

Collaborative Research and Development (“Seed”) Project 2021/22

NT0821

Developing Students’ Creativity, Collaboration and Problem Solving Skills through Creating the Makerspace in the Secondary English Language Classroom

Native-speaking English Teacher Section, Education Bureau



“The world doesn’t need more graduates with good grades. What the world needs is voracious, self-directed learners with the creative capacity to see the problems of the world as puzzles, and the tenacity to work on them, even in the face of adversity.”

Gever TULLEY, founder of Brightworks School, a San Francisco school that focuses on hands-on education

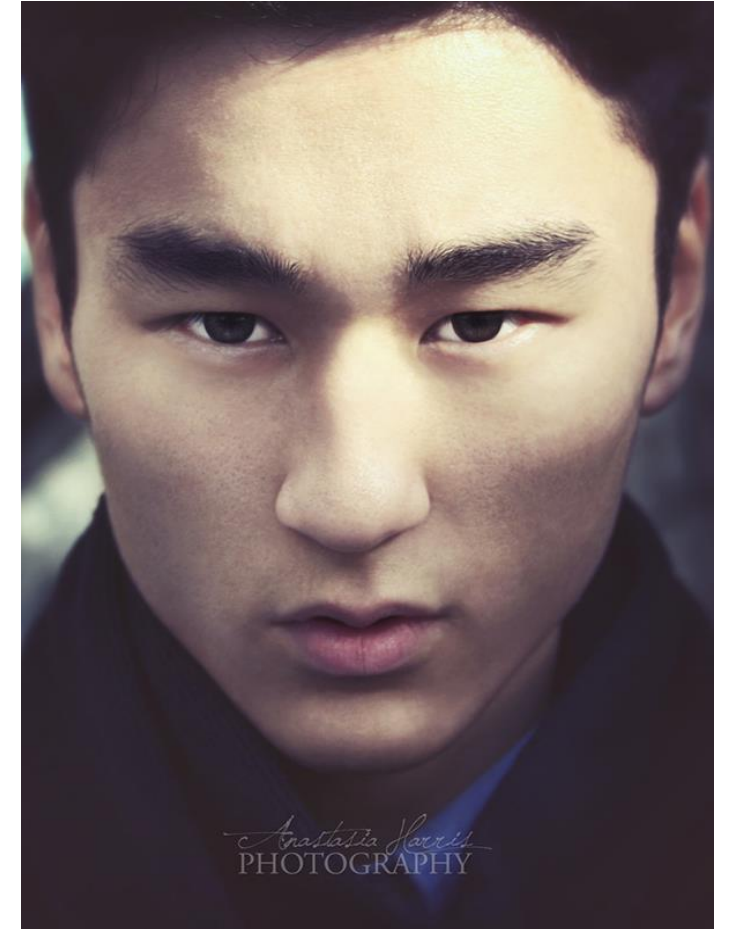
What is a

MAKER?

Examples of the Maker in You and Me



Interior Design



Fashion and Makeup



Personal Accessories



A Maker is Someone
who Engages in **the Act of Making**.

Makerspace is...

**Human-
centred**

Inquiry-based

**Innovation-
friendly**

**Transdiscipli-
nary**

Creative

**Empathetic
insights**

Radical ideas

**Tangible
outcomes**

Courageous

Collaborative

**Meaningful
changes**

**Solution-
oriented**

Project Focuses



Choice

Intention

Action



MAKERSPACE

Design Thinking



Parts Purposes Complexities

Empathy: Think
Feel Care



Parts People Interactions

Tinkering:
Imagine if...

Thinking Routines





Choice

Choose to do it

Intention

Want to do it

Action

Do it

Design Thinking



EMPATHIZE



DEFINE



IDEATE



PROTOTYPE



TEST

Thinking Routines to Support Learning in a Makerspace

Parts Purposes Complexities

Parts People Interaction

Empathy: Think Feel Care

Tinkering: Imagine if...



Students work together, with or without guidance, to identify problems, brainstorm solutions, evaluate them and action them in their Makerspace journey.

**How can the English Language
Classroom become a Makerspace?**

Meaningful and purposeful communication in English

Applying language knowledge and skills to exercise one's creativity, collaborate with others and solve problems



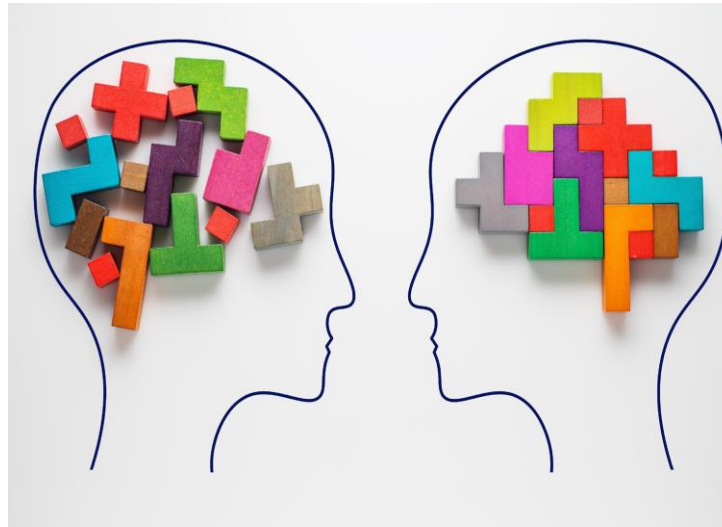
Using language to facilitate the application of thinking routines

The Maker tools in the English language
classroom are made up of...



Language

Parts Purposes
Complexities



Parts People
Interactions

Empathy: Think
Feel Care

Tinkering:
Imagine if...

Thinking Routines

Project Objectives

This project aims to develop teachers' capacity to:

explore **the place of maker-related skills** in the English Language Education Key Learning Area;

cultivate the **makerspace spirit / maker mindset**;

design English language learning activities that support the development of design thinking;

identify effective maker-centred **learning and teaching strategies** that empower students; and

assess students' English language learning and maker-related skills and attitude in the makerspace context.

Research Questions



- What are some of the key characteristics of the English language learning environment under which a makerspace spirit can thrive?
- What are the possible outcomes of an English language classroom steeped in a makerspace spirit?
- What kind of pedagogical designs can support the promotion of the makerspace spirit in the English Language classroom?

Makerspace in Action

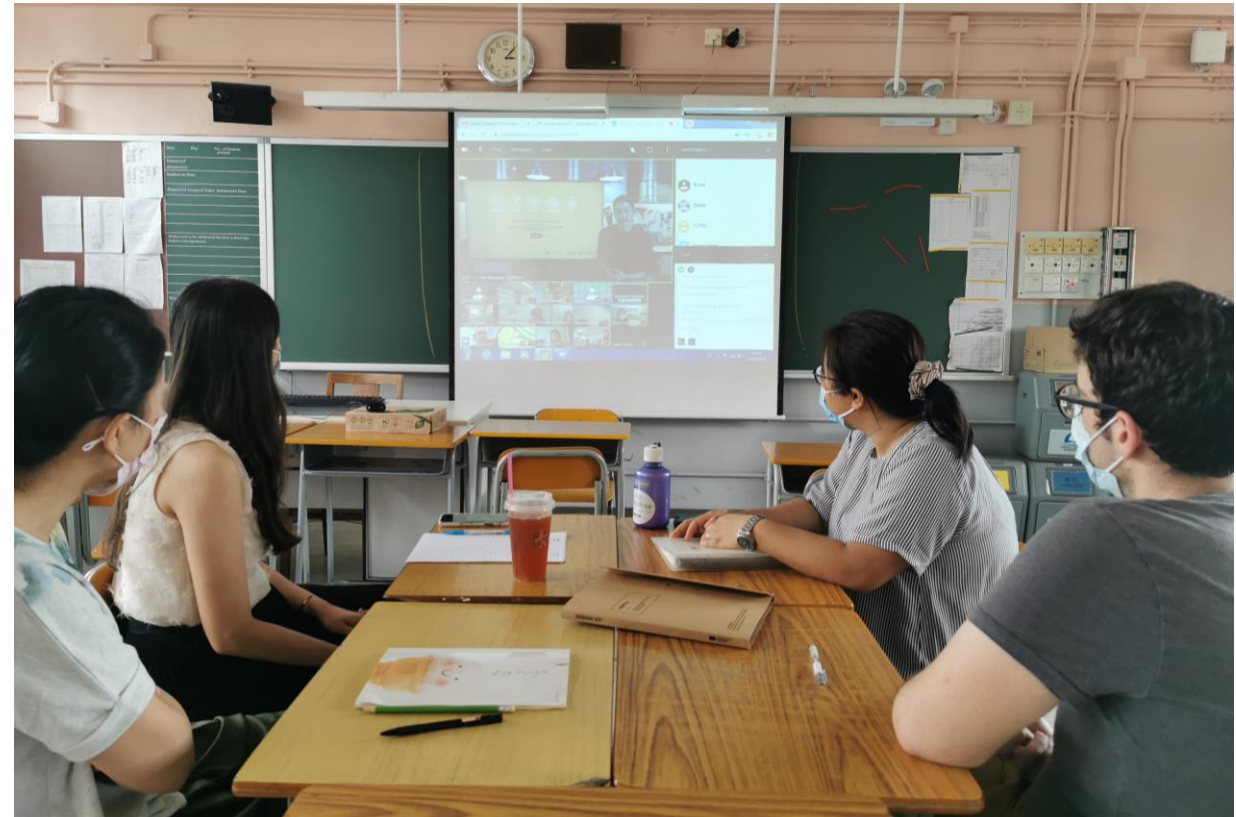
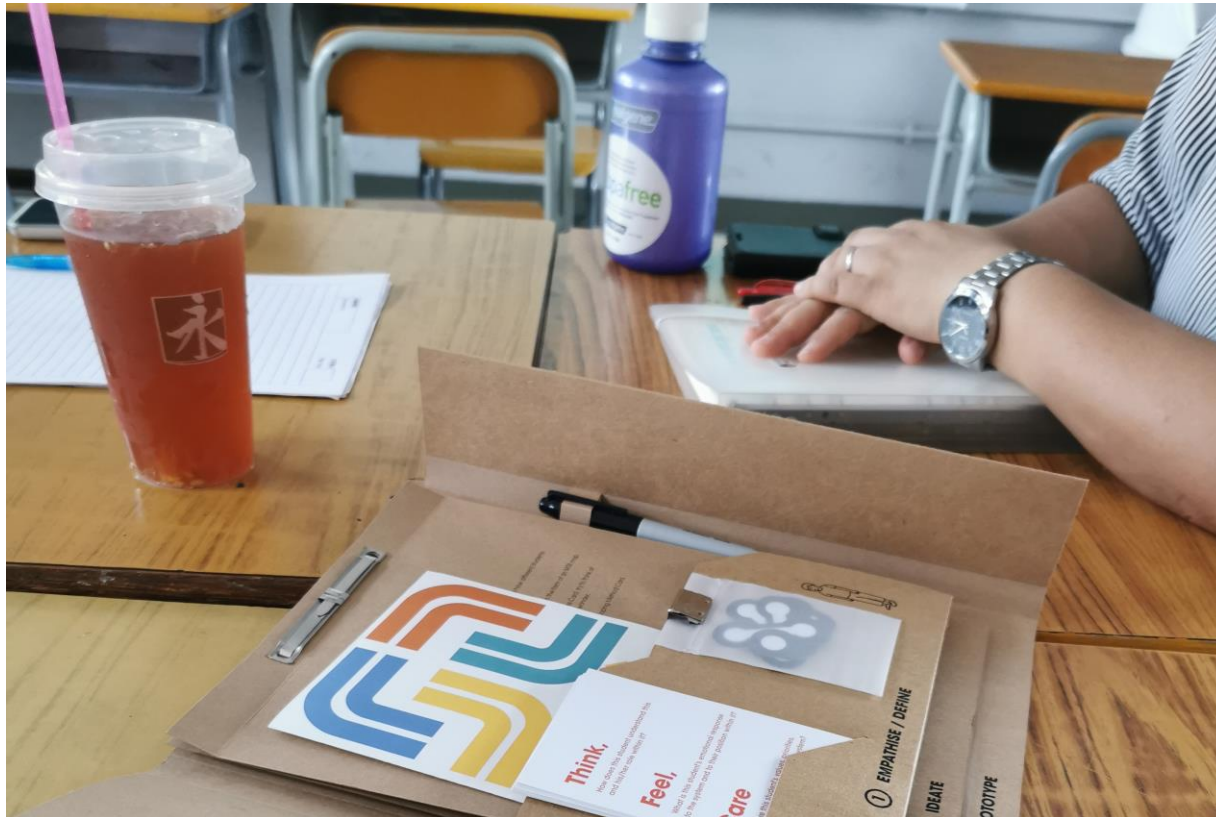
What can you expect from this project?

1. Handbooks from Project Schools

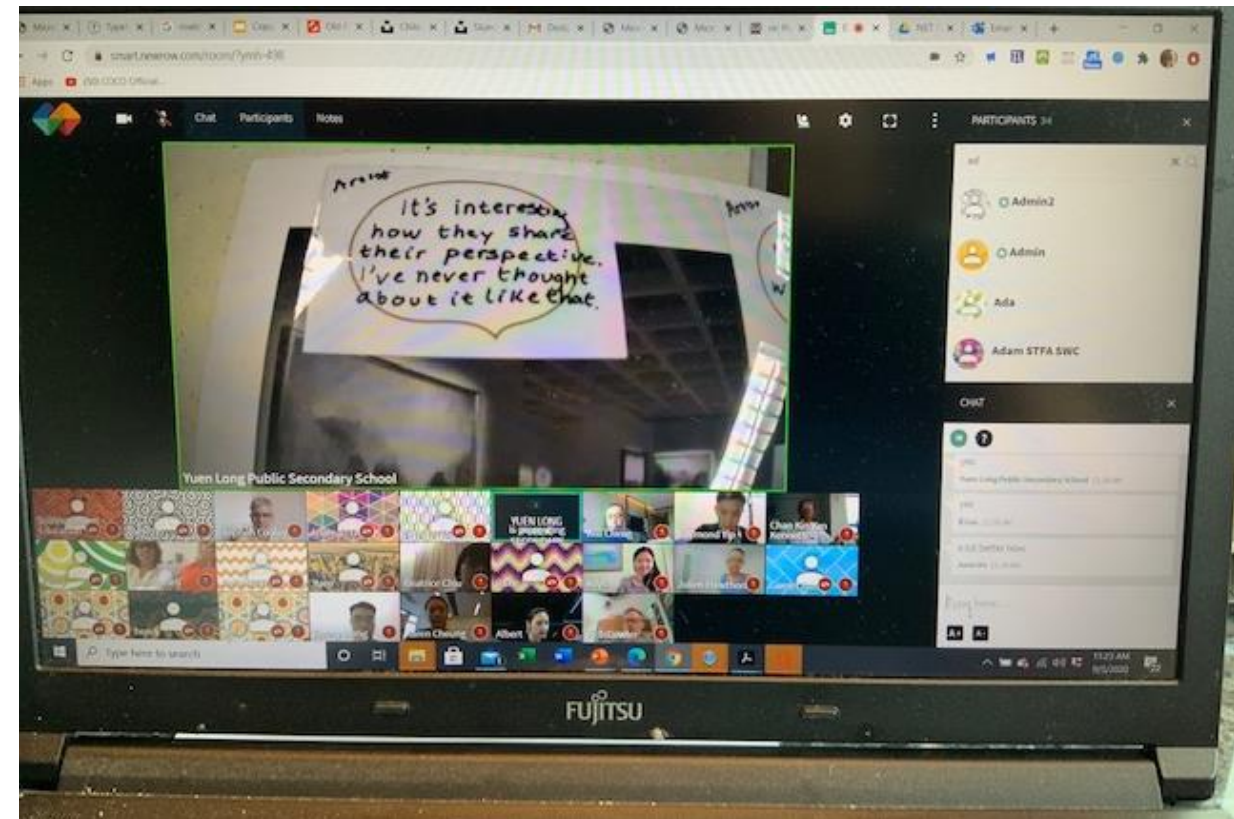
Developed as a student and teacher reference and
as a reminder of participation in the project



2. Professional Development



2. Professional Development



3. Value-adding

Teachers

- Introducing elements of “making” that give learning an experiential dimension
- Giving meaning and purpose to student learning
- Organising English language learning in a new way

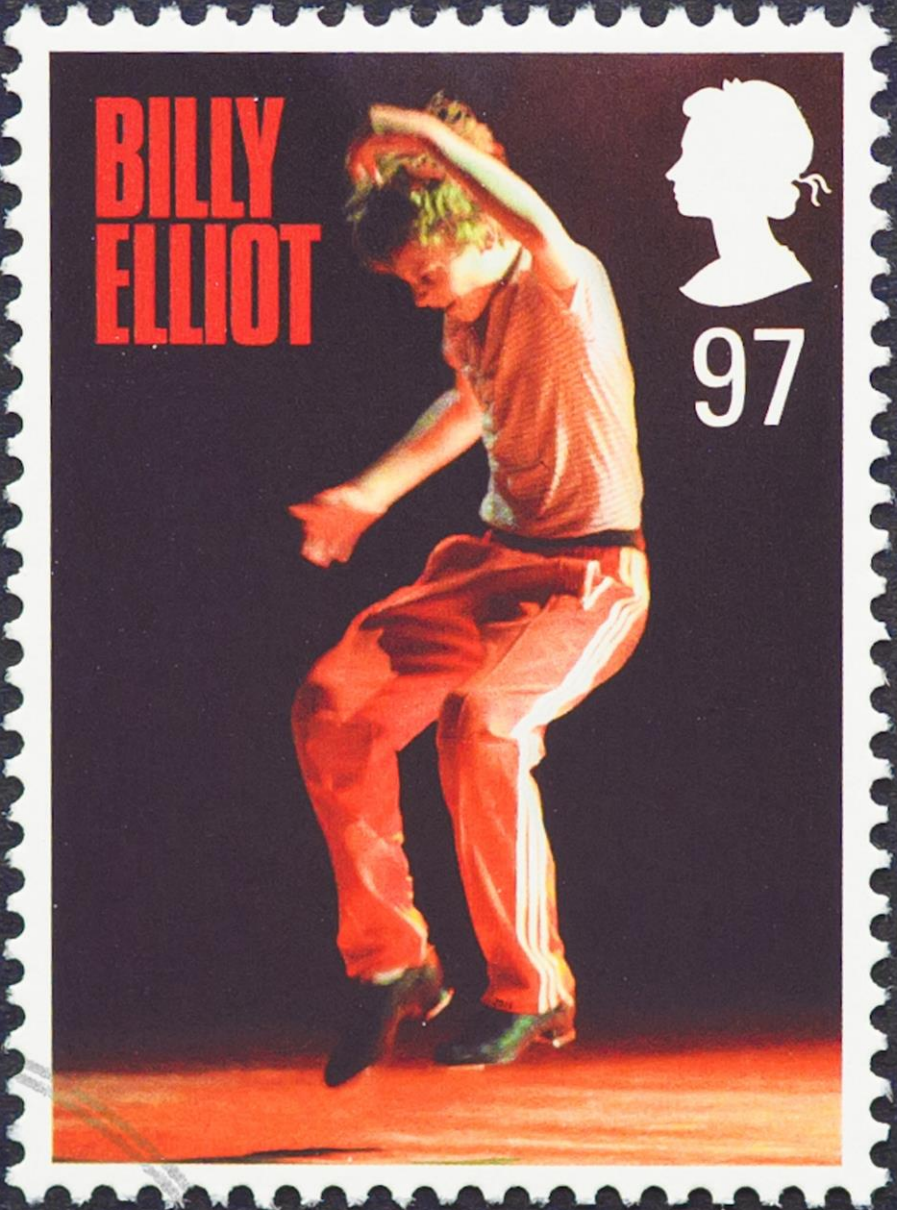
Students

- Using thinking routines to organise their thinking and make thinking visible
- Developing a deeper understanding of an issue
- Using language in a meaningful and purposeful way and in authentic contexts

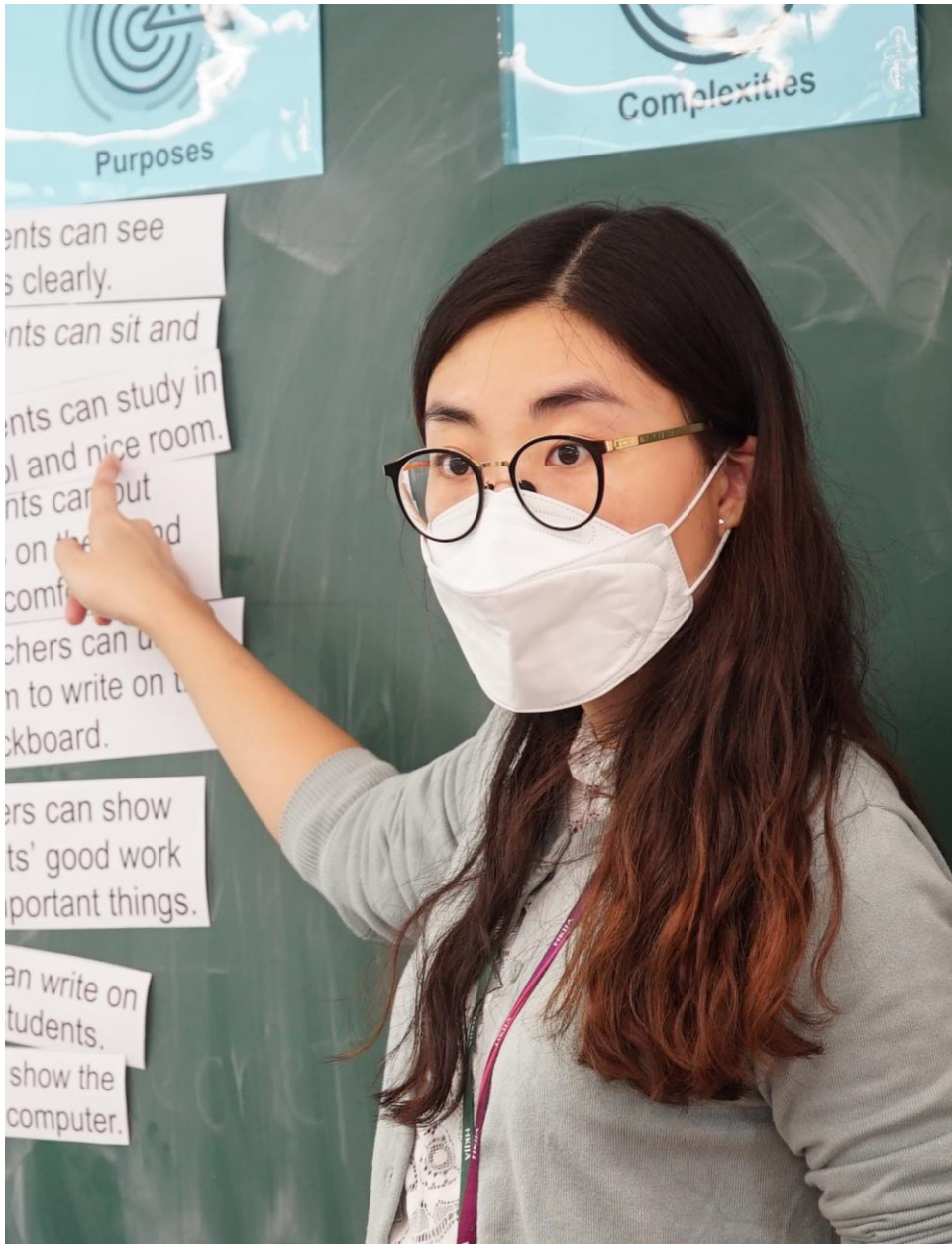


Makerspace in Action (1)

A School at the Initial Stage



- Using **Thinking Routines** to identify parts of the story and understand the relationship between characters
- Using pipe cleaners to **create** scenes from the story to enhance understanding

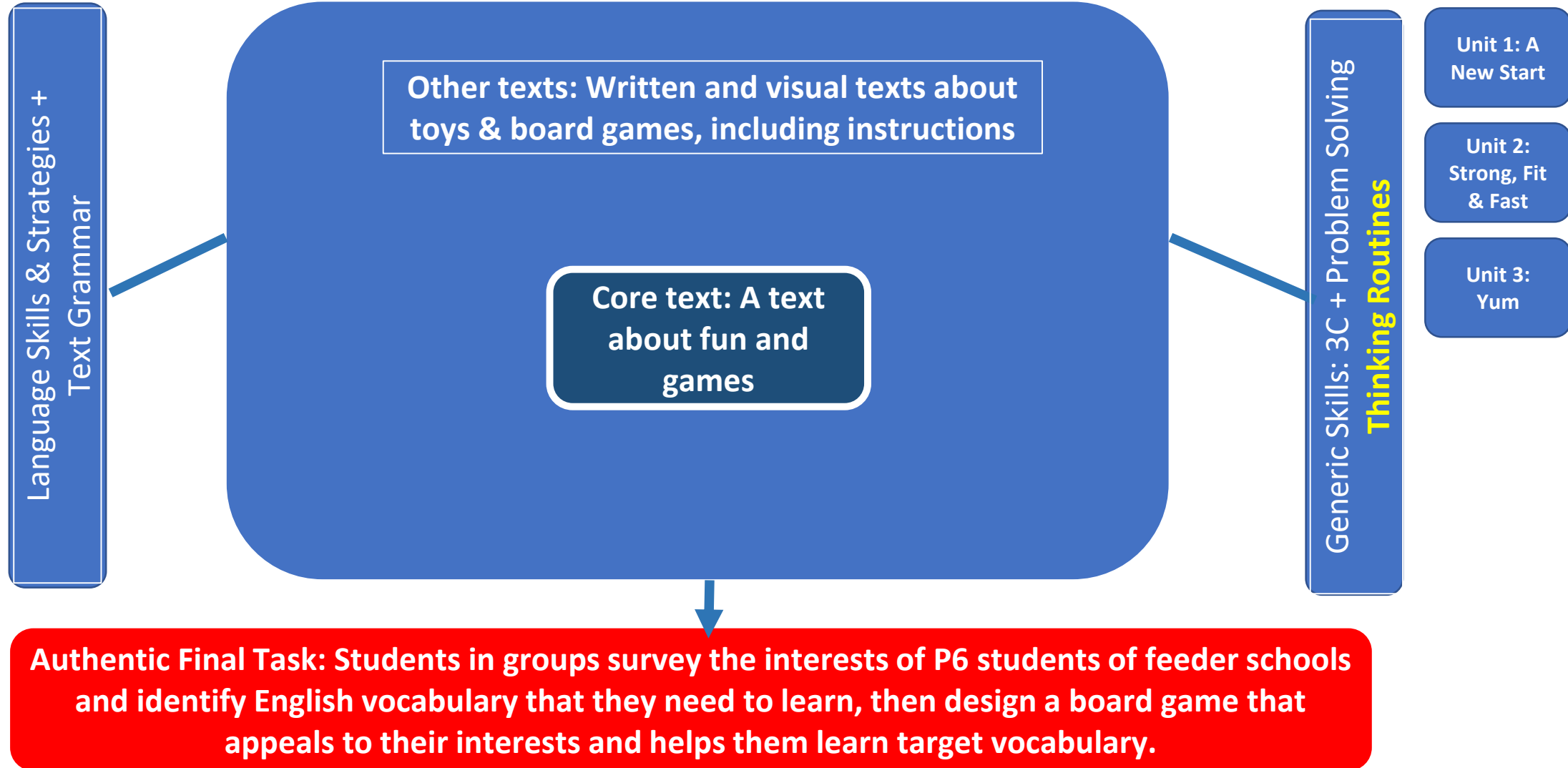


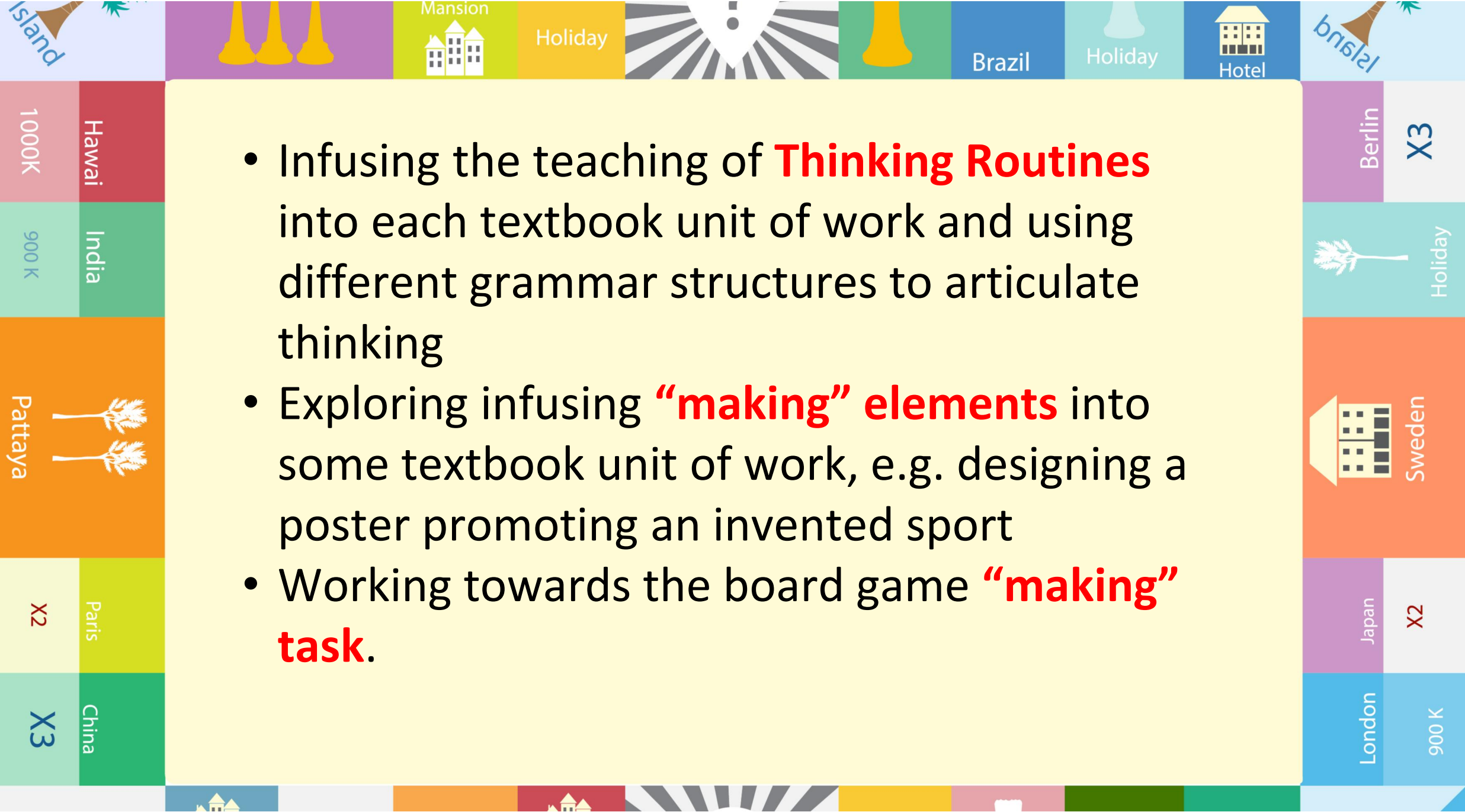
Makerspace in Action (2)

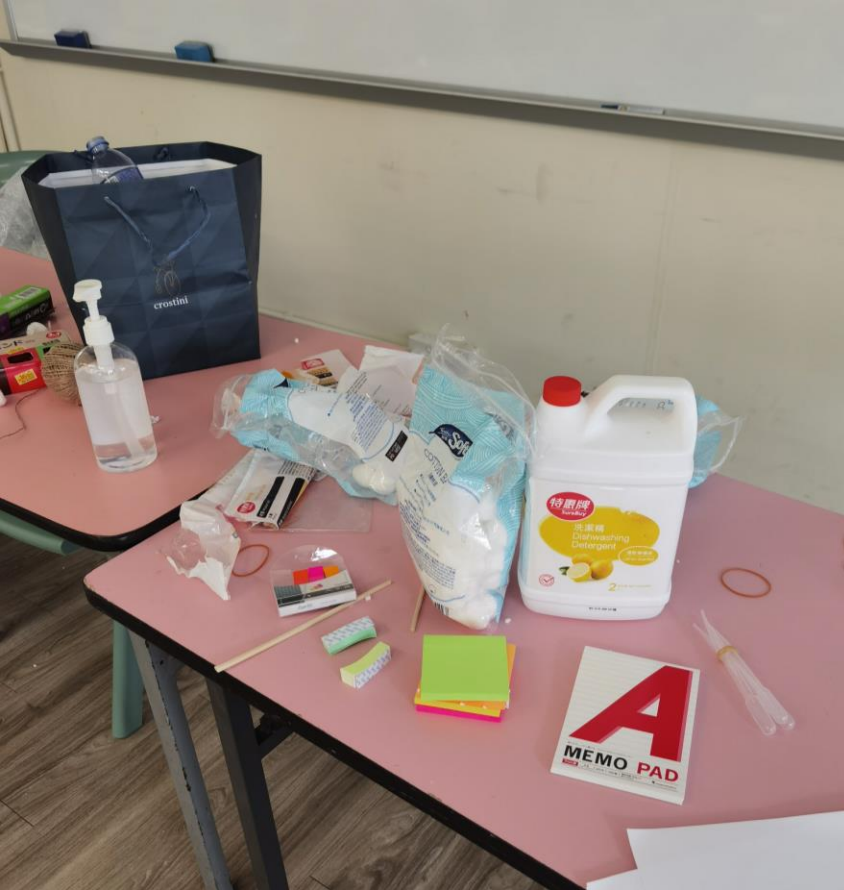
A School at the Exploration Stage

What a Project Unit May Look Like

Theme: Games



- 
- Infusing the teaching of **Thinking Routines** into each textbook unit of work and using different grammar structures to articulate thinking
 - Exploring infusing **“making” elements** into some textbook unit of work, e.g. designing a poster promoting an invented sport
 - Working towards the board game **“making” task**.



Makerspace in Action (3)

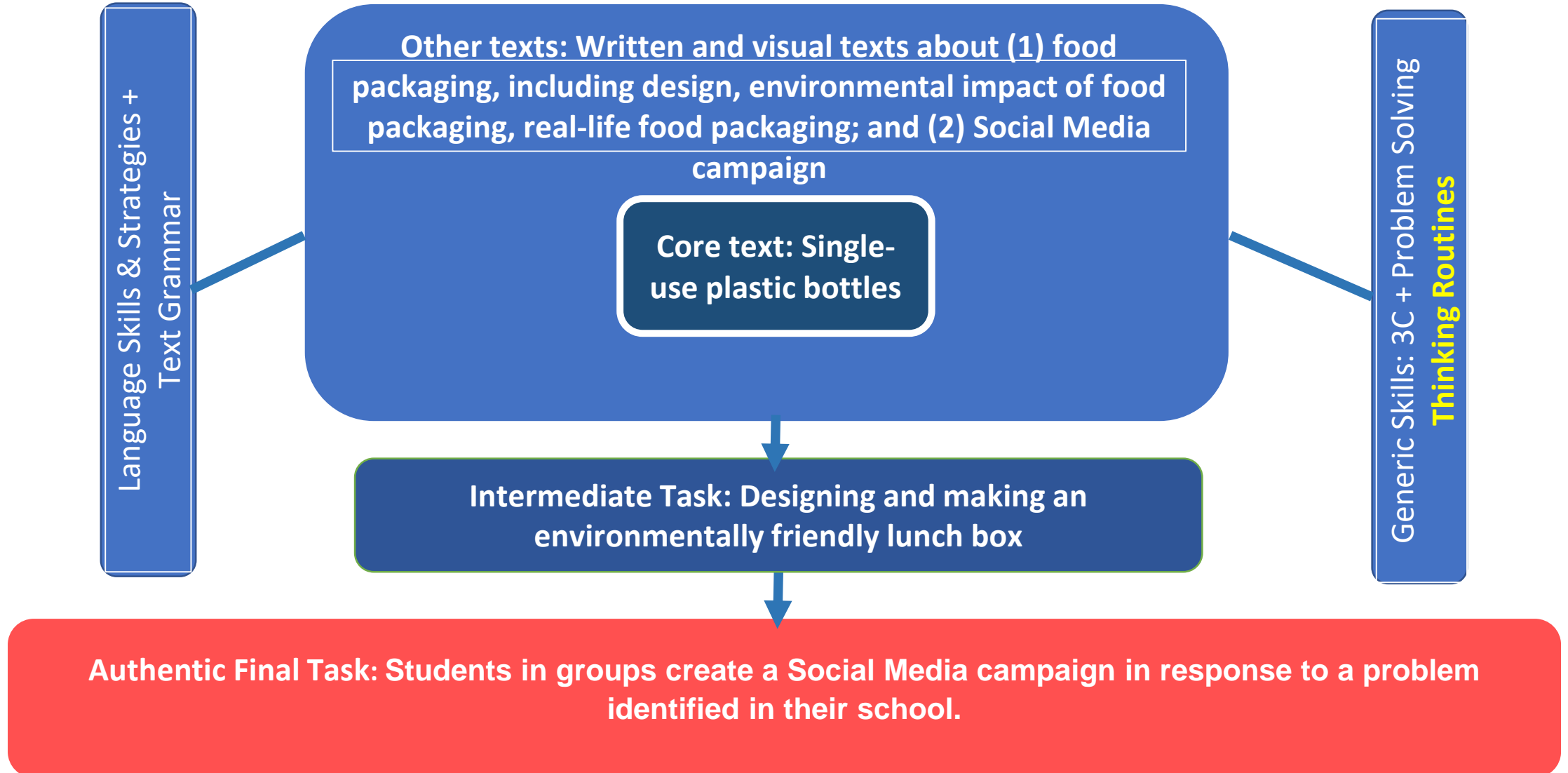
A School at the Advanced Stage



- Clear direction right from the start
- An environmental theme identified
- **“Making” elements** infused into English language learning
- **Thinking Routines** embedded into the **Design Thinking** process
- Plentiful opportunities to use English, e.g. interviewing, explaining design, product pitching

What a Project Unit May Look Like

Theme: Environment



Application Details & Procedures

Please refer to **Appendix C** of the EDB Circular Memorandum **No.4/2021**

Closing date for application:

10 March 2021

School Application Form to be completed in duplicate by School Heads and sent to:

**EDB Human Resources
Management Unit at 4/F,
East Wing,
Central Government Offices,
2 Tim Mei Avenue, Tamar**

(Part IV 'Secondment of Teachers' is applicable to the Makerspace "Seed" Project)

Enquiries

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Project-related

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You don't have to have a 3D
printer to have an awesome
Makerspace