GIoCT
Global Institute of Creative Thinking

Creative Lab

A pioneering project in Shanghai for exploring teaching creative thinking in schools

Member Schools

45 Schools

School Stage

Primary, secondary and high schools

Student Age Groups

6-18 years old

Students Engaged

10,000 +

Number of Teachers

200+

2019-2022
A Collection of Projects

Creative Lab

A creativity education initiative involving 45 schools in Shanghai, which aims to promote the importance of teaching creative thinking in schools, develop teacher capacity in creative learning strategies, and reshape teachers' understanding of assessment.

Project Description

To help young people stay competitive in a rapidly-changing world, educators across the globe have put extensive efforts into exploring how to equip students with so-called "21st-century skills", especially creativity and innovative skills so that they have the right skillset to deal with increasingly complex problems, such as climate change and sustainability.

The Creative Lab aims to explore the role and value of creativity in education whilst improving the learning and performance of young people in China. It is an initiative that was originally proposed by Professor Xiping Tao, who was a well-known educator in China, and former member of the National Education Advisory Commission. In 2019, with support from the Shanghai Municipal Education Commission and two district-level educational bureaus, as well as Shengtao Education Development and Research Institute, we partnered with 28 state schools to deliver the program, later increasing to 45 schools.

This 4-year program is a valuable and ambitious effort to support the education reform of the Shanghai government as well as the wider goal set in China's Education Modernization 2035 plan - in primary and secondary schools, China will innovate talent development methods, apply teaching and learning methods such as heuristic teaching, participatory teaching and collaborative learning as well as classroom organization methods, such as the mobile learning and course selection systems with a focus on developing student innovation and hands-on abilities. China will also vigorously promote school culture development and at the same time encourage family education and educational development in the society.

Timeline

2019 - 2022

Year 1

Explore & Learn

Initial visits and training in China and the UK were conducted to explore and learn what creativity is and how schools are doing it in K-12 schools in both countries.

Year 2

Define & Ideate

Schools analyzed their observations, own contexts and resources to set up goals and generate ideas and plans for their creative courses, supported by teacher training to enhance staff capacity.

Year 3

Design & Test

Schools designed and implemented their own creative learning programs and also synthesized efforts on the district level, proposing a top-level structure for creative learning and sharing resources.

Year 4

Reflect and Improve

Schools are reflecting on course design and collecting evidence and data on student performance to evaluate impact and make decisions on improvement measures.

Member School List

Start Year	School	School stage	Creativity Program	Learning hours (per year)
2019	East Shanghai Experimental School	Primary + Secondary School	Design a Water Purifier	10
2019	Kangcheng School	Primary + Secondary School	Shanghai Traditional Architecture	34
2019	Anting Primary School	Primary School	Auto Expo Park	10
2019	Fengbang Primary School	Primary School	Seed Creators: Exploring Life	16
2019	Experimental School Attached to Chinese Science Academy	Primary School	Inventors Assembled	48
2019	Caowang Primary School	Primary School	Farming Tools for Beginners	30
2019	Primary School Affiliated to Tongji University	Primary School	Customized Veggies: Smart Farming	8
2019	Lixi Middle School	Secondary School	Future Navigators	112
2019	Zhiyuan Middle School	Secondary School	Great Plant Discoveries	13
2019	Jiangqiao Experiment School	Secondary School	Ceramic Art	28
2019	Defu Road Middle School	Secondary School	Hexi Corridor Model Making	6
2019	Fangtai Middle School	Secondary School	Into the Community: Finding the secret of the success of Rosebud Lane	22
2019	Experimental Middle School Affiliated to Tongji University	Secondary School	People and Events in the History of Technology	18
2019	Middle School Affiliated to Shanghai Lixin University of Accounting and Finance	Secondary School	Financial Literacy: Get to Know Money	30
2019	Jincai Middle School East Campus	Secondary School	Aviation Technology	16
2019	Shangnan Middle School South Campus	Secondary School	Hanfu (Traditional Clothing of the Han Chinese)	48
2019	Tangzhen Middle School	Secondary School	A Little Theatre of Chinese Ancient Poetry	12
2019	Dongchang High School	High School	Student Company	16
2019	Beicai Senior High School Affiliated to Shanghai Maritime University	High School	Underwater Drone	12
2019	Xiangshan High School	High School	Culture and Creativity Course: City and Culture in Song and Yuan Dynasties	15
2019	Luhang High School	High School	Folk Music in the 21st Century	44
2019	Lingang No.1 Middle School	High School	Drone Programming	32
2019	Jiading No.2 High School	High School	Load-bearing of bridges and model-making	17

Member School List

Start Year	School	School stage	Creativity Program	Learning hours (per year)
2019	Jiading No.1 High School	High School	Applied Mathematics: Mathematical Modelling	30
2019	Jiading High School Affiliated to Shanghai University	High School	Colors in restaurants	30
2019	Jiading High School Affiliated to Shanghai Normal University	High School	Telling Jiading's Cultural Story: Cross-cultural Micro-film Production	36
2019	Jiading Youth Tech & Innovation Center	NA	Jiading River Conversation	8
2019	Jiading Design & Technology Educational Center	NA	Hydrogen Oxygen Energy Trolley	27
2020	Jinqiao Central Primary School	Primary School	Travel and Learn: "A Trip in Shanghai" - Alley Games	11
2020	Mingzhu Lingang Primary School	Primary School	Little Carpenter	10
2020	New-world Experimental Primary School.	Primary School	Dunhuang Watcher Volunteer Program	26
2020	Zhangjiang High-tech Experimental Elementary School	Primary School	Research on Chinese herbals: Ivy Morning Glory Show	90
2020	Jiangzhen Central Primary School	Primary School	Creative Calligraphy and Traditional Customs of Dragon Boat Festival	12
2020	Zhuqiao Primary School	Primary School	Small Citizens of Aviation Community	16
2020	Zhoupu Primary School	Primary School	Creativity Course	8
2020	Xiangshan Primary School	Primary School	Ink and water of Jiangnan	18
2020	Pushi Primary School	Primary School	Creative Writing	50
2020	Meiyuan Primary School	Primary School	Scratch: Creative Programming	12
2020	Jincai Experimental Primary School	Primary School	Ocean World	90
2020	Yangjing-Juyuan Experimental School	Primary + Secondary School	Discovering the Intangible Cultural Heritage and Traditional 24 Solar Terms	14
2020	Zhoupu Yucai School	Primary + Secondary School	Shadow Play	15
2020	Gaoqiao Town Primary School	Primary School	I Learn Finance	30
2020	Shanghai Sanlin Middle School	Secondary School	Dragon Dance	80
2020	Beicai Middle School	Secondary School	Design A Travel Guide Book	11

Key Figures

Duration
2019 – 2022

Member Schools
45 Schools

Region
Pudong New Area & Jiading District

School Stage
17 primary schools
12 middle schools
4 middle and high schools
9 high schools
2 district-level learning centres

Number of Teachers
200+

Student Age Groups
6-18 years old

Students engaged
10,000 +

Total Learning hours
1220 + per year

Our support

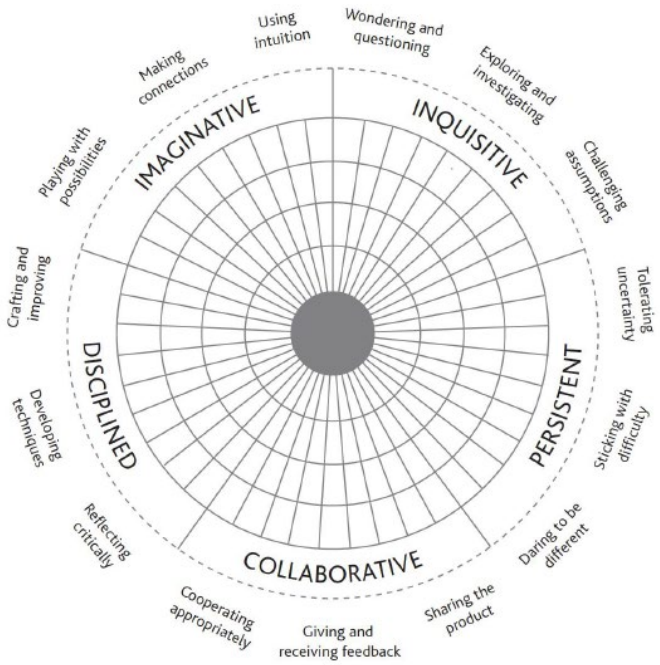
Across all the schools in the Creative Lab project, our work draws on Bill Lucas's creativity model and the PISA 2021 creative thinking framework widely practiced in the United Kingdom, the United States, Australia, and beyond.

According to the background, curriculum, educational goals and staff capacity of each school, GIoCT provides highly customized case study support, where we select appropriate theoretical models, approaches and implementation pathways to help schools build up their creative thinking capacity. We encourage Creative Lab member schools to leverage on their own strengths as well as resources from local communities and industries. GIoCT provides support in the following areas.

- Curriculum (re)design
- Interdisciplinary learning
- Pedagogies
- Co-creation
- Learning plan formations
- Creative thinking assessment
- Professional development related to creative thinking

Key Literature

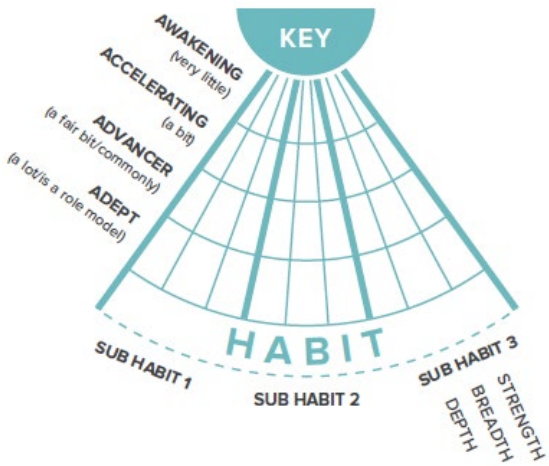
In 2012, with colleagues at the Centre for Real-World Learning (CRL) and supported by Creativity, Culture and Education, Professor Bill Lucas developed a five-dimensional model of creativity and illustrated some ways in which the progress of young people's creativity could be tracked (Lucas et al., 2013). This model is used by the Creative Lab schools as a key reference to design teaching and reshape assessment.



The CRL five-dimensional model of creativity (Lucas et al., 2013)

The growth of creative thinking skills considering each sub-habit in terms of strength, breadth and depth:

- **Strength** is a measure of the level of independence demonstrated by students in terms of their need for teacher prompts or scaffolding, or their need for favorable conditions.
- **Breadth** is an indication of the tendency of students to exercise creative dispositions in new contexts, or in a new domain.
- **Depth** describes the level of sophistication displayed and the extent to which application of dispositions was appropriate to the occasion.



Underwater Drone

Beicai Senior High School Affiliated to Maritime University

The underwater drone program focuses on project-based learning to develop subject knowledge and hands-on abilities and inspire students to explore deep-sea technology, manned submersibles, seabed resource surveys, and scientific research.

Subjects
Physics
Mathematics
Design & Technology
Computer Science

Age group
15-17 years old

Learning hours
12 hours per school year

Aviation Technology

Jincai Middle School East Campus

Students explore the fun and mystery of aviation technology through a total of 16 teaching hours over one academic year. In the course, students learn about mathematical application and the controlled variable method, explore lift force of paper planes, design airplanes, make models, and conduct experiments with powered paper planes.

Subjects

Physics, Mathematics, Chinese, History, Geography, and Art

Age group

12-13 years old

Learning hours

16 hours per school year

Little Carpenter

Minzhu Lingang Primary School

A great number of wild birds have been wintering on the east beach of Lingang in recent years with a peak number of Anseriformes observed at the east beach on a single day close to 60,000. The Little Carpenter course invites pupils to investigate bird habits, conduct research, and ultimately build bird feeders and bird houses. The course aims to improve student creativity, collaboration, and hands-on abilities through active and cross-disciplinary learning.

Subjects

Mathematics, Biology, Ecology, Design Technology, and Art

Age group

10-11 years old

Learning hours

14 hours per school year

Chinese Herbs

Zhangjiang High-tech Primary School

"Recently, the ivy plants grown by the students all had the same problem. The stems were so soft that they drooped down, as if they were sick. "How to bring ivy plants back to life and help them grow healthy?" If you can solve this problem and make your plant the most healthy and stylish, it may be displayed in the school hall and become part of the beautiful landscape on campus." This is a project-based learning experience for students to analyze, imagine, summarize, communicate, collaborate, and present.

Subjects

Natural Science, Design Technology, Art, and Chinese

Age group

9-10 years old

Learning hours

90 hours per school year

The *Hanfu Course*

South Campus of Shanghai Shangnan Middle School

Hanfu, a traditional clothing of the Chinese Han dating back thousands of years ago, is an important part of our heritage. As the garment starts to make a comeback in the society in recent years, our Hanfu course takes the opportunity to development the passion, knowledge, creativity and confidence of students. By exploring the history, making origami, and coming up with their own original design, students are encouraged to become more inquisitive, imaginative, and collaborative and also learn to appreciate inclusiveness and openness.

Subjects
Art
History
Chinese Language and Literature

Age group
12-14 years old

Learning hours
48 hours per school year

Customized Vegetable

Primary School Affiliated to Tongji University

Customized Vegetables is a creative program for all where pupils create a small farm of their own through research, practice and hands-on work. The course, making full use of the "one-square-meter vegetable garden" on campus, takes into account the inquisitiveness and passion for hands-on activities of the young children at elementary school, allowing them to learn about everyday phenomena through physical activities and working on their own creations.

Subjects
Science
Mathematics
Design Technology
Art

Age group
10-11 years old

Learning hours
8 hours per school year

Into the Community: Finding the secret of the success of Rosebud Lane

Fangtai Middle School

The Rosebud Lane project is a real-world learning journey for students that encourage them to go into the local community. The course is part of the school's creative program that takes advantage of the beautiful "Rosebud Lane" of Lu Xiang, a place discovered by students during their community services in summer holidays. The course aims to enhance hands-on abilities and creativity of middle school students, guiding them to learn and apply multidisciplinary knowledge, think divergently, and creatively solve problems in the society.

Subjects
Interdisciplinary Learning
Chinese Literature, Art and Social Studies

Age group
13-15 years old

Learning hours
22 hours per school year

Hexi Corridor Model Making

Defu Road Middle School

The course promotes creative learning by selecting Gansu Province, a place of strategic importance on the "Belt and Road" initiative, as the background and encourging students to get to know the historical Hexi Corridor and practice hands-on skills. The interdisciplinary learning combines history, geography, design technology and information technology, where students explore the past and present of the "Hexi Corridor" area, build models of the corridor in different periods back in history, and apply modern technology in the design and building process. The course emphasizes on hands-on experience, creativity, and collaboration.

Subjects
History
Geography
Design Technology
Information Technology

Age group
13-14 years old

Learning hours
6 hours per school year

Applied Mathematics: Mathematical Modelling

Jiading No.1 High School

Applied mathematics helps to build a bridge between mathematics and life. The purpose of developing knowledge and skills in applied mathematics among middle school students is to enable them to practically apply the knowledge learned, encourage innovation, and dare to solve social and scientific problems they would encounter in their lives. Mathematical modeling is a fundamental link in mathematics from the abstraction of the real world to a subject about the relationship between quantity and space, integrating core skills that help people to solve real-world problems. In this context, this course encourages students to build connection between mathematics and life and become inquisitive learners and creative problem-solvers.

Subjects
Mathematics & Computer Science

Learning hours
30 hours per school year

Age group
15-17 years old

Auto Expo Park

Anting Primary School

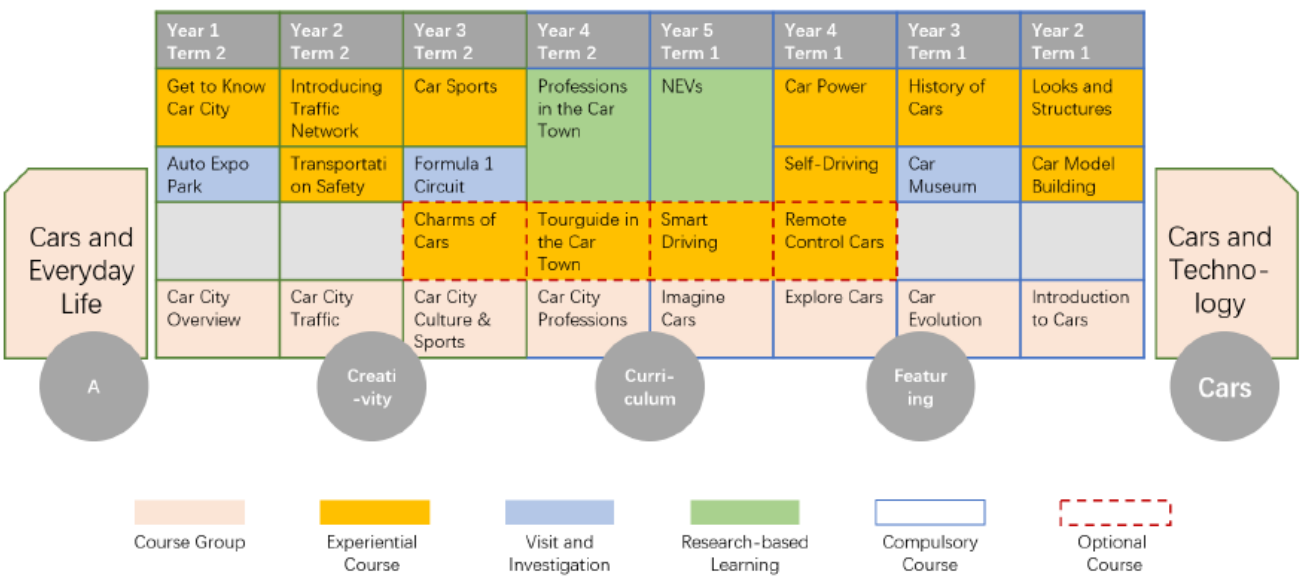
This course adopts project-based learning (PBL) to combine practice with extensive inquiry-led learning, driven by the actual problems in the auto expo park. By carrying out learning and hands-on activities on cars and everyday life, pupils try to respond to challenges proposed within the project. The course also integrates roleplay of professions, such as travel masters, planners and tour guides which help young children to learn knowledge, make friends, broaden horizons, and find their passion for learning. Skills such as creative thinking, collaboration, and inquisitiveness are strongly emphasized in learning.

Subjects
Literacy, math, and D.T.

Age group
8-9 years old

Learning focus
Inquisitive, imaginative, collaborative, hands-on skills

Learning hours
10 hours per school year



A school level curriculum example: Anting Primary School and its Car City curriculum

GIoCT
Global Institute of Creative Thinking

Get into touch

Those are just some examples of pilot projects of the Creative Lab initiative between 2019 and 2022.

If you want to know more about this project or receive support from GIoCT to carry out a similar project on promoting creativity in your school curriculum, developing new or ongoing projects, or organizing teacher training, we would love to hear from you.

Contact Information

GIoCT Headquarters Office

12 John Princes Street

London W1G 0JR

United Kingdom

info@gioct.org