

# GreenVETAfrica

Teachers training on Green Waste  
Management  
Module 2 - Digital Pedagogy  
Date



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GreenVETAfrica mission is to offer an innovative capacity building programme on Green Waste Management in Nigeria and Ghana

# The main methods and strategies of digital pedagogy

## Unit 1 – Lesson 4

### *Unit objectives:*

- Apply effective methods and strategies of digital pedagogy (e.g., active learning, meaningful learning, cooperative learning).
- Design and test inclusive learning activities that meet the diverse student needs

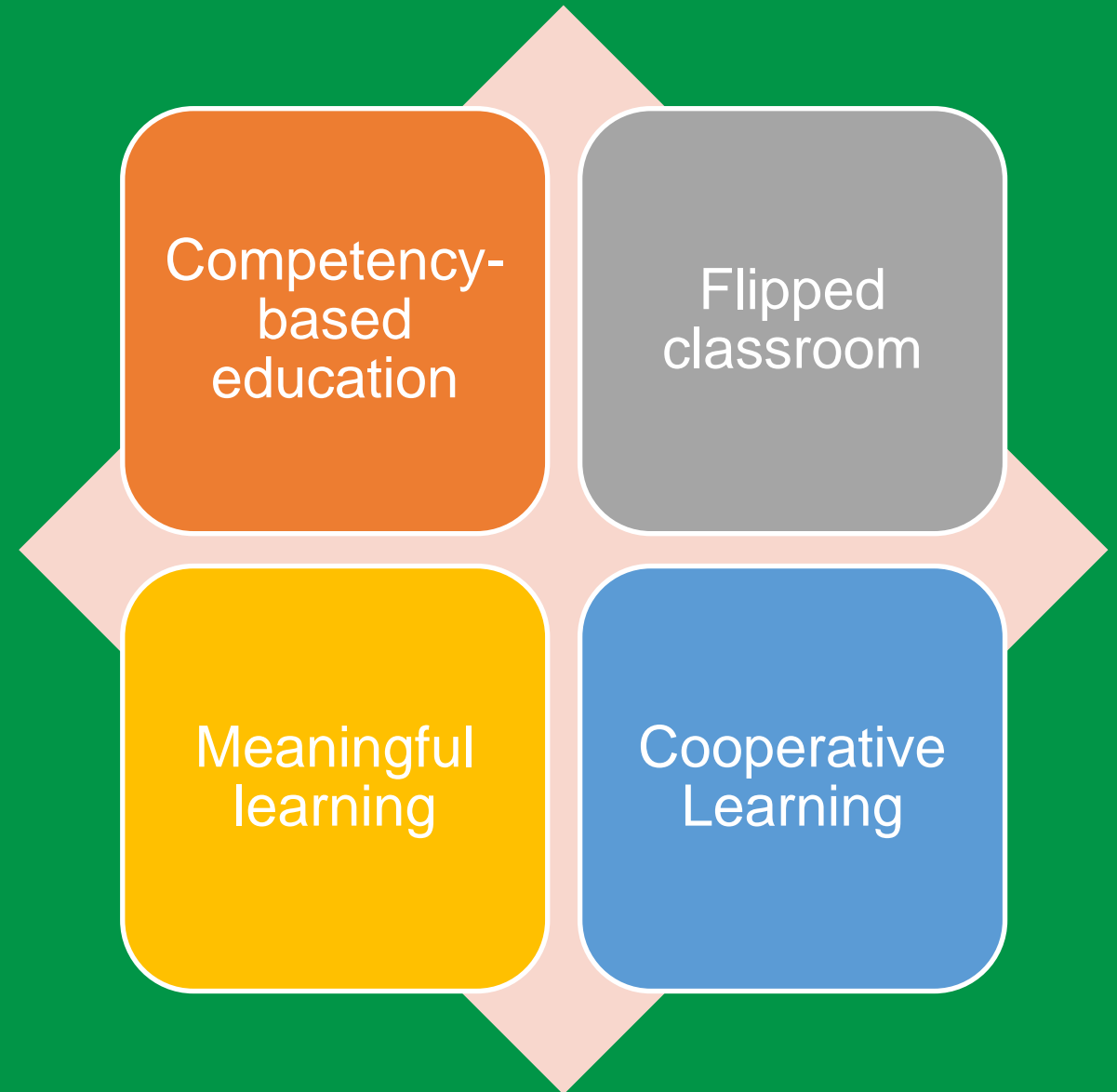
*Knowledge domain:* Teaching and pedagogical methods



# Main strategies

Within the scope of this course we will cover some of the most popular teaching strategies employed with the support of educational technologies.

These strategies are not necessarily to be used "stand alone," but can be combined as needed



# Meaningful learning

## What is

Meaningful learning produces **lasting effects** in the student's life, as the student retains the knowledge and skills acquired even after the assessment test.

It occurs when the student has the opportunity to bring acquired knowledge **into practice** and reuse it in other problematic and real-world contexts, manipulating and reworking it to create new knowledge.

(B. Bloom cfr. M. Maglioni, V. Panucci)





# Meaningful learning

## Meaningful task

Meaningful learning occurs through the completion of a **meaningful** task.

A meaningful task involves the creation of an artifact (either material or intellectual) through the manipulation of knowledge, which in turn generates new knowledge



# Meaningful learning

## Meaningful task

### Features of the authentic/meaningful task:



#### 1 - Realistic

- Sparse data and free resources
- Steer problems and teachers's instructions on real life
- ... or to a possible job?

#### 2 - Multicopmetential

- Must go beyond the specific discipline

# Meaningful learning

## Meaningful task

### Features of the authentic/meaningful task:



#### 3 - Immediately assessable

- Design a checklist that allows students to monitor progress at any time and keep in mind what aspects of their work will be assessed on
- Checklists should be self-assessable
- Provide a time in the first part of the activity to check with each group on the progress of their work

#### 4 - Admits more than one solution

- The solution should not be constrained to one option, but should admit multiple possibilities



# Meaningful learning

## Meaningful task

### Some examples of instructions of meaningful tasks:



- Does a CNG Panda or a human person produce more carbon dioxide during their lifetime?
- Sitting on the wall during recess;
- Carlo drinks a Diet Coke and Simone smokes a cigarette. Which one is at greater risk to his health?
- Is a hamburger or a pizza more nutritious?
- What letter would you write to your uncle in Abuja to ask him for hospitality and help you look for a job in Nigeria?

# Meaningful learning

## Meaningful task

### Other features of meaningful tasks:

:



- Challenging component
  - Not easily solvable problem
  - Fostering positive competition among groups
- Collaborative approach (stimulating social skills)
- Including the creation of a product
  - Material
  - Non-material
- Evaluating not only the product but the entire process
- Opportunity for self-assessment
  - Making students aware of their learning process

# Competency-Based education

## Definition of competence

The term *competency* or *competence* has been operationally defined in various ways.

Based on a review of definitions, competence can be broadly viewed as the knowledge, skills, and arritudinal abilities required by an individual to perform a given job or task effectively, beyond expected standards



# Competency-Based education

## Key elements

- The curriculum or training program is modular
- Program requirements are based on competency standards
- Performance is largely outcome based and not input or process oriented
- The focus is on practice and skill development
- Performance is measurable and observable
- Assessment is criterion referenced
- Programs have performance standards
- Assessment process is personalized



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# Competency-Based education

## Key elements



Competency-based programs have historically been used for technical skills development rather than for areas requiring sciences skills

Nevertheless, for a few years now this approach has been becoming increasingly popular even in humanities-based learning pathways, thanks in part to the use of educational technology

Competency-based programs traditionally put less priority on group tasks that require collaboration, communication, and cooperation abilities

# Designing and testing inclusive learning activities



# Compensatory Technologies

## Main features



These tools are specifically constructed to facilitate functions that the individual cannot perform because of a deficit, or that he or she can perform with highly deficient performance because of, for example, a specific disorder



Involve the acquisition of compensatory skills, which may also take the form of the use of compensatory technologies



Compensatory skills are not determined by technology, but by strategy, teaching action, teacher's actions



Students who use it must learn how to use it

# Compensatory Technologies

## Main features



They do not strengthen the foundational skills that students have not automated due to learning disabilities

They do not serve to relieve the student of the burden of learning, but to put him or her on an equal level with peers

They are not reworked teaching resources but can be used to produce them

**WARNING!!**

# Compensatory Technologies

## Some examples

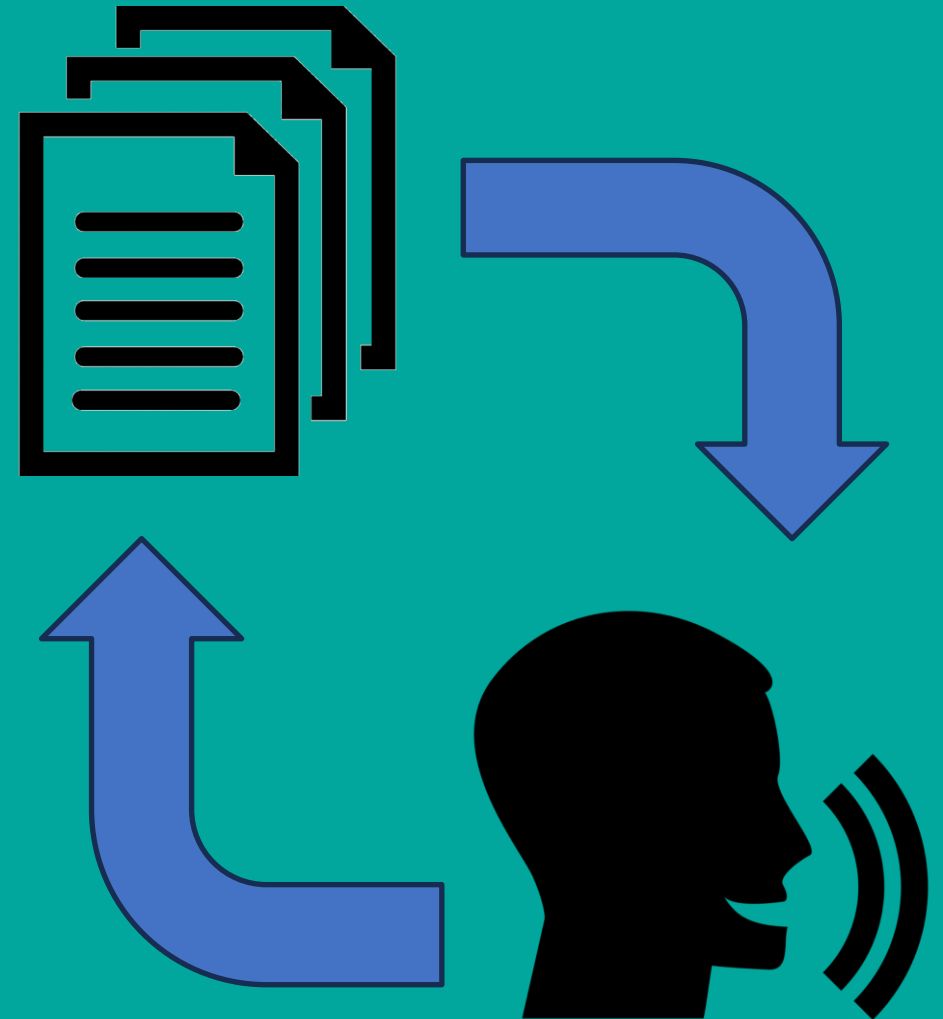
- **Text-to-Speech**

converts written text into spoken language, making it easier for students with reading difficulties, dyslexia, or visual impairments to access and comprehend written content

- **Speech-to-Text Softwares**

allows students with speech difficulties or physical disabilities to speak into a computer or device, which then converts their spoken words into written text

Screen Readers





# Compensatory Technologies

## Some examples

- **Screen Readers**

Screen reading software reads aloud the content displayed on a computer screen, enabling visually impaired or blind students to access digital information and navigate the web.

- **Alternative and Augmentative Communication**

These software and devices assist students with speech or communication impairments by providing them with tools to express themselves, such as picture boards, speech-generating devices, or specialized apps.



# Compensatory Technologies

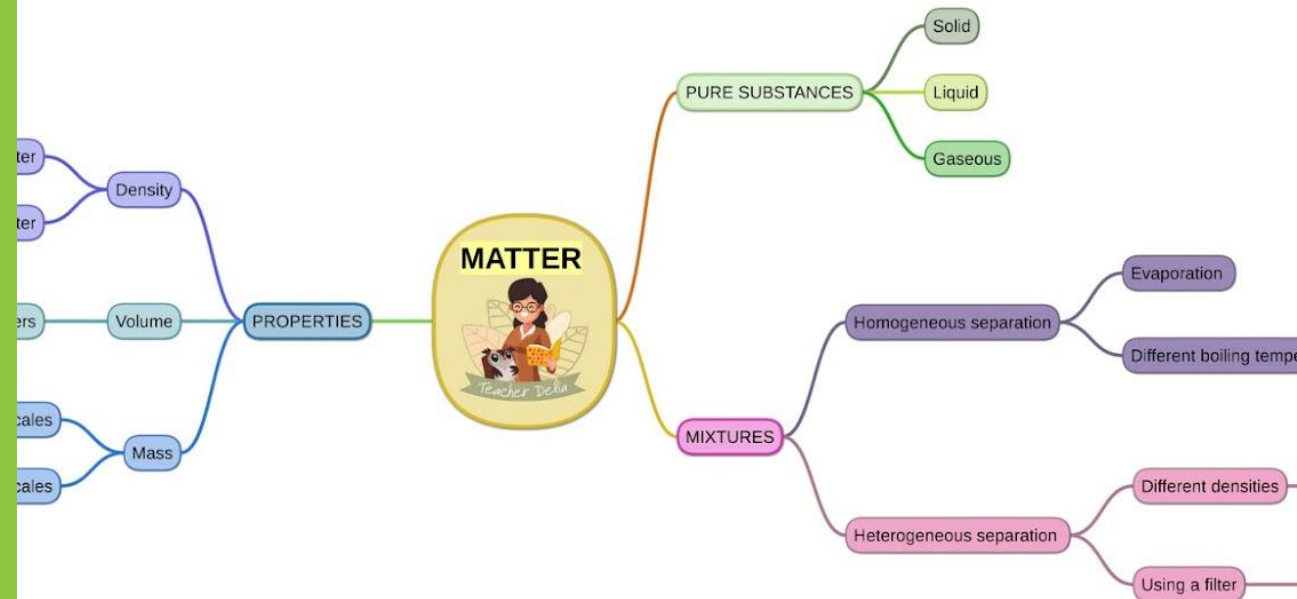
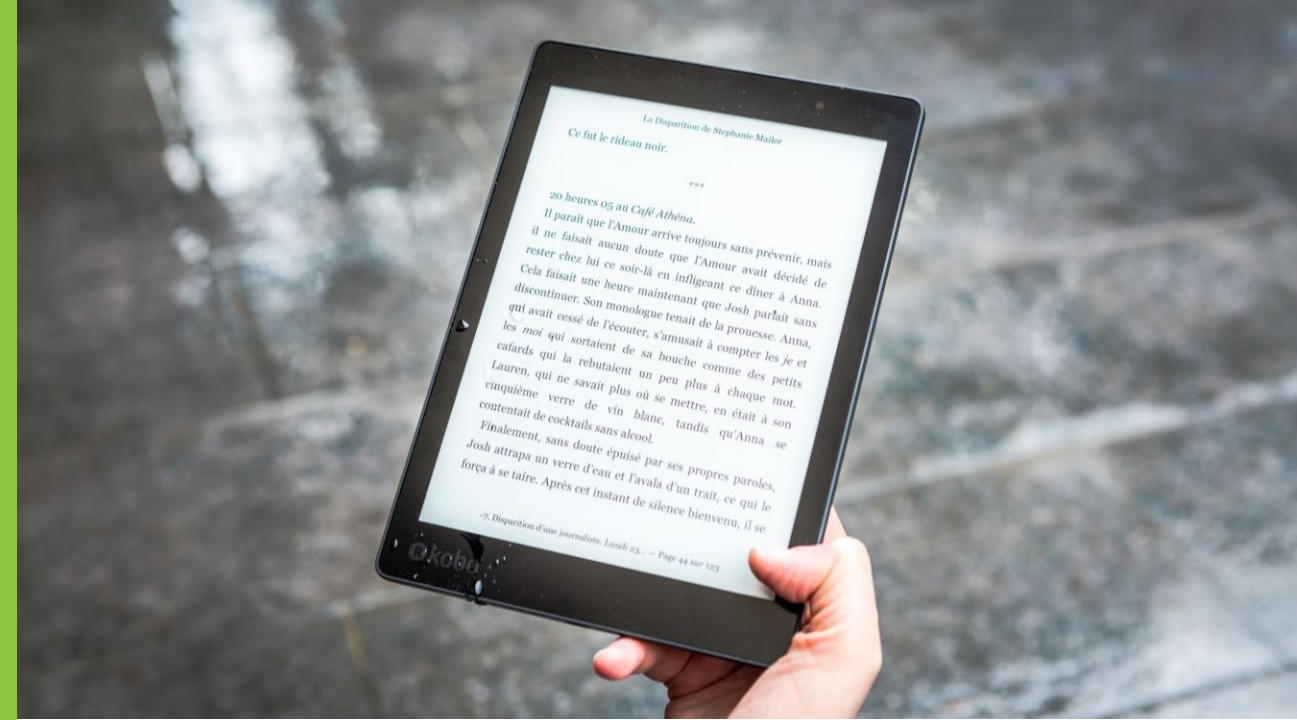
## Some examples

- **E-books and E-readers**

Digital books offer features like adjustable font sizes, text-to-speech capabilities, and customizable backgrounds, making reading more accessible for students with various needs.

- **Mind Mapping Tools**

These tools assist students in organizing their thoughts and ideas visually, which can be particularly helpful for those with executive function disorders or ADHD



# Compensatory Technologies

## Some examples

- **Audio-books and Recorders**

support students with various learning needs, particularly those who benefit from auditory learning or have reading difficulties.

Here's how you can effectively use audiobooks as compensatory technology in an educational setting

- Calculators
- Dictionaries
- And more ...





# Inclusive teaching activities

## Main features

- Teaching practices based on **enhancing the different learning and teaching styles**
- **Meaningful learning** based on problem solving
- **Cooperative and participatory** learning strategies
- **Adaptation of teaching materials**
- Development of **digital competence** of the students, especially to population groups that do not have access to technological resources



# Inclusive teaching activities

Which educational technologies can support inclusive teaching?

The categorization of technologies (inclusive, compensatory etc.) does not uniquely identify them.

The same technology can carry out multiple functions depending on how it is used

Compensatory technologies are not a separate category from educational technologies in that for the most part they can also be helpful in supporting instructional practices involving all students.



# Inclusive teaching activities

In order to appropriately choose the right **compensatory tool**, it is crucial to identify what the student's strengths are to be leveraged, because these are the ones that allow the technology to compensate for the specific disorder



# MindMeister

Let's try it...

Link	<a href="http://www.mindmeister.com">www.mindmeister.com</a>
In summary	It allows you to create mind maps. The app, which is particularly intuitive to use, allows for easy insertion of external links and attached files. The maps created can be published and shared with other users.
It could be useful for:	<ul style="list-style-type: none"><li>• Propose class or group brainstorming activities</li><li>• Explain/notate the links between the various concepts covered</li><li>• Enrich teacher and student presentations and papers</li><li>• Facilitate memorization of concepts and study</li></ul>

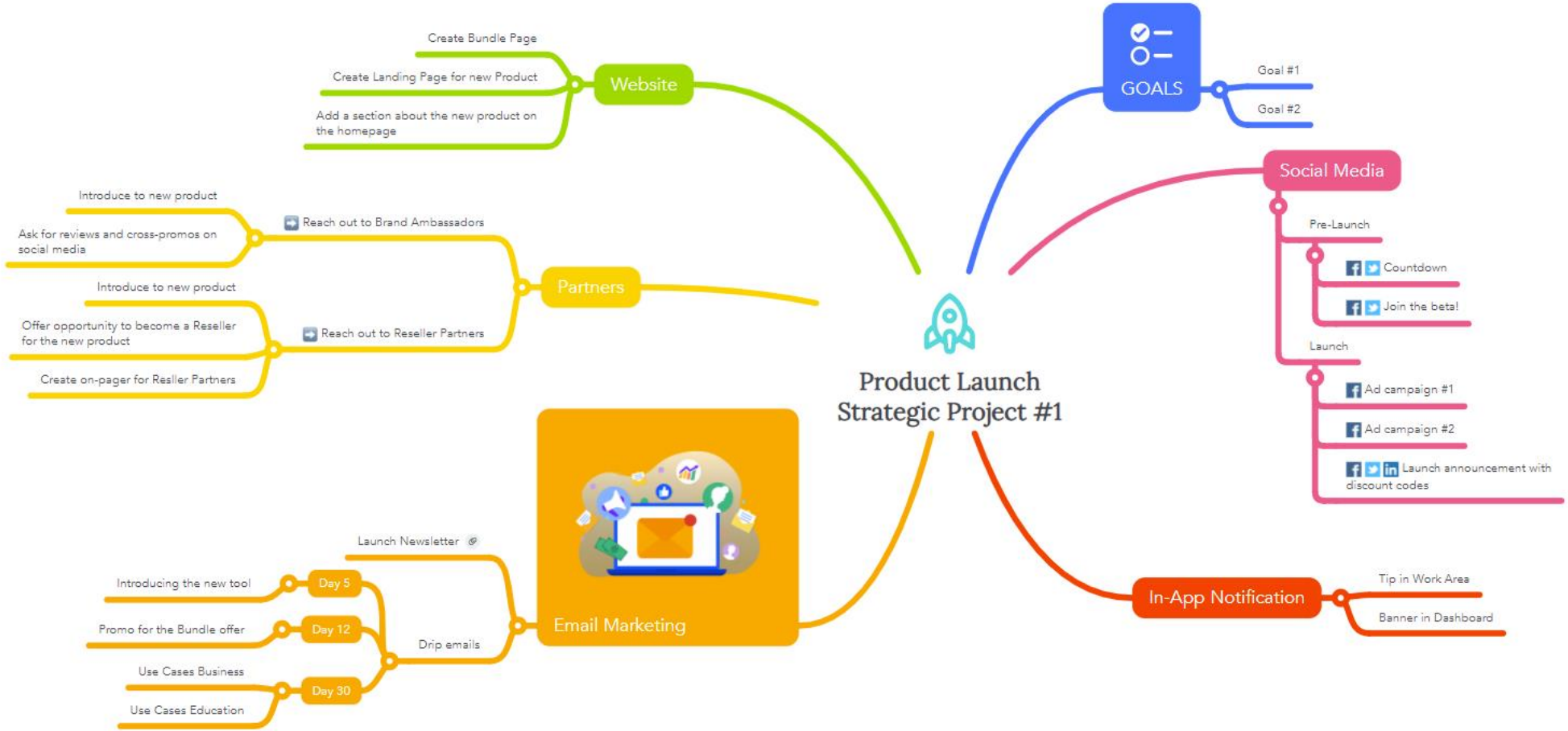


# MindMeister



<b>Account:</b>	Account required, free version allows you to create up to 3 maps
<b>Technical characteristics:</b>	<ul style="list-style-type: none"><li>• Web-based</li><li>• An app for Android and ios devices is also available, making it easy to use on mobile devices</li><li>• Maps created can be embedded within external environments with embed code</li></ul>
<b>Similar instruments</b>	<ul style="list-style-type: none"><li>• Coogle - <a href="https://coggle.it/">https://coggle.it/</a></li><li>• Mindmup - <a href="https://www.mindmup.com/">https://www.mindmup.com/</a></li><li>• Xmind - <a href="https://www.xmind.net/">https://www.xmind.net/</a> (software)</li><li>• Freemind - <a href="http://freemind.sourceforge.net/wiki/index.php/Main_Page">http://freemind.sourceforge.net/wiki/index.php/Main_Page</a> (software)</li><li>• Cmap - <a href="http://cmap.ihmc.us/">http://cmap.ihmc.us/</a> (software)</li><li>• Mindomo - <a href="https://www.mindomo.com/it/">https://www.mindomo.com/it/</a> (web-based)</li></ul>





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