

Developing Creativity thro STEM+A activities – Where and How

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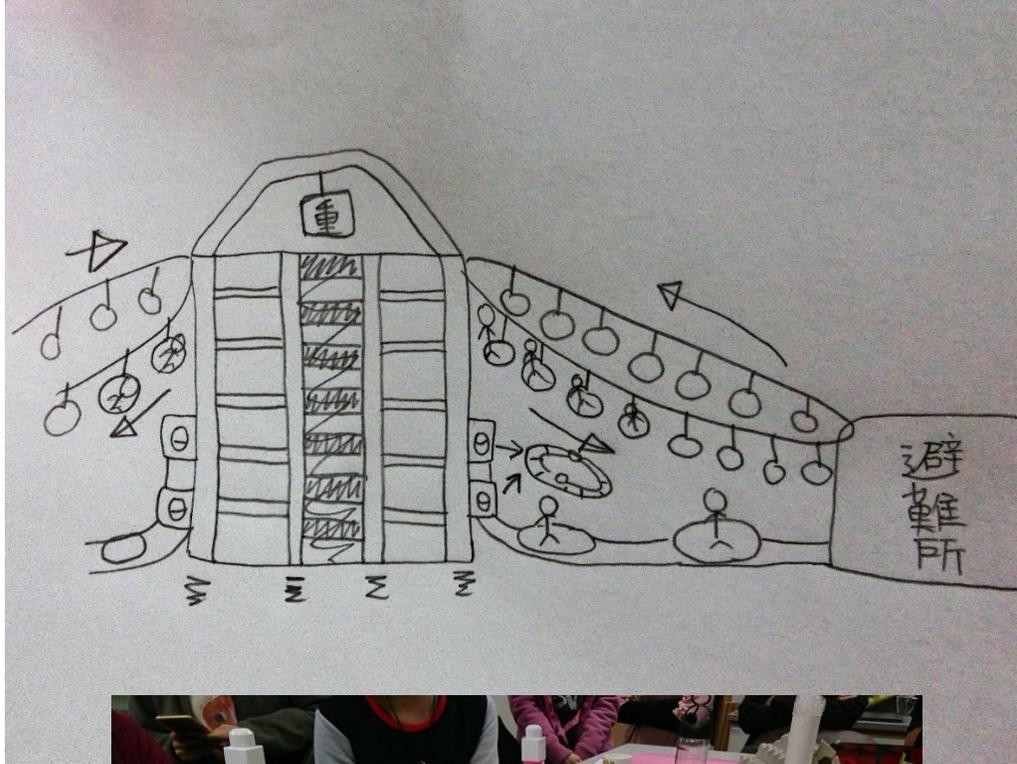
STEM+A

Science + Technology + Engineering + Math + Arts

Fostering creativity *through engineering process*

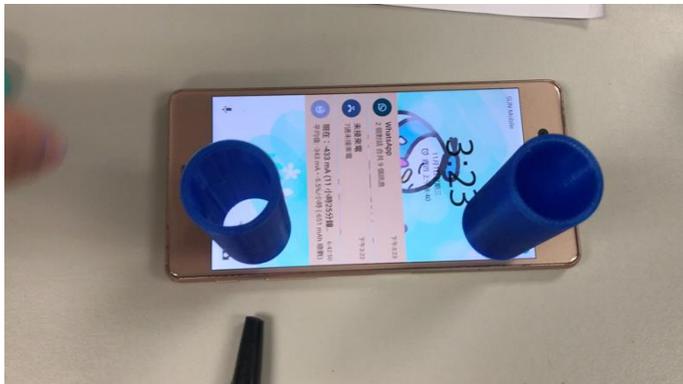


Creativity in Problem-discovery



Creativity in researching

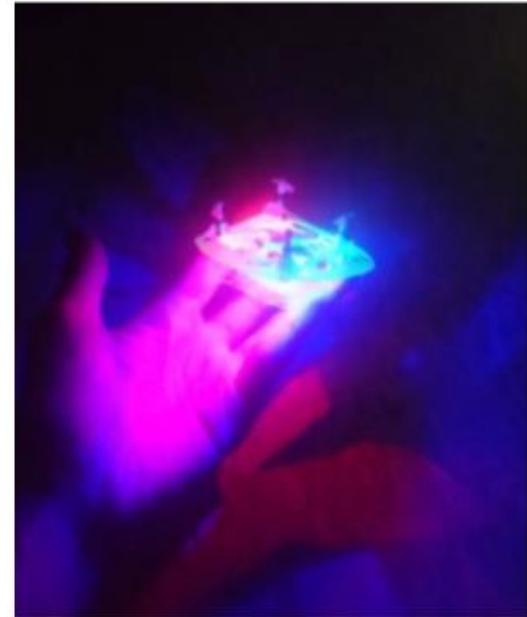
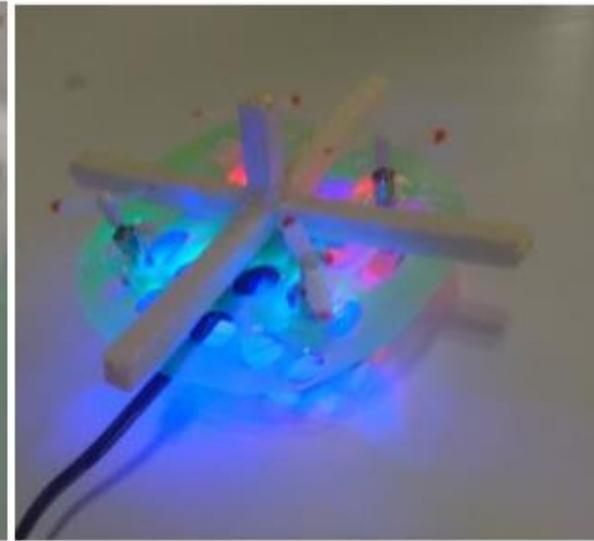
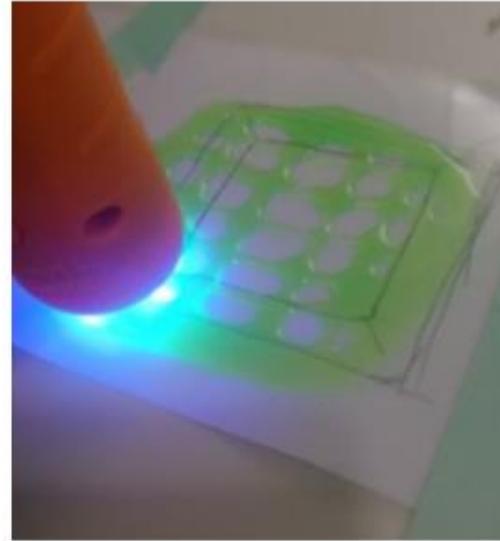
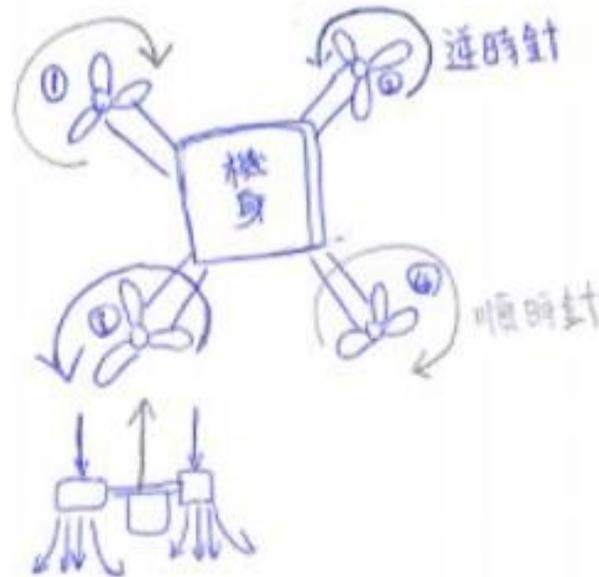
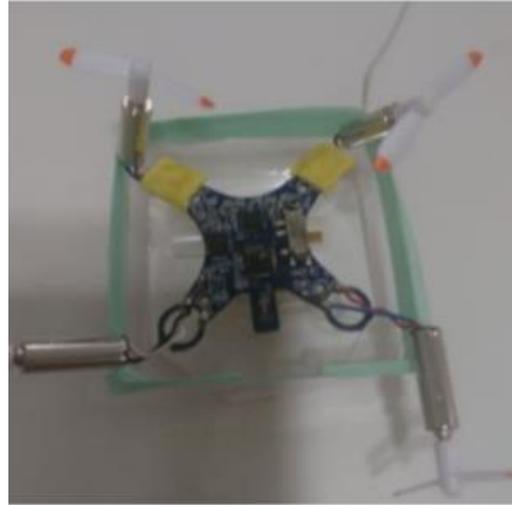
Pillars for
earthquake-proof
building



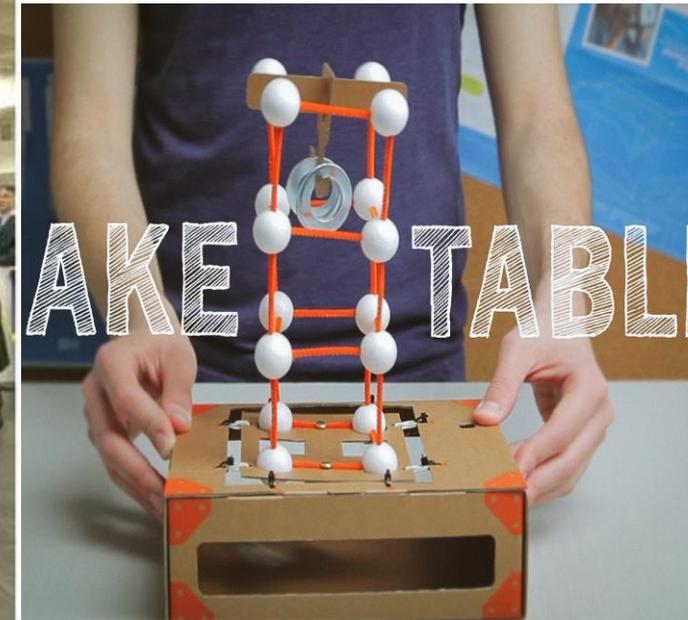
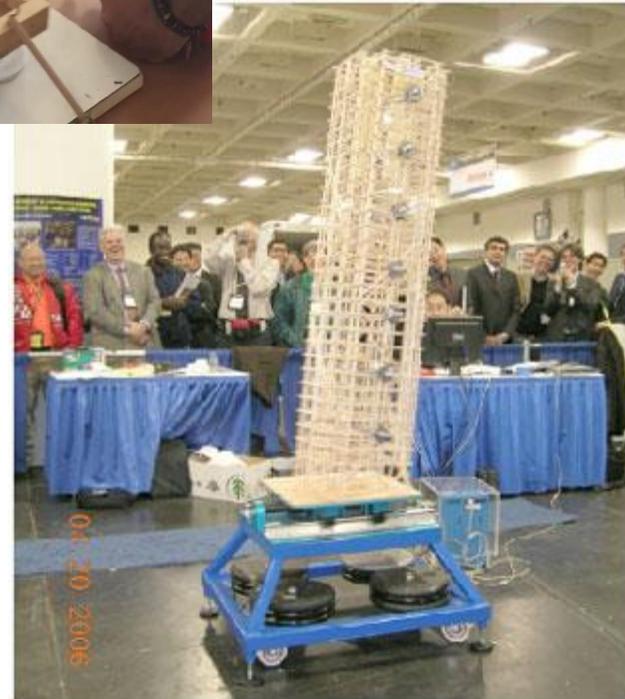
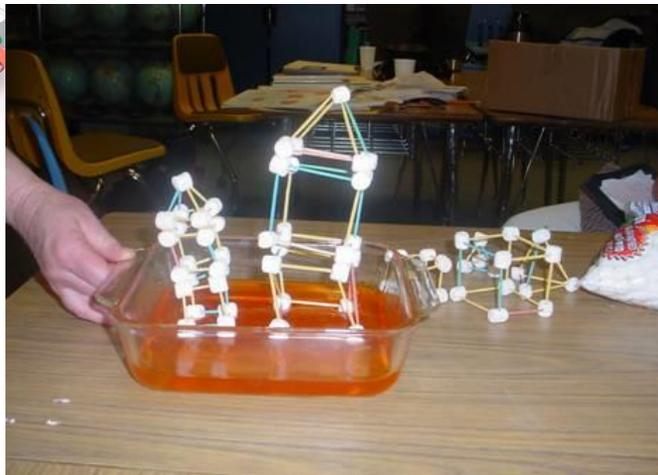
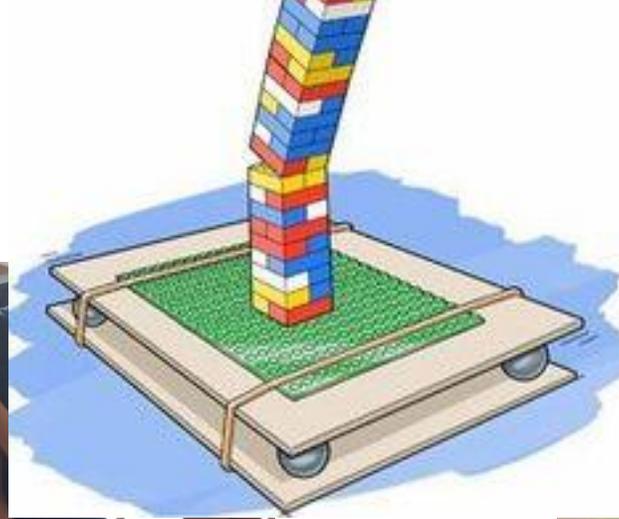
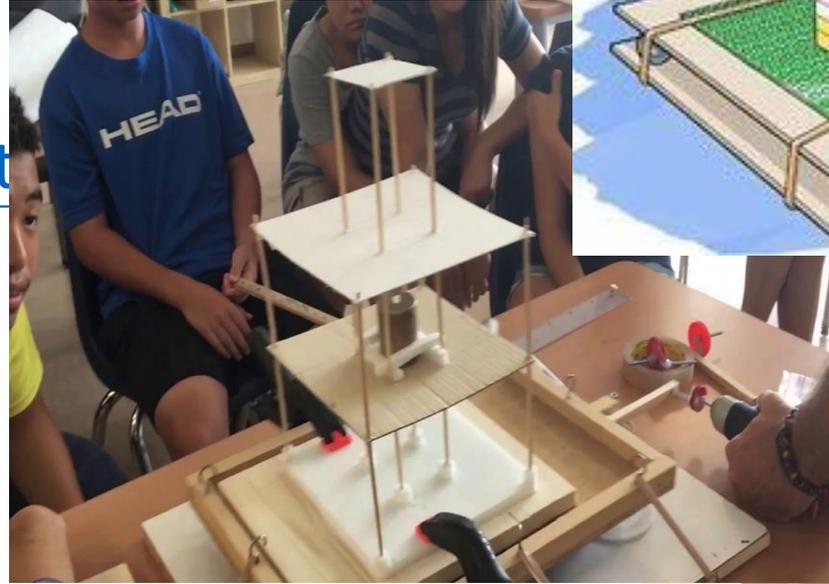
Creativity in designing



Creativity in making



Creativity in testing



Creativity in selling



The catapult can be improved as the **military usage** instead of domestic usage to **catch rat**. The catapult can be a mine for **escaping from the battlefield** or attacking the enemy, which can decrease the burden of the soldiers and protect themselves.

The original design of the vertical catapult is to **send letter** by shooting (pulling the rubber bands to provide bouncy force). In the further development, it is suggested to develop into a “**transporting robot**”, which can work as for transportation in goods or human.

The design of egg drop can be applied into the design of the shape of **spaceships**, where can be changed and **reformed** according to the environmental needs during **landing**. The shape can be changed from circular to rectangular. The design has adopted into the future space exploration as the surface of different planets may be uneven and landing can be a challenge.

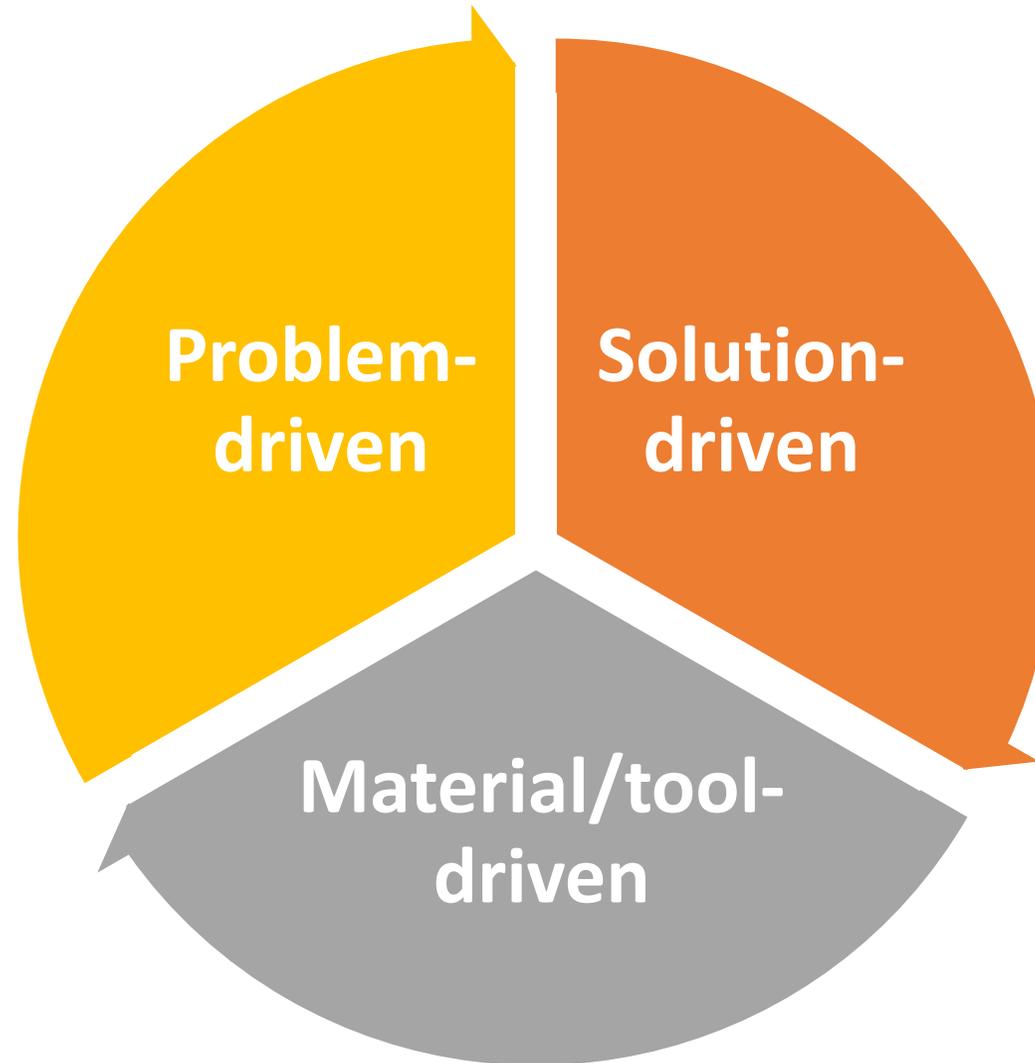
Fostering creativity *through engineering process*



Diverse STEM+A Approaches:

Design a smart home
Self-sustaining city
Egg-drop
earthquake

start from a DIY from youtube
Start from a solar cap
Droid – SCAMPER?
Biology-inspired STEM inventions:
e.g. robot around animals

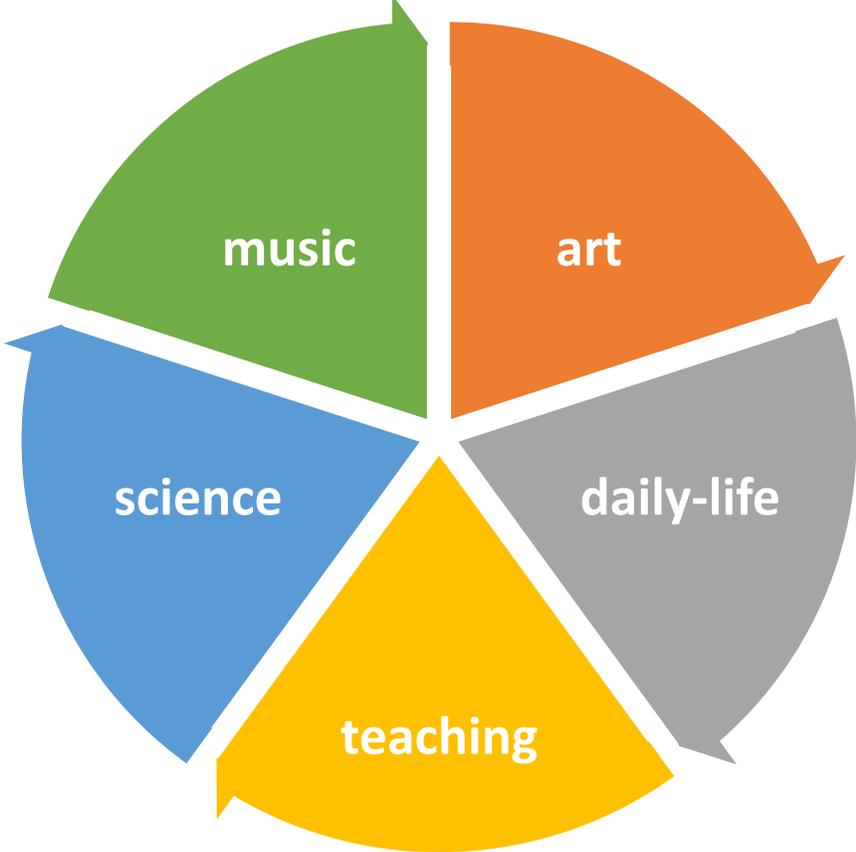


upcycling of plastic
bottles/tin cans.....
3D printing
Makey-makey
Conducting pen drawing
Littlebits

Creativity and STEM/STEAM minor

code	Course	STEM/STEAM
INS1043	Creativity and Human Development	40%;
ART2207	Nurturing Creativity through Visual Arts Activities	40%;
SCG2026	Nurturing Creativity through Science and STEM	70%;
SCG2039	Creativity and STEM for Environmental Sustainability	60%;
MUS2170	Creativity in Music	40%;
SCG3028	Creativity Development through Robotics	100%;
SCG3027	Creativity in STEM Invention	100%;
INS3034	Creativity in Teaching	40%;
INS3035	Creativity in Action	50%;

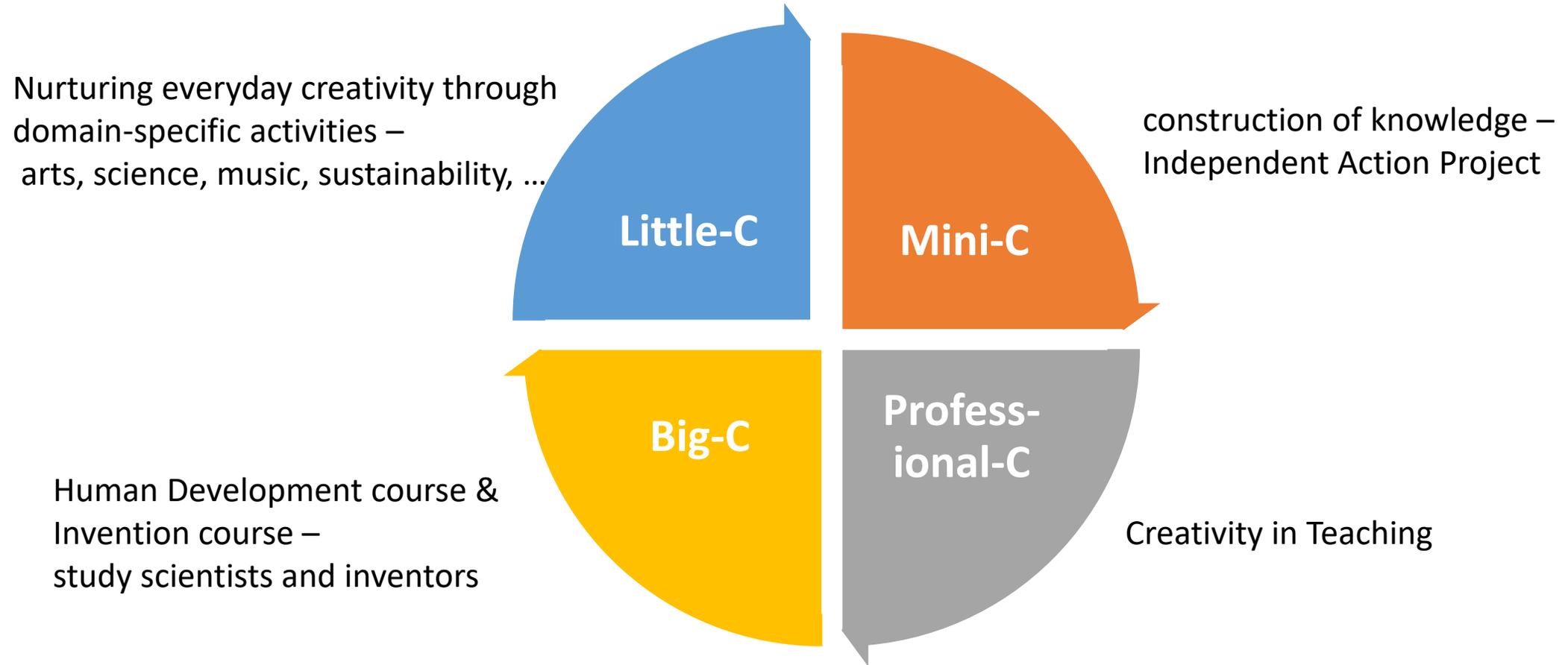
Diverse domains of the Minor



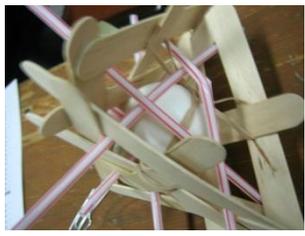
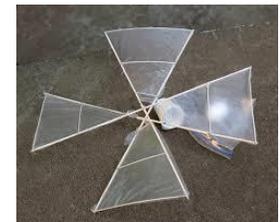
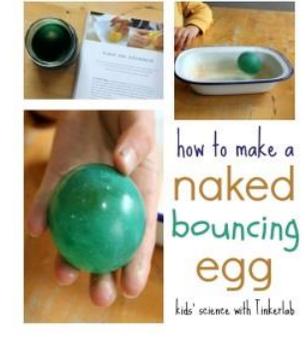
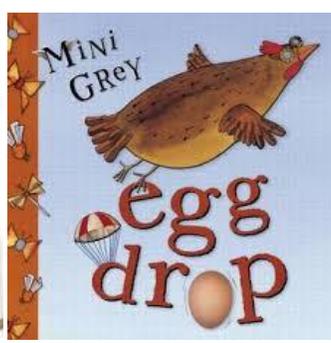
Diverse teaching style of the Minor



for diverse levels of Creativity in the Minor



What are we **in common** across this Minor?



INFINITE POSSIBILITIES

