The differences between Mind Maps and Conceptual Maps are:

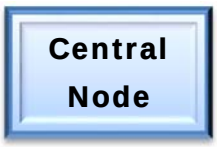
- Mind Map has a radial structure, while the Concept Map has a tree structure with many branches and clusters.
- Mind Map focus on one concept, while Concept Map connects multiple concepts or ideas.
- Arrows of Concept Map are labelled to represent the connection type with ancestor node. Links of Mind Map are labelled to represent the relationship with ancestor node.
- The process of creating a Mind Map is fast, spontaneous and reflects the vision of the designer about a particular topic. A Concept Map is an abstraction of a real problem, a tree branch and its creation requires thinking in detail to cover all actual cases, reflecting the reality and not of the subjectivity of the designer who creates it.

3.2 Learn

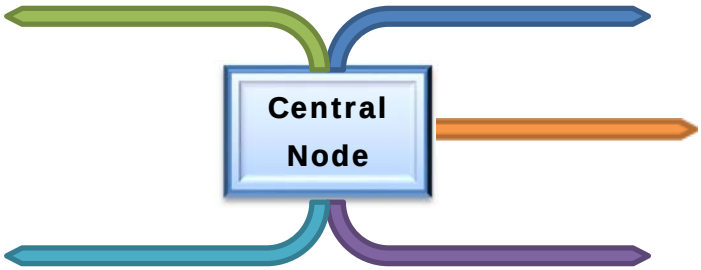
3.2.1 How to create a Mind Map

The steps to create a Mind Map are presented below:

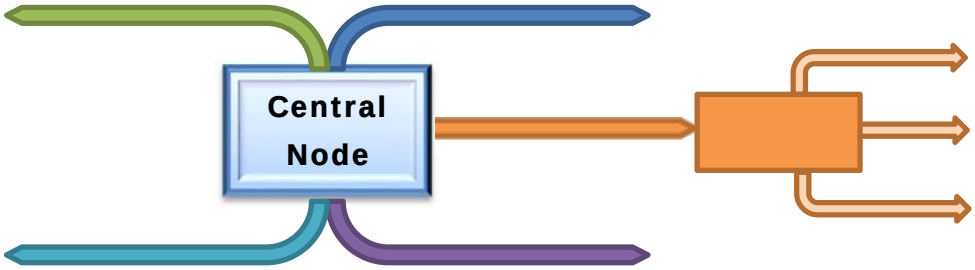
1. **Central node** - is drawn in the middle and it will represent the idea / knowledge to be detailed.



2. **Main branches** – will be added around central node in a clockwise direction starting from the right part at 2 o'clock position.



3. **Sub-nodes** – are linked with lines by the central node or by another node. They will contain detailed information about those branches. It would be good to keep the same colour as the branch that is linked.



To create a Mind Map you should **answer** one of the following **questions**:

- What is the main knowledge/the main category? Use the title for a hint.
- What are possible categories of sub-nodes (some examples)?
  - What are component parts/the structure?
  - What are the characteristics?
  - What are the categories?
- What type is the connection between nodes: inferiority (exclusivity, specificity, objectivity) or superiority (inclusivity, generality, abstracts)?
- What are the differences between knowledge/categories?

What **to avoid** when you create a Mind Map:

- Too many words used to name a node;
- Using of a single colour;
- Straight lines that intersect (instead of them use curved lines);
- Get stuck on a particular idea when creating content. Write whatever comes into your mind.

3.2.2 How to draw a Mind Map

- Labels - each node and each line has a label, which should be a short expressive text representing the knowledge (it is best to use only one word). Lines explain the organisation of sub-nodes.
- Drawings / symbols / codes - labels can be accompanied by expressive drawings to increase the visual impact.
- Line - connecting nodes become thinner as it departs from the main node.
- Colours – are used to group the various branches of mind map. You can use shades of the same colour to differentiate sub-nodes from the same category.
- Font - can be changed (bold, italic, underline, and colour, different size) to suggest the importance, the difference, the organisation.
- Radial structure – approximatively the same length of lines in a branch.
- Be creative. All ideas welcome.

3.2.3 How to create a Concept Map

In order to create knowledge structure of a concept map you will identify:

- **Concepts** - expressed by a noun or a noun construction. They shape events or objects perceived as patterns or templates. They are plotted in circles or rectangles. A Concept Map starts from the **main concept** that will be branched by arcs with other concepts.
- **Labelled arrows** - expressed through verbs or verbal construction showing the semantic link between the two concepts.
- **Hierarchical levels** - are sets of concepts that have the same level of generalisation. It forms a branch of the concept map. The general concepts are on higher levels.

To create a knowledge structure of a concept map you should **answer** the following **questions**:

- What is the main concept/idea from a specified area (a particular problem, a situation)? To find this concept, you may ask the following questions:
  - What is the problem that needs to be resolved?
  - What is the conclusion do we need to obtain?
- What are the relevant key concepts? There can be around 10-20 key concepts. They must be organised from the general to the particular.
- What is the connection between concepts: what is the verb or phrase that links any two concepts?

3.2.4 How to draw a Concept Map

- Labels – for nodes and arrows must be short expressive text, representing the knowledge, you can also use symbols i.e. +; %.
- Arrows - connecting nodes are directed from a general concept node to the nodes that show details of concepts.
- Drawings / symbols / codes / images - node labels can be accompanied by meaningful drawings to increase visual impact and create links between knowledge.
- Colours - are used to group nodes with the same element on a branch.
- The tree structure - should group nodes with the element.

3.3 Practice

3.3.1 Create Mind Map

Example to create a Mind Map – step by step

Renewable energy - Text source

https://en.wikipedia.org/wiki/Renewable_energy

Renewable energy is generally defined as energy that comes from resources which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat.

Renewable energy replaces conventional fuels in four distinct areas: electricity generation, air and water heating/cooling, motor fuels, and rural (off-grid) energy services. Based on REN21's 2014 report, renewables contributed 19 percent to our global energy consumption. This energy consumption is divided as 9% coming from traditional biomass, 4.2% as heat energy (non-biomass), 3.8% hydro-electricity and 2% is electricity from wind, solar, geothermal, and biomass. Renewable energy resources and significant opportunities for energy efficiency exist over wide geographical areas, in contrast to other energy sources, which are concentrated in a limited number of countries. Rapid deployment of renewable energy and energy efficiency, and technological diversification of energy sources, would result in significant energy security and economic benefits. It would also reduce environmental pollution such as air pollution caused by burning of fossil fuels and improve public health, reduce premature mortalities due to pollution and save associated health costs. While many renewable energy projects are large-scale, renewable technologies are also suited to rural and remote areas and developing countries, where energy is often crucial in human development.

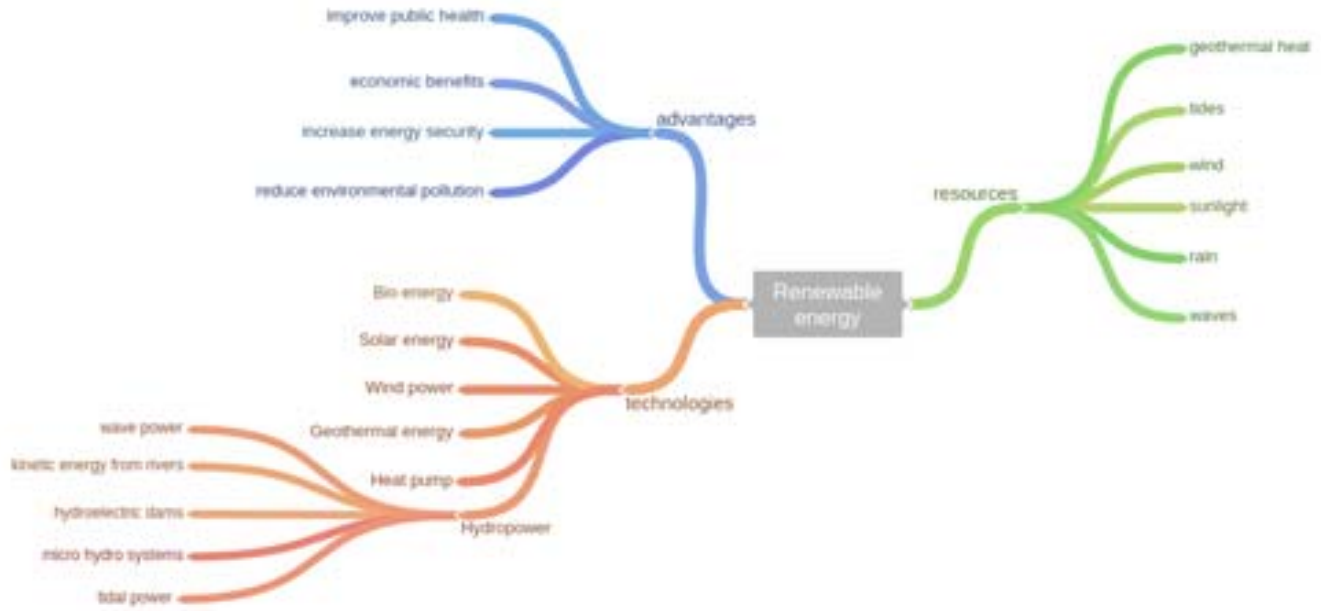
Mainstream technologies

- Wind power - Airflows can be used to run wind turbines.
- Hydropower - Energy in water. There are many forms of water energy:
- Hydroelectric energy is a term usually reserved for large-scale hydroelectric dams.
- Micro hydro systems are small hydroelectric power installations.
- Run-of-the-river hydroelectricity systems derive kinetic energy from rivers without the creation of a large reservoir.
- Wave power, captures the energy of ocean surface waves,
- Tidal power, converts the energy of tides,
- Solar energy - radiant light and heat from the sun, uses a range of technologies such as solar heating, photovoltaic, concentrated solar power, solar architecture and artificial photosynthesis. Solar technologies are broadly characterized as either passive solar or active solar depending on the way they capture, convert and distribute solar energy.

- Geothermal energy - is from thermal energy generated and stored in the Earth, like hot springs.
- Bio energy - biomass is biological material derived from living, or recently living organisms (wood remains, municipal solid waste, plant or animal matter). As an energy source, biomass can either be used directly via combustion to produce heat, or indirectly after converting it to various forms of biofuel. Conversion of biomass to biofuel can be achieved by different methods which are broadly classified into: thermal, chemical, and biochemical methods.
- Heat pump - are designed to move thermal energy opposite to the direction of spontaneous heat flow by absorbing heat from a cold space and releasing it to a warmer one. A heat pump uses some amount of external power to accomplish the work of transferring energy from the heat source to the heat sink.

Mind map – in order to create the map you should follow the instructions from the course.

Question	Answer
What is the main knowledge?	Renewable energy
What are the sub-nodes?	Ask some of the next questions:
What is the definition?	Energy from natural resources: sunlight, wind, rain, tides, waves, and geothermal heat
What are the advantages?	Advantages of using renewable energy: improve public health, economic benefits, increase energy security, reduce environmental pollution.
What are the technologies?	Technologies used to obtain renewable energy are: bio energy, solar energy, wind power, geothermal energy, heat pump, and hydropower.
What means hydropower?	Hydropower means: wave power, kinetic energy from rivers, hydroelectric dams, micro hydro systems, tidal power.


Improve public health
economic benefits
increase energy security
reduce environmental pollution
advantages
Renewable energy
resources
geothermal heat
tides
wind
sunlight
rain
waves
Bio energy
Solar energy
Wind power
Geothermal energy
Heat pump
Hydropower
technologies
wave power
kinetic energy from rivers
hydroelectric dams
micro hydro systems
tidal power

In order to practice, create one Mind Map for each of the following issues:

1. The organisational structure of the school (eg, director, deputy director, board of directors, board of parents, the organisational structure of each class).
2. Organise your weekly activities.
3. Create the organizational structure of the European Union.
4. Classification of olympic sports.
5. Carrier classification.
6. Common diseases.

3.3.2 Create Concept Map

Example – create a Concept Map from a text – step by step

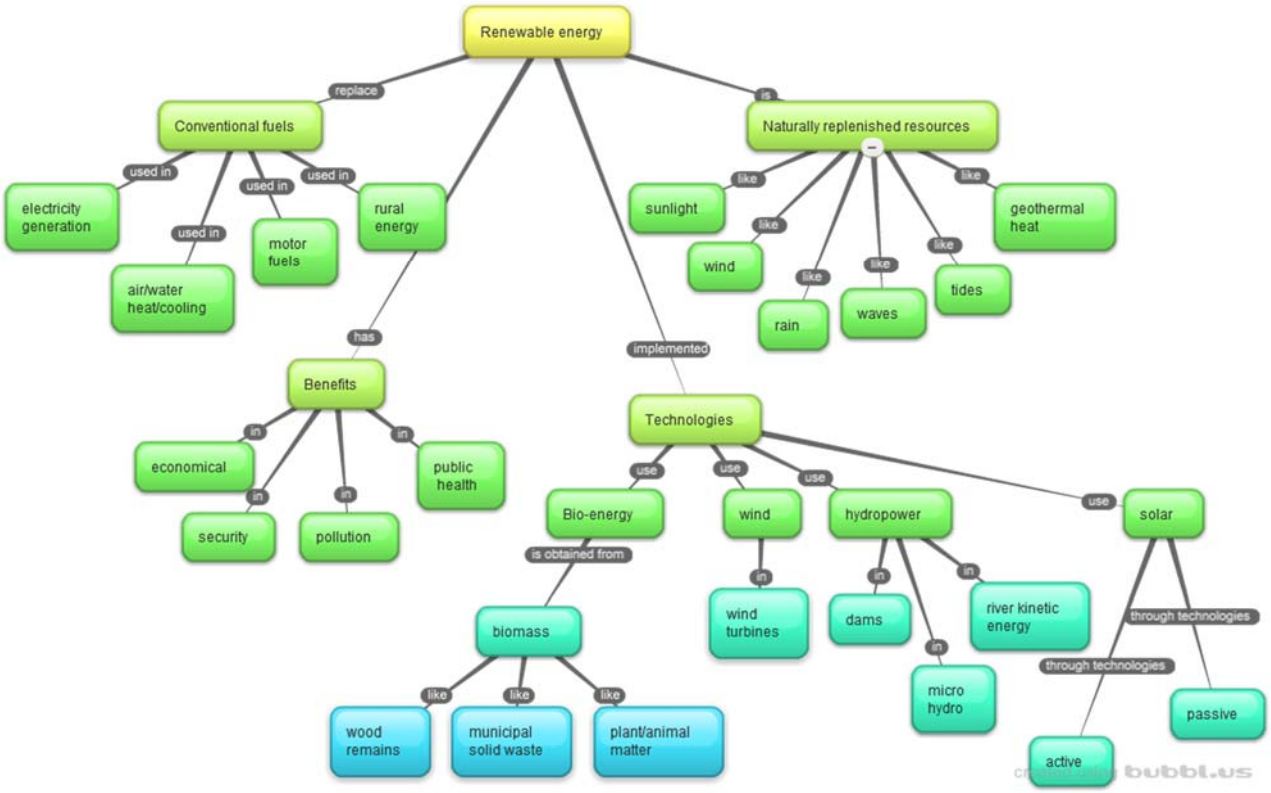
The same example from Mind Map (3.3.1 chapter) with

Renewable energy - Text source

https://en.wikipedia.org/wiki/Renewable_energy

Question	Answer
What is the main knowledge?	Renewable energy
What are the relevant key concepts? What is the connection between concepts?	Naturally replenished resources Renewable energy **is** Naturally replenished resources
What are the relevant key concepts? What is the connection between concepts?	Conventional fuels Renewable energy **replace** Conventional fuels
What are the relevant key concepts? What is the connection between concepts?	Benefits Renewable energy **has** Benefits
What are the relevant key concepts? What is the connection between concepts?	Technologies for Renewable energy Renewable energy are **implemented** with help of Technologies
What are the relevant key concepts? What is the connection between concepts?	Examples of Naturally replenished resources **like** sunlight, wind, rain, tides, waves, geothermal heat
What are the relevant key concepts? What is the connection between concepts?	Uses of conventional fuels Conventional fuels are **used in**: electricity generation, air/water heat/cooling, motor fuels, rural energy
What are the relevant key concepts? What is the connection between concepts?	What are the Benefits Benefits **in**: security, economical, pollution, public health
What are the relevant key concepts?	What use the Technologies? Technologies **use**: Bio-energy **is obtained from** biomass **like** wood remains, **like**

What is the connection between concepts?	municipal solid waste, **like** plant/animal matter Technologies **use**: wind **in** wind turbines, Technologies **use**: hydropower **in** dams, **in** micro hydro, **in** river kinetic energy Technologies **use**: solar **through technologies** active and passive



In order to practice create one Concept Map for each of the following issues:

1. What are the steps to prepare an omelette.
2. How you organise you learning for the next exam.
3. What are the entities and forces in Solar System.
4. How to create a Concept Map.
5. What you can do to stay healthy.
6. What are the steps in your career.

3.4 Self-Assessment

Objectives:

- What are graphical representations.
- What is Mind Map.
- Structure of Mind Map.
- Uses of Mind Maps.
- What is a Concept Map.
- Structure of Concept Map.
- Uses of Concept Maps.
- Differences between Mind Map and Concept Map.
- How to create a Mind Map.
- How to create a Concept Map.

Use the following checklists to make sure that you choose and apply the appropriate learning strategies.

CHECK LIST			
QUESTIONS	**YES**	**NO**	**Aspects to change or improve**
Does your graphical representation present relationships between ideas, data and concepts?			
Can you name some graphical representations advantages?			
Do you know what a Mind Map is?			
Do you know the structure of a Mind Map?			
Can you identify some uses of Mind Maps?			
Do you know what a Concept Map is?			
Do you know the structure of a Concept Map?			
Can you identify some uses of Concept Maps?			

What are the differences between Mind Maps and Concept Maps?			
Do you know the steps for creating a Mind Map?			
What questions help you identify concepts for a Mind Map?			
What must be avoided when creating a Mind Map?			
What the steps for creating a Concept Map?			
What questions help identify concepts for a Concept Map?			
What must be avoided when creating a Concept Map?			

3.5 Learning resources

List of commented links	
Mapledge	
Software for Mind Map – create a map from text notes	
Free, web application	
EN	http://dev.intercomsolutions.it/mapledge/home

List of commented links	
Coogle	
Software for Mind Map	
Free, web application	
EN	https://coggle.it/

List of commented links	
WiseMapping	
Software for Mind Map	
Free, web application	
EN	http://www.wisemapping.com/

List of commented links	
MindOmo	
Software for Mind Map	
Free, web application	
EN	https://www.mindomo.com

List of commented links	
XMind	
Software for Mind Map	
Free, desktop application	
EN	https://www.xmind.net/

List of commented links	
FreeMind	
Software for Mind Map	
Free, desktop application	
EN	http://freemind.sourceforge.net/wiki/index.php/Download

List of commented links	
MindMaple	
Software for Mind Map	
Free, desktop application	
EN	http://www.mindmaple.com/Default.aspx

List of commented links	
SimpleMind	
Software for Mind Map	
Free, Windows, Mac, Android, iPod, iPhone	
EN	http://www.simpleapps.eu/simplemind/

List of commented links	
WiseMapping	
Software for Mind Map, easy to use	
Free, web application	
EN	https://app.wisemapping.com

List of commented links	
Illuminate Training	
Blog about Mind Maps	
Information, training, examples, software	
EN	http://www.mind-mapping.co.uk/mind-map-examples/

List of commented links	
MindWerx International	
Blog about Mind Maps	
Examples, information, training, , products	
EN	http://www.mindwerx.com/mindexchange/browse-grid/mind-maps

List of commented links	
Bubbl	
Software for Concept Map and MindMap	
Free, web application, need Sign In for save the map, simple to use, limited number of maps	
EN	https://bubbl.us

List of commented links	
VUE – Visual Understanding Environment	
Software for Concept Map	
Free, desktop application, need Sign In for download, for Mac OSX, Windows, Linux	
EN	http://vue.tufts.edu/index.cfm

List of commented links	
Cmap	
Software for Concept Map	
Free, desktop application, need Sign In for download, for Mac OSX, Windows, Linux	
EN	http://cmap.ihmc.us/

List of commented links	
The MindMapping Software Blog	
Blog about Mind Maps	
Reviews, training, articles	
EN	http://mindmappingsoftwareblog.com/

4 CREDITS

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- FIT – Fast Track into Information Technology Ltd. (Ireland)
- BFI – Berufsfoerderungsinstitut Oberoesterreich (Austria)
- Universitatea Dunarea De Jos Din Galati (Romania)
- EVTA – Association Européenne pour la Formation Professionnelle AEFP / European Vocational Training Association (Belgium)
- Folkuniversitetet, Stiftelsen kursverksamheten vid Uppsala Universitet (Sweden)

These organisations are active in the field of secondary and university education, vocational and educational training.

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