Lesson Plan:
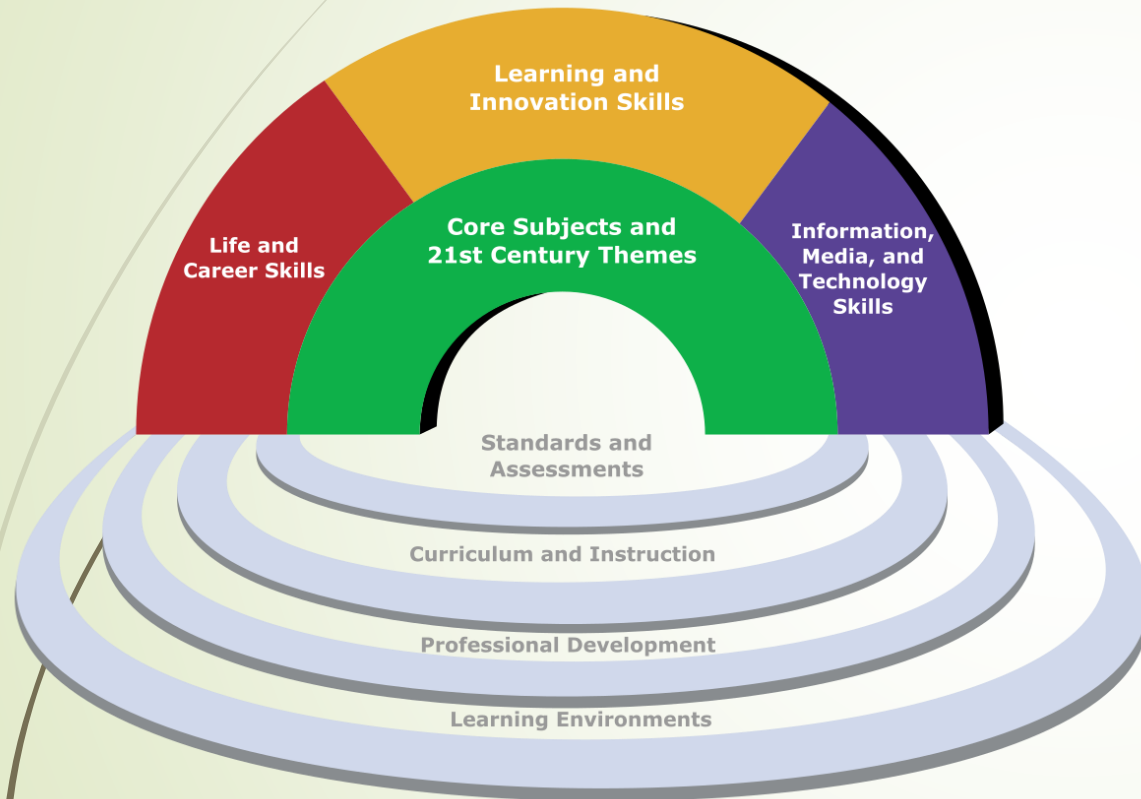# Innovative Learning in 21st Century

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What is a Lesson Plan?

A lesson plan is the instructor's road map of what students need to learn and how it will be done effectively during the class time.

Framework for 21st century learning

Framework for 21st century learning (represented by the rainbow) are:
- Learning and Innovation Skills
- Information, Media and Technology Skills
- Life and Career Skills

Students should master to succeed in work and life.

What am I teaching?

Thailand's national curriculum consists of eight core subjects — Thai language, mathematics, science, social studies, religion and culture, health and physical education, arts, careers and technology, and foreign languages.

Source: https://juliepediation.home.blog/2018/08/24/the-framework-the-soul-of-the-thai-educational-system/

How will I teach it?

Learning and innovation skills are prepared for increasingly complex life and work environments in the 21st Century. A focus on critical thinking, creativity, collaboration, and communication (4 C's).

Learning Skills

critical thinking · creativity · collaboration · communication
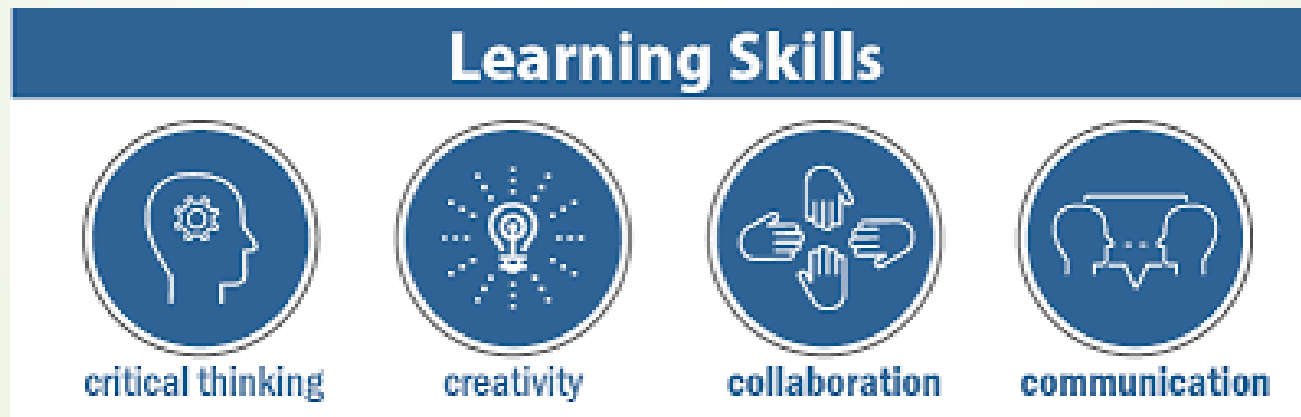
Do my students develop in critical thinking skills?

Critical thinking is the ability to examine information rationally and make a reasoned judgment based on analyzing, problem solving, and evaluation

Source: https://www.istockphoto.com/th/
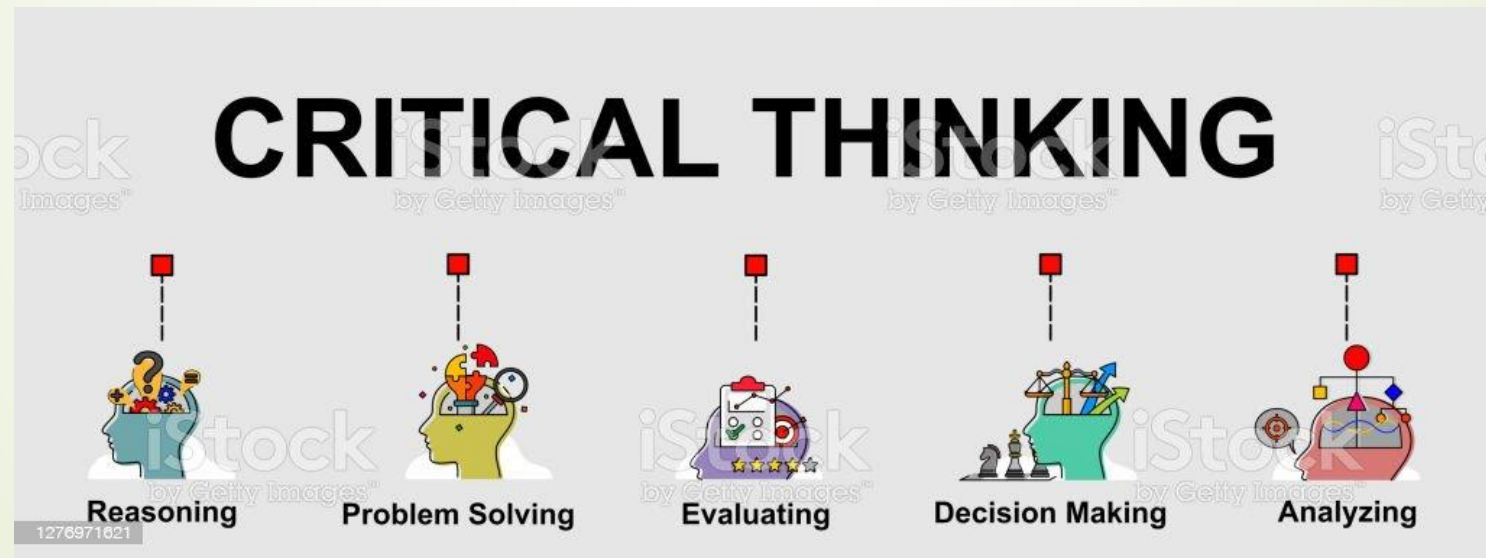
Develop Critical Thinking Skills

Suggested Activities
- Find information
- Validate information
- Synthesize information
- Leverage information
- Communicate information
- Collaborate with information
- Reflect about information
- Evaluate information

Do my students develop in creative thinking skills?

Creative thinking is the ability to approach challenges, reframe them into possibilities and come up with new, fresh and sometimes un expected ideas to solve them.

Develop Creative Thinking Skills

Suggested Activities
- Consume different kinds of content
- Create the best solutions
- Keep up with the trends
- Improvement on problem-solving
- Try to create something every day
- Focus on self-improvement
- Build a network for creativity

5. USE YOUR IMAGINATION

1. POSTPONE YOUR JUDGEMENT

4. OBSERVE

5 BASIC CREATIVE SKILLS

3. MAKE NEW CONNECTIONS

2. THINK IN ALTERNATIVES

1+1=11

bedenk
the creativity experts

Source: https://www.pinterest.com/pin/310678074266522634/

Do my students develop in collaborative skills?

Collaboration skills enable the students to successfully work toward a common goal with others. They include communicating clearly, actively listening to others, taking responsibility for mistakes, and respecting the diversity of their colleagues.

Develop Collaborative Skills

Suggested Activities:
- Give and receive feedback from peers or other team members in order to perform the task.
- Share credit for good ideas with others.
- Expand on the ideas of a peer or team member.
- Listen patiently to others in conflict situations.
- Define problems in a non-threatening manner.
- Support group decision even if not in total agreement.

Source: https://www.strath.ac.uk/professionalservices/careers/skills/peopleskills/teamworkcollaborationskills/

Do my students develop in communication skills?

Communication skills are the abilities to covey or share ideas and feelings effectively. Communication skills involve listening, speaking, and writing.

COMMUNICATION SKILLS
These skills allow you to give and receive information effectively.

1. Clarity and concision
2. Body language
3. Active listening
4. Emotional intelligence
5. Friendliness
6. Respect
7. Empathy
8. Cultural awareness
9. Confidence

The components that make up good communication skills are as follows: clarity and concision, body language, active listening, emotional intelligence, friendliness, respect, empathy, cultural awareness, and confidence.

Source: https://www.myperfectresume.com/career-center/resumes/basics/communication-skills

Develop Communication Skills

Suggested Activities:
- Practice active listening.
- Focus on nonverbal communication.
- Manage your own emotions.
- Ask for feedback.
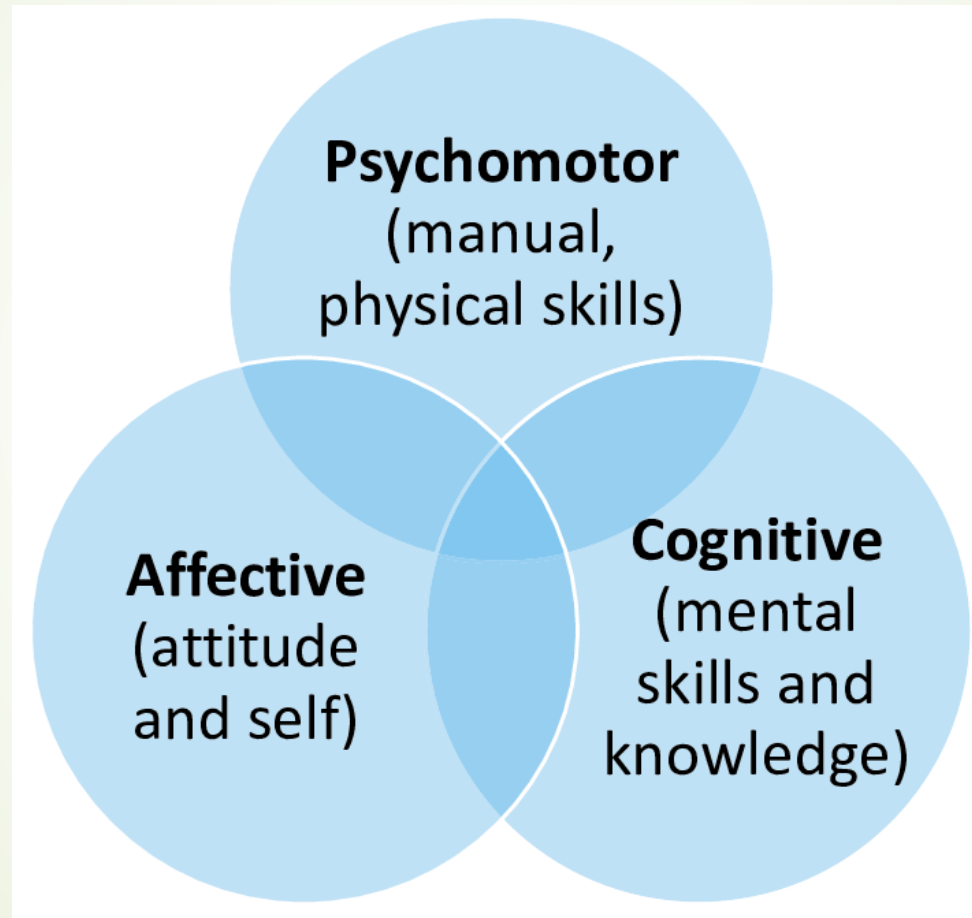- Practice public speaking.
- Develop a filter.

Source: https://www.masterclass.com/articles/how-to-improve-your-communication-skills#how-to-improve-your-communication-skills

Preparing lesson plan: Objectives

Three Domains of Learning Objectives

Cognitive Domain

Using revised Bloom's Taxonomy to write effective learning objectives consisting of 6 levels (cognitive) and using different verbs list below:

1. Remembering: list , recite, outline, define, name, match, quote, recall, identify, label, recognize.
   Example: By the end of this lesson, the student will be able to define the equilateral triangle.

2. Understanding: describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.
   Example: By the end of this lesson, the student will be able to describe the angles of the equilateral triangle.

Cognitive Domain (cont.)

3. Apply: calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.
    Example: By the end of this lesson, the student will be able to calculate the perimeter of equilateral triangle with given the length of one side.

4. Analyze: classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate.
    Example: By the end of this lesson, the student will be able to differentiate between the perimeter and the area of an equilateral triangle.

Cognitive Domain (cont.)

5. Evaluate: choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.
    Example: By the end of this lesson, the student will be able to compare the ratio of corresponding sides of the similar triangles.
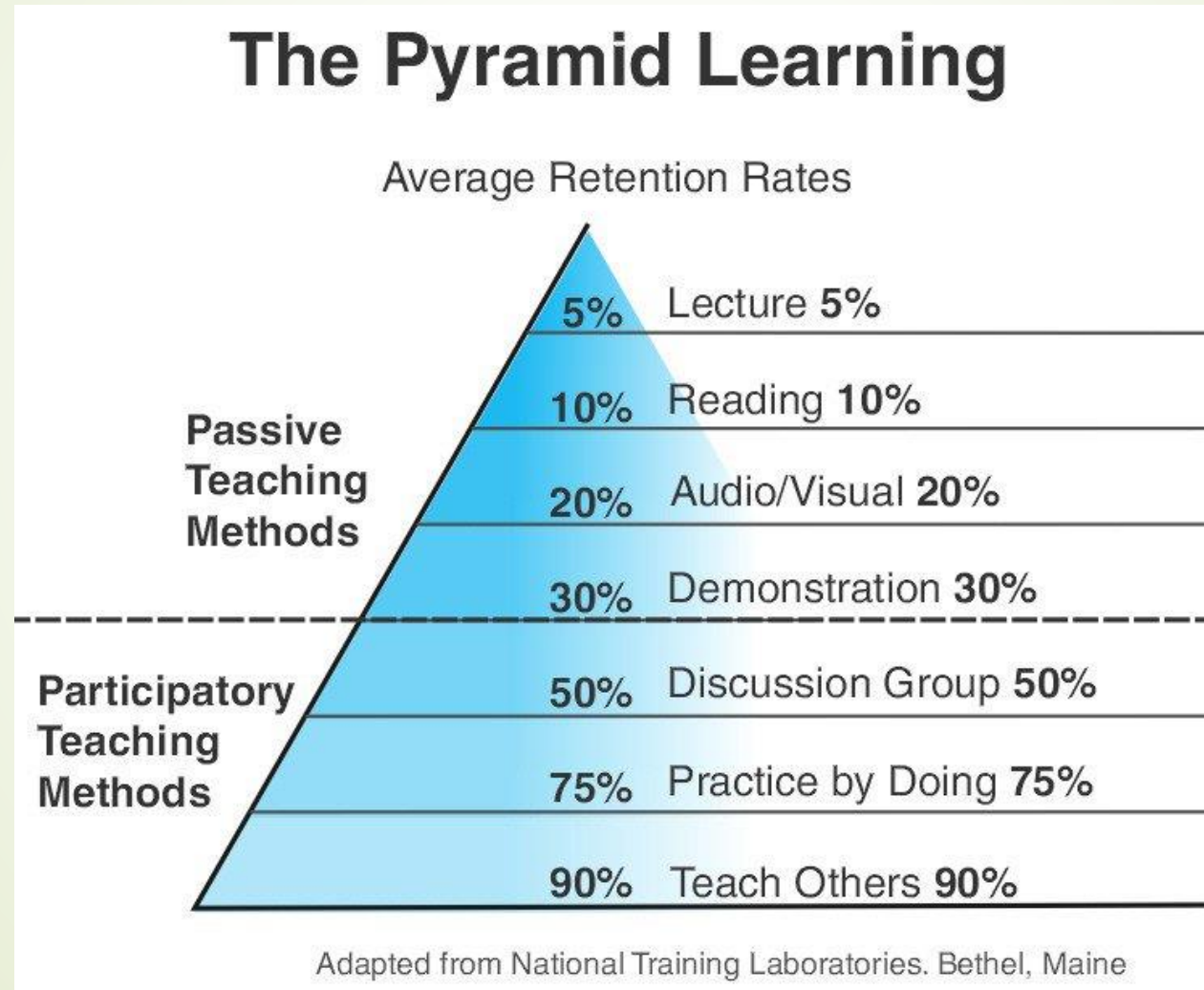
6. Create: Design, formulate, build, invent, create, compose, generate, derive, modify, develop.
    Example: By the end of this lesson, the student will be able to use three square cards and two triangle form a new shape.

Preparing lesson plan: Learning Activity

Edgar Dale's Pyramid of Learning
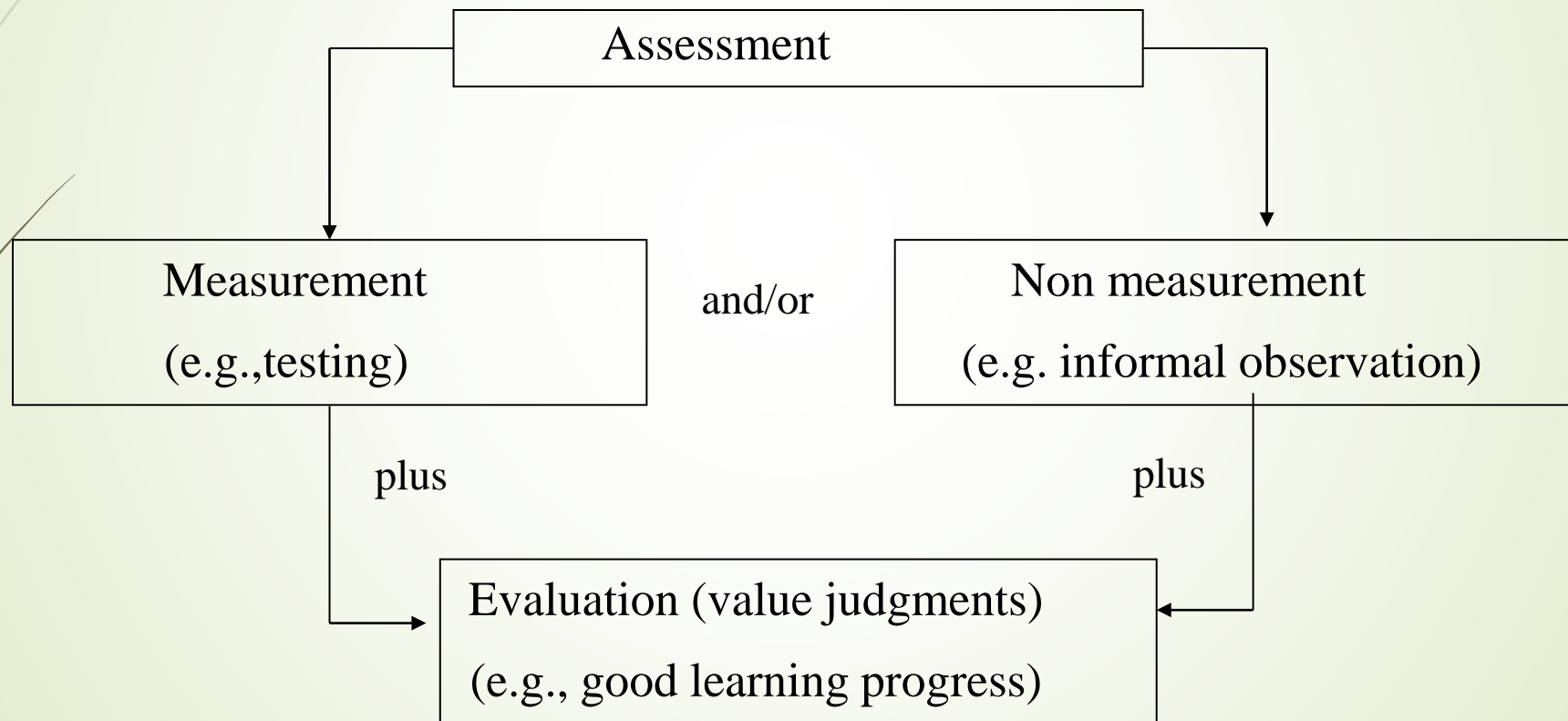
Preparing Learning Activity

According to school lesson plan template, please draw ✓ in the box □ in front the activities you prepare for your class as follows:

Students will engage in:		
□ Whole class instruction	□ Lecture	□ Computer Lab
□ Independent activities	□ Hands-on activities	□ Technology integration
□ Cooperative Learning	□ Learning station	□ Other ………………..

Preparing lesson plan: Assessment

The Assessment-Evaluation Process

```
                    ┌─────────────────────────┐
                    │       Assessment        │
                    └─────────────────────────┘
              ↓                                      ↓
┌──────────────────────┐              ┌──────────────────────────┐
│     Measurement      │    and/or    │     Non measurement      │
│                      │              │                          │
│   (e.g.,testing)     │              │ (e.g. informal observation) │
└──────────────────────┘              └──────────────────────────┘
          plus                                   plus
              ↓                        ↓
          ┌─────────────────────────────────────┐
          │   Evaluation (value judgments)      │
          │   (e.g., good learning progress)    │
          └─────────────────────────────────────┘
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Assessment

Assessment is a variety of procedures used to obtain information about student learning.

Includes: measurement and non-measurement   - paper-and-pencil tests

- authentic task

- teacher observations

- student self-report

Measurement & Non-measurement

Measurement is the assigning of numbers to the results of a test or other type of assessment according to specific rule (e.g., counting correct answer).

Non-measurement is the assigning of value of performance (e.g., rating scale).
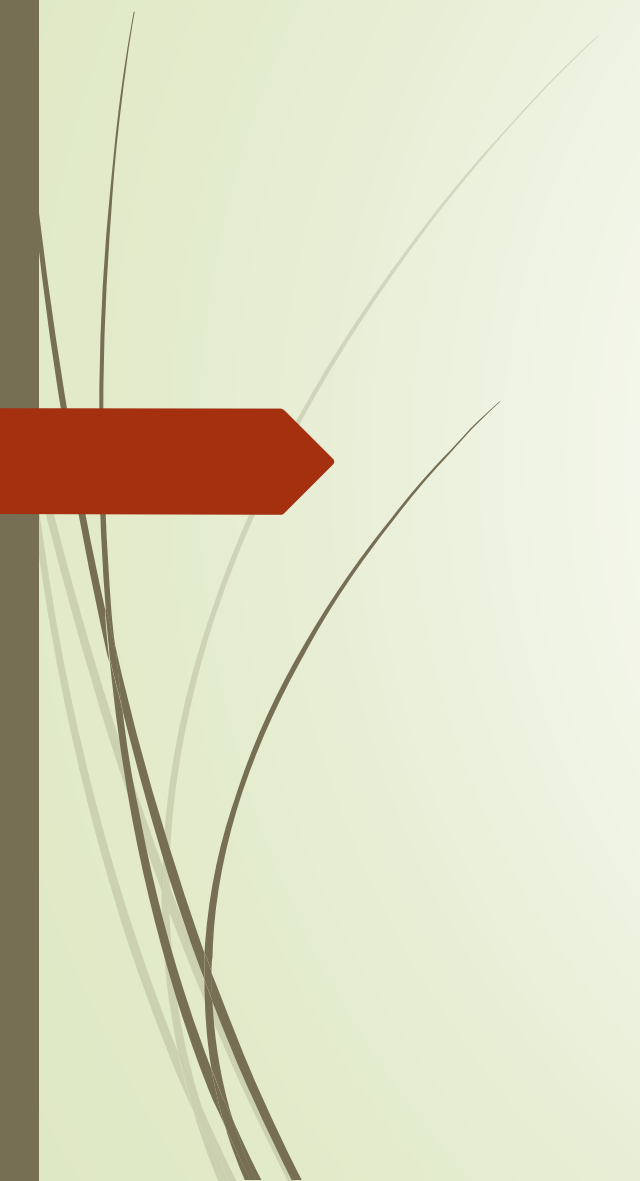
Types of Assessment
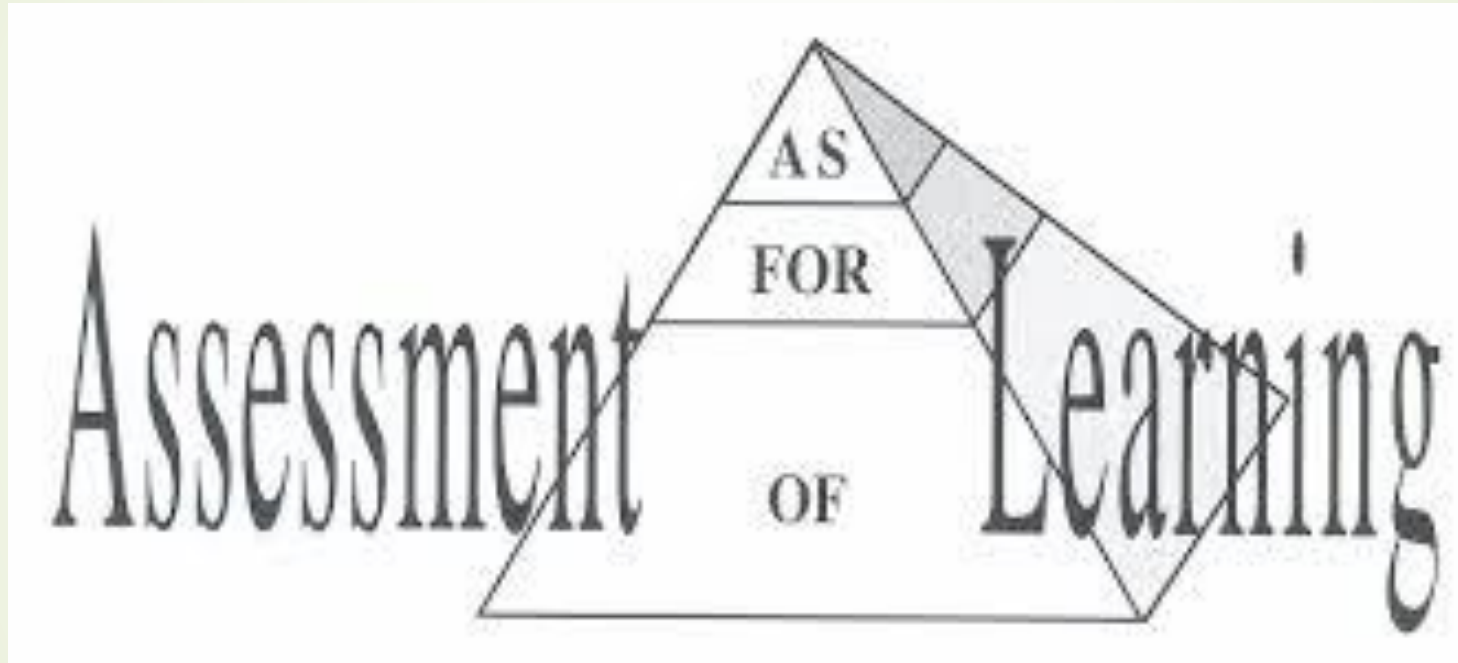
Preparing Lesson Assessment

According to school lesson plan template, please draw ✓ in the box □ in front the assessment you prepare for your class as follows:

Assessment:		
□ Observation	□ Test	□ Exercise
□Question & Answer	□ Quiz	□ Presentation

Preparing lesson plan: Materials

Innovation of Instructional Materials

Instructional materials are medias or channels that transfer knowledge, skills and experiences to learners and enable learners to learn effectively and efficiently, including printed and electronic media such as lecture notes, diagrams, shapes and geometric shapes. math programs, computers, videos, etc.

Instructional Material: Lectures

Lectures are the documents provided by the teacher used in the classroom or outside. Teachers should use them with other learning materials to create interest in learners.

Tip to Develop Lectures

- Consider the appropriate scope and coverage of the content that will be conveyed to the learners.
- Break up the content into sub-topics and logical segment, so that learners can clearly get the content efficiently.
- Invite guest speakers or have a co-lecturer to add variety.
- Integrate interaction with learners to arouse the students' attention during the lecture
- Video-recorded lectures should last between 5 and 10 minutes, as learners will be interested and can finish watching it.

Example of VDO-Recorded Lecture

Source: https://www.youtube.com/watch?v=zvDzz8cJGQQ

Instructional Material: Digital Media

Digital media encompasses audio-visual media. It is any form of media that uses electronic devices. Instructors prepare digital materials to engage learners with different senses including sight, hearing and interaction with the media. Teachers must choose media that is consistent with the content being taught. Analyze production accuracy and price.
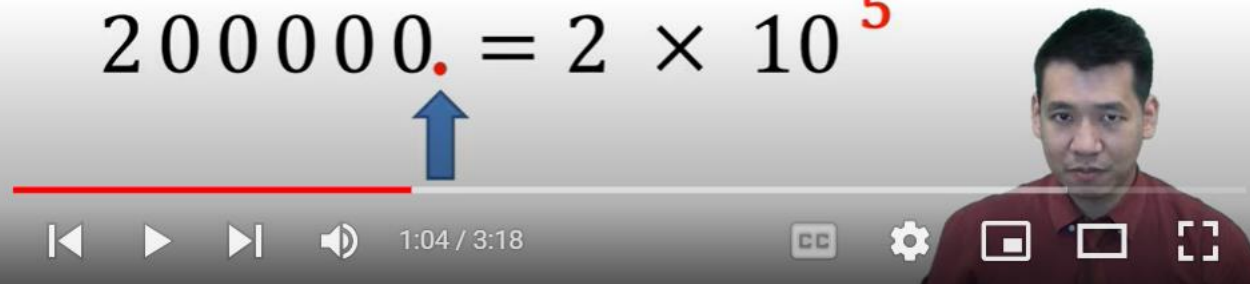
Types of Digital Media

1. Images or screen captures
2. Videos or computer screencasts to demonstrate the program operation.
3. Presentations with audio or narration
4. Video clips
5. Audio recordings of instructor explanation or podcast
6. Recording a conversation or interview.
7. Videos demonstration of real operation or laboratory
8. Videos created by learners.

Example of VDO Clips

Source: https://www.youtube.com/watch?v=tZmFDTtXhkw
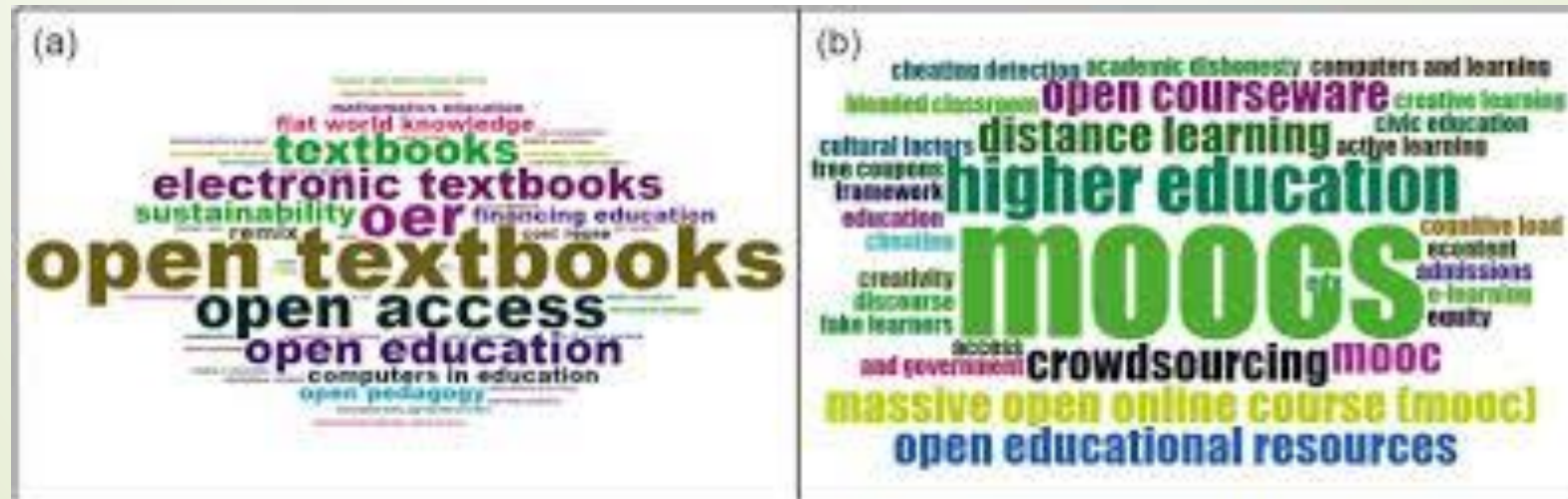
Instructional Material: Open Educational Resources

Open educational resources (OERs) are a type of instructional material created by educational professionals. OERs might take the form of lesson plans, online articles, databases, simulations, and others. OERs can be found through search engines for learning entire courses.

Instructional Material: OERs (cont.)

Suggestion for OER integration:

1. Find an OER that will support course or unit objectives.
2. Assess the quality of the OER.
3. Check the licenses for use, which may differ from source to source, for example references are required, content is not edited. or prohibited for commercial use, etc.
4. If the content is used only relevant content should be selected. and reorganized the content to match the lessons created.
5. If direct access to learning resources is required. Please explain how to access it. Some learning resources require membership. or having to open the content using a specialized program.
6. Evaluate whether such resources are effective and contributing to learning.

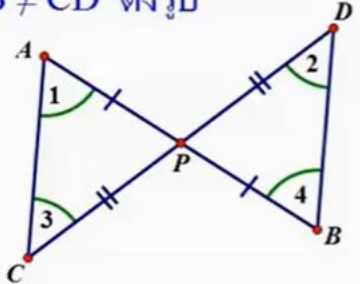Source: https://designteachengage.wisc.edu/instructional-materials-open-resources/

Example of OER: Solving Quadratic Inequality

Solving Quadratic Inequalities Using the Sign Table Method

Example of OER: Solving Geometric Problem (O-NET)

Source: https://www.youtube.com/watch?v=kbSgHjzhh9o

Preparing Materials

According to school lesson plan template, please list the materials you plan to use in your topic.

Materials:
1. ……………………..
2. ……………………..
3. ……………………..
4. ……………………..

Preparing Description of Activities/Content

According to school lesson plan template, please describe your plan to use in your topic.

Time	Activities/Contents
Beginning **10 minutes**	➢
Middle **20 minutes**	➢
End **30 minutes**	➢

Preparing Description of Summary

Summary

Lesson outcome
Students learned the following:
Problem Encountered
Suggestions