

# Chapter 1

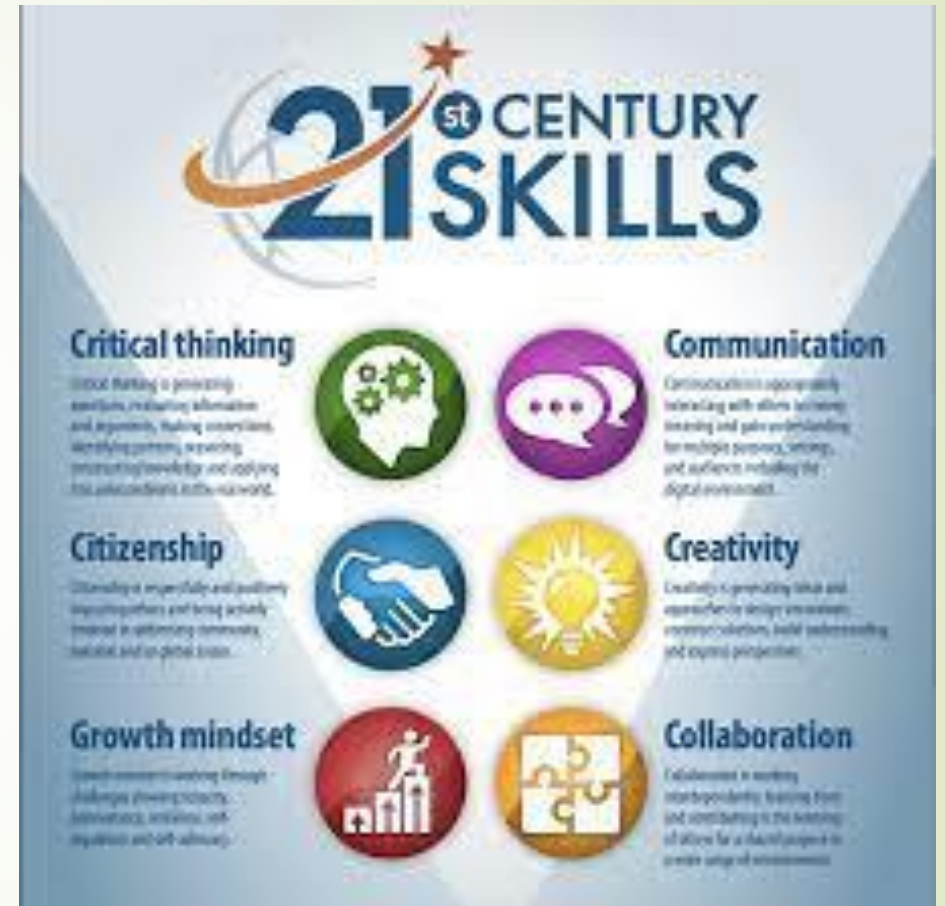
## A Framework for 21st Century Education:

### Part 1

# 21<sup>st</sup> Century Skills

21<sup>st</sup> Century Skills are considered the most important skills to succeed in today's workplace. 21<sup>st</sup> Century Skills include skills like critical thinking, communication, technology literacy, and more. Students will need to develop these skills in the classroom so they can have great careers in the future.

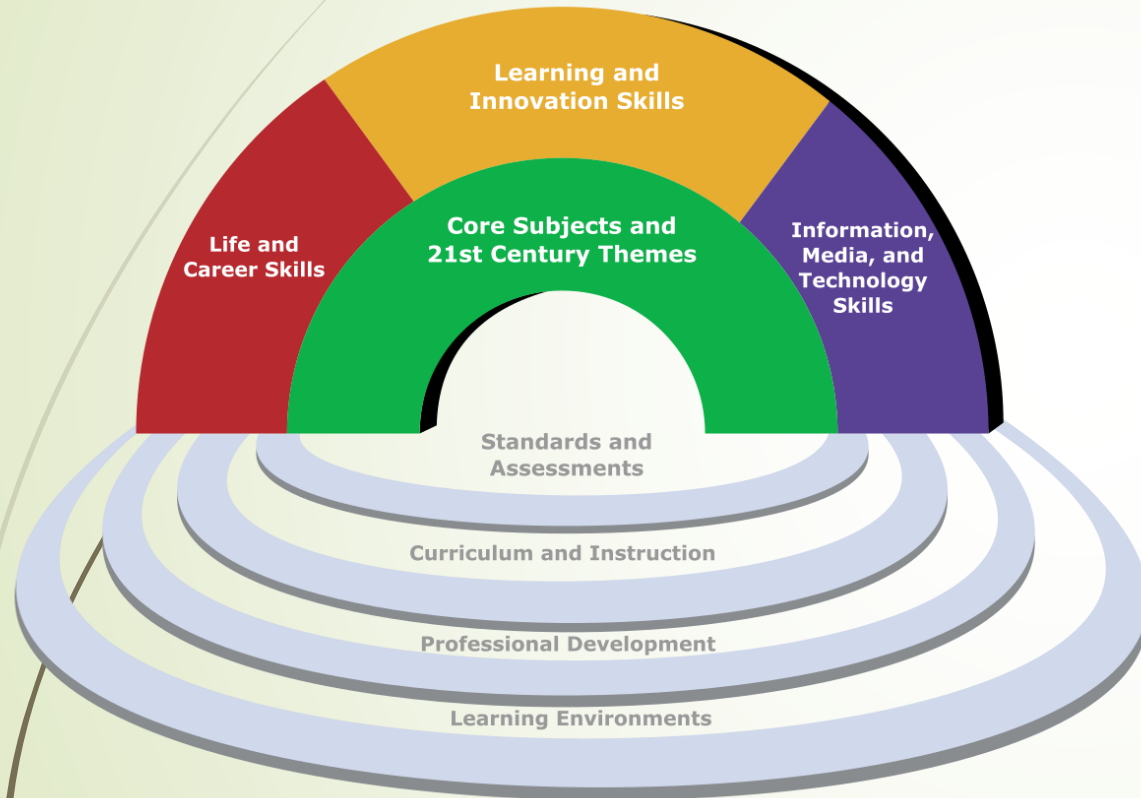
Source: <https://sphero.com/blogs/news/21st-century-skills>



Source:

<https://www.panoramaed.com/blog/comprehensive-guide-21st-century-skills>

# Framework for 21<sup>st</sup> Century Learning



“21<sup>st</sup> century student outcomes” (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.**

Source: [https://commons.wikimedia.org/wiki/File:Framework\\_for\\_21st\\_Century\\_Learning.svg](https://commons.wikimedia.org/wiki/File:Framework_for_21st_Century_Learning.svg)

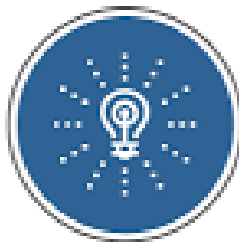
# Learning and Innovation Skills

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

## Learning Skills



critical thinking



creativity



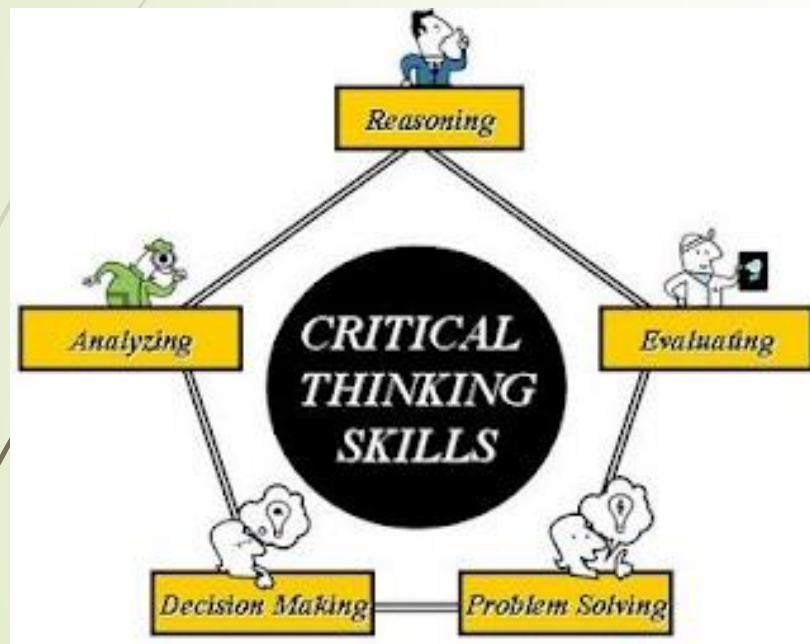
collaboration



communication

# Critical Thinking and Problem Solving

Critical thinking and problem solving refers to the ability to use knowledge, facts, and data to effectively solve problems.



Source: <http://dimurroa.wordpress.com>





# Critical Thinking and Problem Solving (cont.)

## Action in Classroom:

1. Solve different kinds of non-familiar problems in both conventional and innovative ways..
2. Interpret information and draw conclusions based on the best analysis.
3. Promote the use of a variety of methods.
4. Reflect critically on learning experiences and processes.

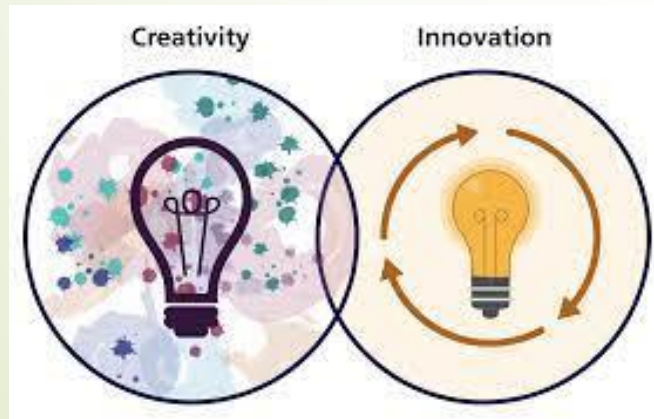


# Creativity and Innovation

**Creativity** is the characteristic of a person to generate new ideas, alternatives, solutions, and possibilities in a unique and different way.

**Innovation** is an act of application of new ideas which create some value better for the existing product.

A focus on creativity and innovation is essential to prepare students for the future. Acting on creative ideas to make a useful contribution to the domain in which the innovation occurs.



# Creativity and Innovation (cont.)

## Action in Classroom:

- Inspire students to take risks with their ideas.
- Encourage them to come up with solutions they haven't considered before.
- Give feedback on each idea and help them improve it.
- Showcase creativity as often as possible.
- Allow time each day or week for independent projects.



**Source:** <https://medium.com/teachers-on-fire/5-ways-to-encourage-students-to-be-more-creative-f6e12014e5f4>



# Collaboration and Communication Skills

**Collaboration** is the action of working with someone to produce or create something.

**Communication** is the imparting or exchanging of information or news.

Collaboration skills enable a person 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 his/her colleagues.



# Collaboration and Communication Skills (cont.)

## Action in Classroom:

- Articulating thoughts and ideas clearly and effectively through speaking and writing.
- Demonstrating the ability to work effectively with diverse teams.
- Exercising flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.
- Sharing responsibility for collaborative work.



# Information, Media and Technology Skills

**Information** is knowledge shared or obtained through study, instruction, investigation or news.

**Media** describe any channel of communication. This can include anything from printed paper to digital data, and encompasses art, news, educational content and numerous other forms of information.

**Technology** is the application of accumulated knowledge by using methods and processes to the practical purposes.



# Information, Media and Technology Skills

## Information Literacy:

- Access and evaluate information efficiently and effectively
- Use and manage information accurately and creatively
- Understand the ethical/legal issues surrounding the access and use of information

## Media Literacy:

- Search media effectively
- Cite sources correctly
- Keep up-to-date with media trends and developments
- Become a smart consumer
- Support interdisciplinary education





# Information, Media and Technology Skills (cont.)

## Technology Literacy:

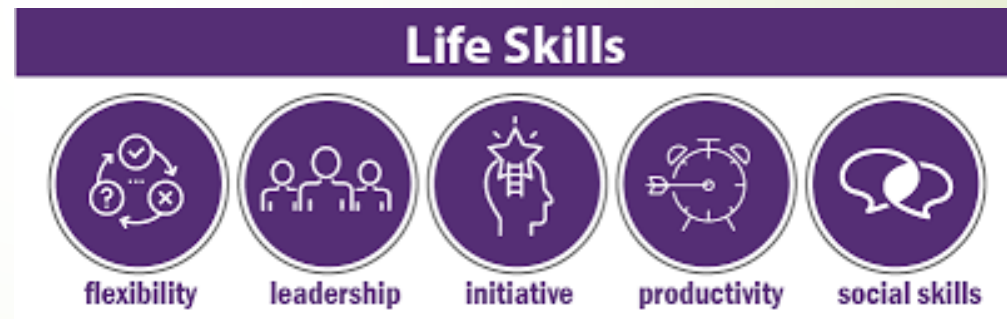
- Access, collect, manage, integrate, and evaluate information;
- Build and share knowledge;
- Develop the knowledge and skills to adapt to changing technologies;
- Endeavor to predict future needs, solve problems and innovatively create solution.



# Life and Career Skills

The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills.

- Flexibility and adaptability
- Leadership and responsibility
- Initiative and self-direction
- Productivity and accountability
- Social and cross-cultural skills

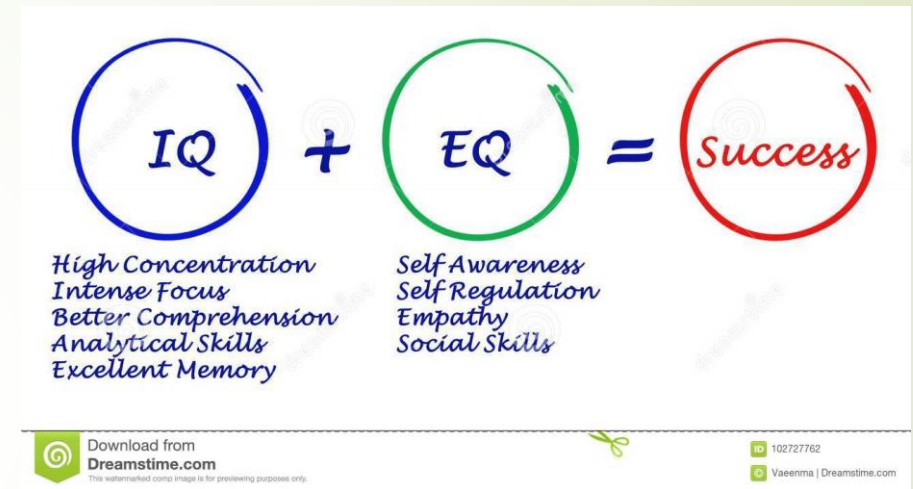


**Source:** <https://www.aeseducation.com/blog/what-are-21st-century-skills>

# Life and Career Skills

## Life and Career Literacy:

- Emotional intelligence (EQ) skills;
- Money management life skills;
- Critical thinking skills;
- Communication skills;
- etc.

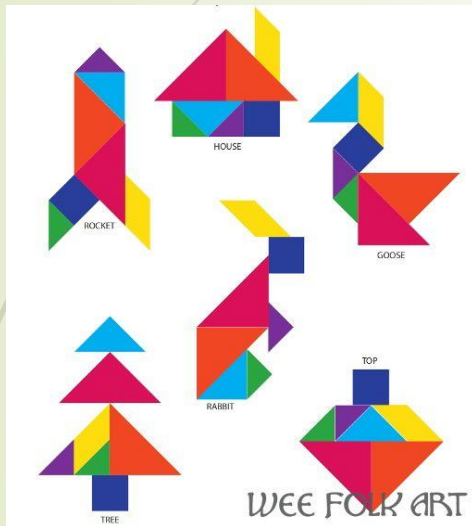


**Source:** <https://www.dreamstime.com/iq-eq-success-combining-image102727762>

**Source:** <https://www.nmrestaurants.org/financial-literacy-for-restaurants/>

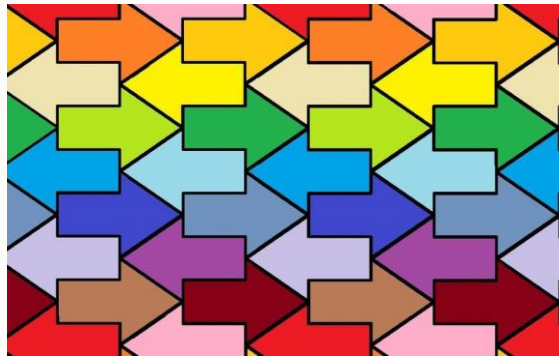
# Examples of Creativity in Mathematics

## Tangrams



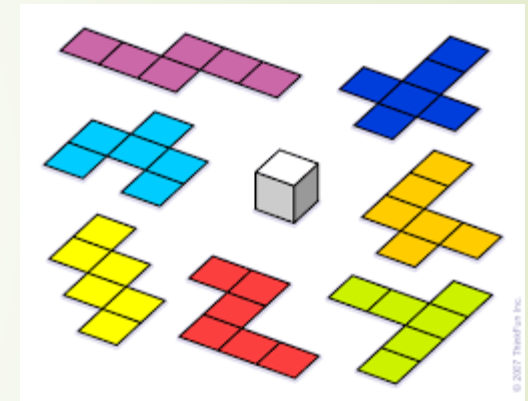
**Source:** <https://www.pinterest.com/pratyushaneti/tangram-pribtables/>

## Tessellation



**Source:** <https://www.pinterest.com/pin/54746951696587155/>

## Net for a 3D Figure



**Source:** <http://www.clipartbest.com/net-of-a-cube-template>



## Assignment

Watch on the suggested YouTube

[https://www.youtube.com/watch?v=67Bd\\_UVsfTU](https://www.youtube.com/watch?v=67Bd_UVsfTU)

Topics for submission: (via E-mail Chaweewan.ka@ssru.ac.th)

1. Title : (at 0:18/38:46) Lesson 4 .....
2. Lesson Objective: (0:18/38:46) .....
3. List of **five questions** used in the VDO

**Example:** (at 0:34/38:46) What kind of shapes do you see?



Q & A



END