Making & Designing in the English Classroom

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LST Yu Kan Hing Secondary School

Background

- A CMI secondary school, a STEM school
- Presentations of STEM products in English
- Band 2-3
- The entire S.1
  - 5 groups, homogeneous grouping
  - Class size: 20-30
- 6-8 English lessons a week, mostly double periods
- Joined this ‘Seed’ Project in 19/20

OVERVIEW

01 A board game created by our students

02 Preparation of the project

Teacher training
Curriculum mapping
Scheduling

03 During the project

Briefing and debriefing sessions
Learners' diversity
Language teaching and learning

04 Reflections

From students and teachers

05 Achievements and Appreciation

06 Tips for Sustainability

01

A board game created by our students

Input: Teaching **thinking routines** in various units

Unit 1: **A new start**	**Parts, Purposes, Complexities:** Analyse the school facilities, and enrich the description of school facilities for writing a letter to a primary school teacher
Unit 2: **Strong, fit and fast**	**Parts, Purposes, Complexities:** Analyse the bicycle at school **Parts, Purposes, Complexities & Parts, People, Interactions:** Analyse the new sports mentioned in the textbook **Think, feel, care; Imagine If:** Create a new sport for classmates and design a poster to introduce and promote it
Unit 5: **Yum!**	**Parts, Purposes, Complexities:** Analyse chocolate cookies mentioned in the textbook and the food pyramid **Parts, People, Interactions; Think, feel, care; Imagine If:** Analyse the school lunchbox system **Imagine If:** Analyse smoothies and ways to improve them

‹ Units 1, 2, 5)

Overview of the 4 thinking routines

TR 1: Parts, Purpose, Complexities

What are the parts?

What does this object/system do? Why do we use it? What does each part do?

How do the parts work together to make something happen?
What if a part were missing or changed?

TR 2: Parts, People, Interaction

What are the parts?

Who are the people? What do they do?

How do the parts and people work together? What would happen if a part or person was missing or changed?

TR 3: Empathy - Think, Feel, Care

What does this person do in the system?

If you were this person, how would you feel? Why?

If you were this person, what would you care about? What would be important to you?

TR 4: Imagine if

How could we make it better?

How could we make it more effective?

How could we make it more efficient?

How could we make it more ethical?

How could we make it more beautiful?

Design Thinking



Learn about the people you are designing for
- Who are they?
- What do they think?
- What do they feel?
- What do they say?
- What do they do?
- What do they care about?

Come up with a problem based on what you know about those people
- What problems do they have?
- Write a problem statement based on ONE problem

Think of ways to solve the problem
- How can you solve the problem?
- Adding things?
- Combining things?
- Creating things?

IF...

Make a testing model of a possible solution
- Choose the best solution and make a model (prototype)

Test the model and reflect if it works
- Does the model work?
- Do the users like it?
- How to make it better?

IF...



Language input:

- Modals
- You should…
- Wh-questions:
- What do you like about…?
- etc.



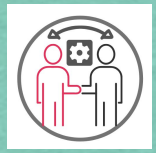


















IF...

“Good artists copy, great artists steal.”

Pablo Picasso

1.1 Board Game

How do players move?

What makes the game fun?

What are the elements of luck / strategy involved?

What makes the game unique?

How does / do a player(s) win?

What is/are the shape of the board game?



Target players?



Theme?

1. Core vocab
2. Knowledge about salad

02

Preparation of the project

2.1 Teacher Training





4 Thinking Routines

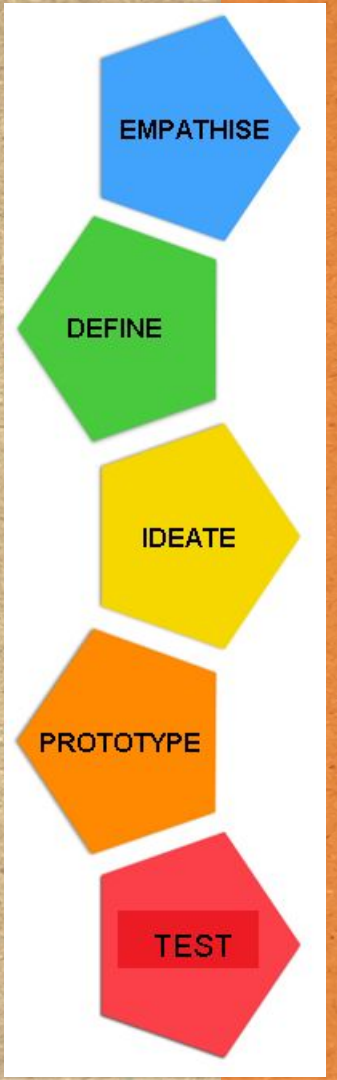
Parts, Purposes, Complexities

Parts, People, Interactions

Think, Feel, Care

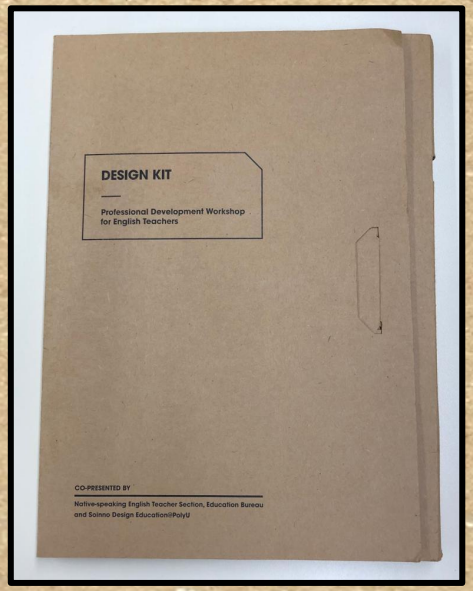
Imagine if...

5 Stages of Design Thinking

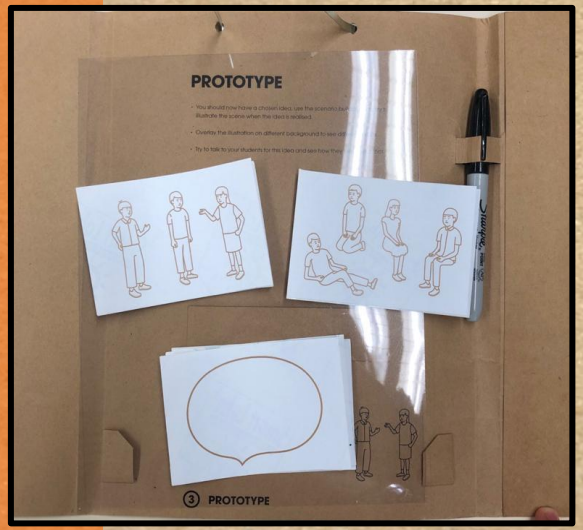


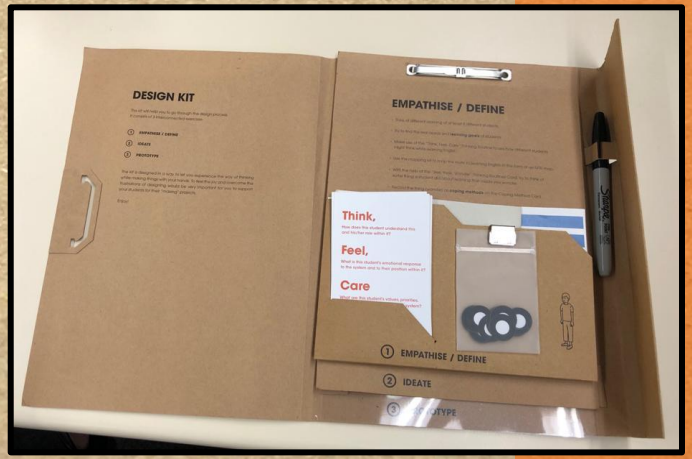
Design Kit by Solnno



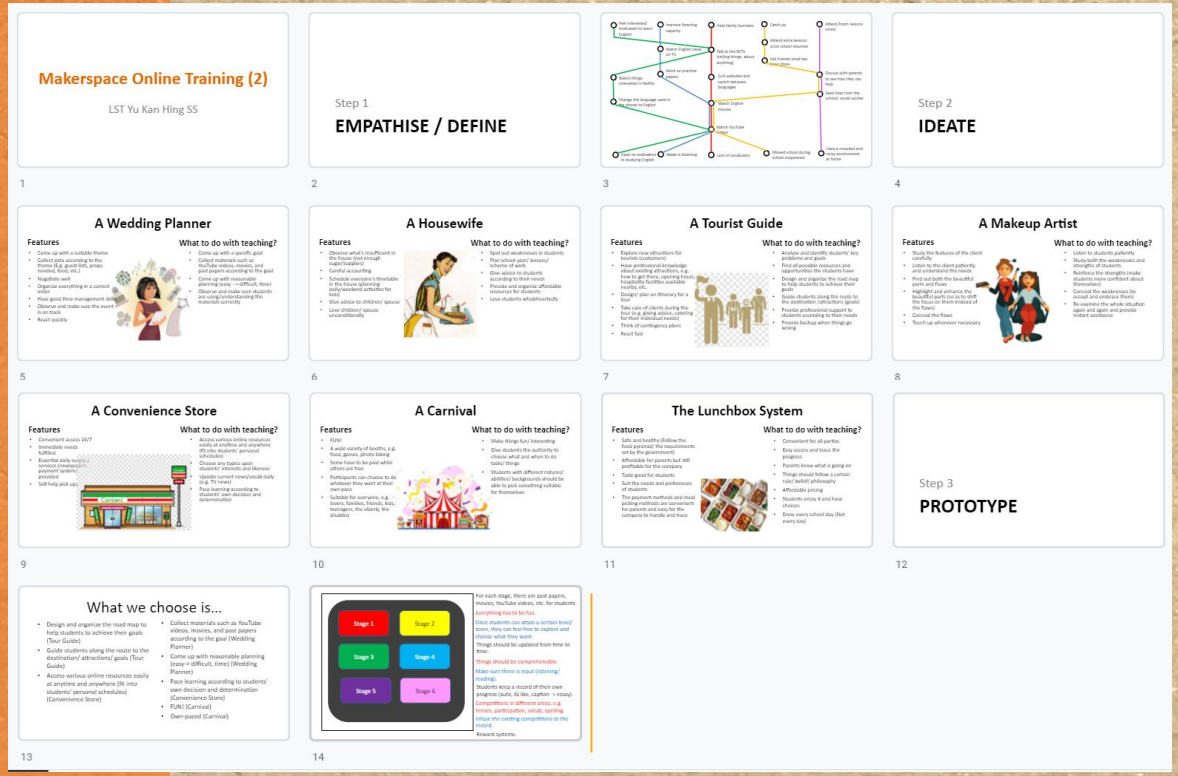


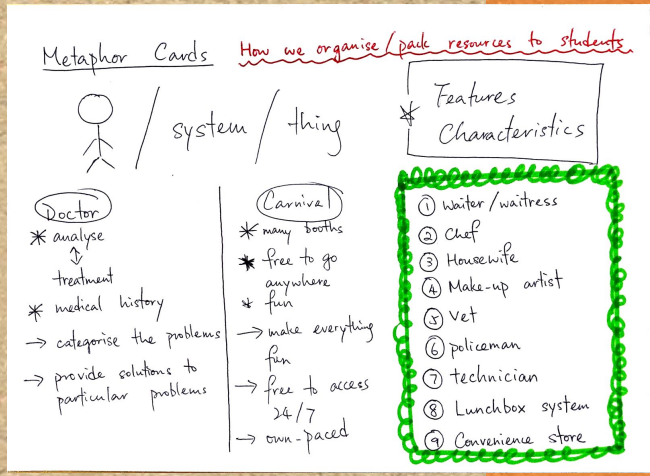






Online Training Workshops by PolyU





2.2 Curriculum Mapping and Scheduling

	TR1: Parts, Purposes, Complexities	TR2: Parts, People, Interactions	TR3: Think, Feel, Care	TR4: Imagine if	Design Thinking
A New Start	Analyse the school facilities for writing a letter to a primary school teacher				
Strong, Fit & Fast	Analyse a bicycle Analyse new sports	Analyse new sports	Design a poster to promote a new sport for classmates	Design a poster to promote a new sport for classmates	
Amazing Experiences	**First term exam**				
Yam!	Analyse cookies and the food pyramid	Analyse the lunchbox system	Analyse the lunchbox system	Analyse the lunchbox system and smoothies	
Fun and Games					Design board games for S.1 students
Pack Your Bags	**Final exam**		Sharing in June		

03

During the project

3.1 Makerspace Handbook

- **A systematic record of the entire Makerspace “Seed” Project**
  - Introducing the 4 thinking routines and Design Thinking
  - Definitions, examples and practices
  - Gradual release of responsibility

Lok Sin Tong Yu Kan Hing Secondary
S.1 English Language



Name: _____ ( )
Class: _____ **Group:** _____

5 facts you should know about Makerspace.

1. What is a Makerspace?

- A makerspace is a space where you can **work with others**.
- It helps you think more **positively** and **solve problems** in **better** ways by using **4 thinking routines**.

2. Why am I learning this?

- It helps you to **solve problems**.
- It helps to prepare you for **the future**, e.g. jobs.
- It helps to **see opportunities**, e.g. start your own business.

3. Is it difficult to learn this?

- **No**. Practice more and you can master it.

4. Why start now?

- The earlier the better!

5. Where can I apply it?

- **Anywhere** as it is everywhere. It can also be **used in other subjects**, like Science, Integrated Humanities and writing tasks in Chinese!
- Don't forget to apply it in your **daily life**. It can make you and others' life better!

What type of person do you need to be when you leave school?

The world **doesn't need**...

- Students who can **only pass** exams.

The world **does need**...

- **independent** learners
- **creative** people
- who see the **problems** of the world as **puzzles**
- and **work hard** to solve them
- even when it is **difficult**.



Gever Tulley, Brightworks School founder

Makersp can help you prepare yourself to become thi rson.

Understanding the purpose of this 'Seed' project

Overview of the 4 thinking routines

TR 1: Parts, Purpose, Complexities What are the parts? What does this object/system do? Why do we use it? What does each part do? How do the parts work together to make something happen? What if a part were missing or changed?	
TR 2: Parts, People, Interaction What are the parts? Who are the people? What do they do? How do the parts and people work together? What would happen if a part or person was missing or changed?	
TR 3: Empathy - Think, Feel, Care What does this person do in the system? If you were this person, how would you feel? Why? If you were this person, what would you care about? What would be important to you?	
TR 4: Imagine if How could we make it better? How could we make it more effective? How could we make it more efficient? How could we make it more ethical? How could we make it more beautiful?	

What are we going to do this year?

September 2020	○	Introduction
October 2020	○	TR 1: Part, Purposes, Complexities
November 2020	○	TR 2: Parts, People, Interaction
December 2020	○	TR 3: Empathy - Think, Feel, Care
January 2021	○	First Term Exam
February 2021 March 2021	○	TR 4: Imagine if
April 2021	○	Designing a board game
May 2021	○	Tests and Modifications
June 2021	○	Presentations





Thinking Routine 1:

Parts, Purposes, Complexities

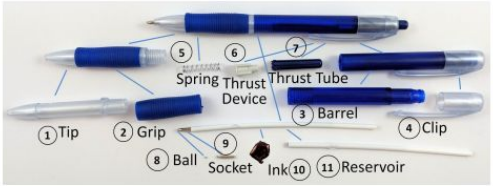
What **parts** are there?

What does this object/system **do**? **Why** do we use it? What does each **part do**?

How do the parts **work together** to make something happen?
What if a part were missing or changed?

Example: A push ballpoint pen

This is a common kind of pen. Have you ever looked at it very closely?



What are the **parts** of a ballpoint pen?	What are the **purposes** of these parts?	**How** do these parts **work together** to make the pen work? What if they were **different**?
1) tip	To ___hold___ the ink chamber in position	Why is it **important** to be able to **unscrew** the tip and the barrel?
2) grip	To _____ to hold the pen	What if there is **no grip**?
3) barrel	To ___house___ the inner parts of the pen	What if there is **no barrel**?
4) clip	To _____ the pen more easily	What if there is **no clip**?
The ink chamber = 8 + 9 + 10 + 11		
5) spring	To _____ the position of the ink chamber	What is the difference between a push pen and a pen with a top?
6) thrust device		
7) thrust tube		
8) ball	To _____	What is the difference between using a ballpoint pen and a fountain pen?
9) socket		
10) ink		
11) reservoir		

Hints: control, write, make it easier, carry

Practice 1: _____

What are the **parts**?	What does this object/system **do**? **Why** do we **use** it? What are the **purposes** of each part?	**How** do these parts **work together**? What if they were **different**?
1)		

Thinking Routine 2:

Parts, People, Interaction

What are the **parts**?

Who are the **people**?
What do they do?

How do the **parts** and **people** work together? What would happen if a part or person was missing or changed?

Example: A canteen

This is our school canteen. What part and people can you see? What is the interaction between them?





What are the **parts**?	How do the **parts** and **people** work **together**?	Who are the **people**? What do they do?
Food and drinks		Customers (students, teachers, parents)
Tables and chairs		Staff of the canteen
Vending machines		Teachers-in-charge of the canteen
Rubbish bins		Parents
The menu		Janitors
A kitchen with stoves and cooking utensils		The company of the canteen
Fridges		Teachers who are there on duty

*Draw **arrows** if you think the parts and the people are related.*

Practice 3: _____

What are the **parts**?	How do the **parts** and **people** work **together**?	Who are the **people**? What do they do?

Thinking Routine 3:

Think, Feel, Care

What does this **person** do in the system?

If you were this person, how would you **feel**? Why?

If you were this person, what would you **care** about? What would be important to you?

Example: A canteen worker

Before we start, answer the following questions:

Q1) Do you like the canteen worker of our school?

_____

Q2) Has there anything good happened between you? What was that?

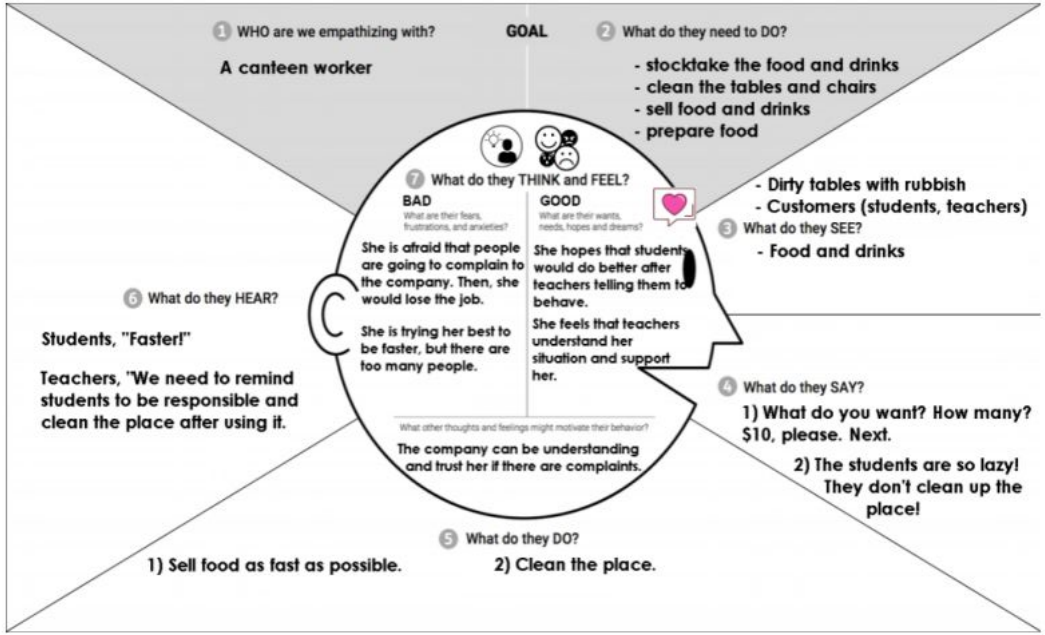
_____

_____

Q3) Has there anything bad happened between you? What was that?

_____

_____



Thinking Routine 4:

Tinkering - Imagine If...



How could we make it **better**?

How could we make it **more effective**?

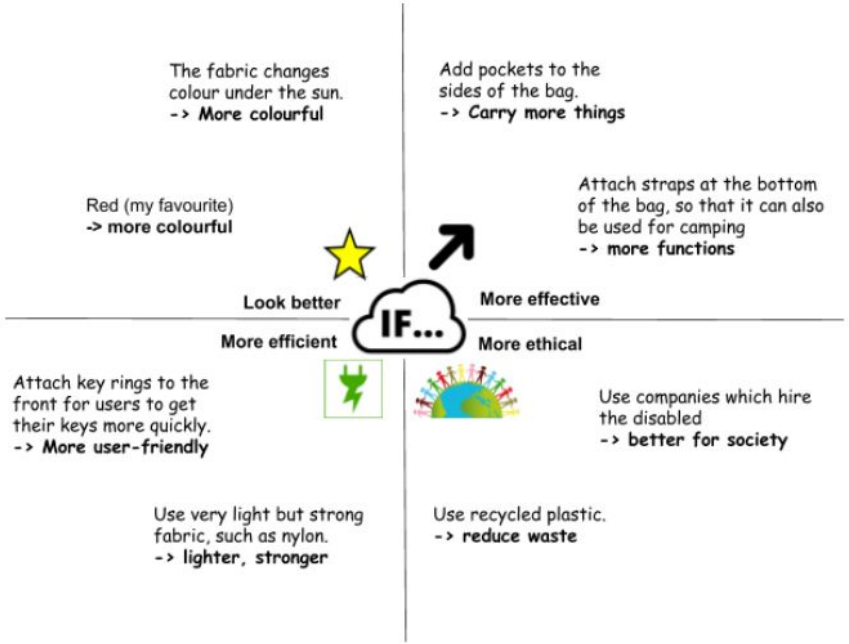
How could we make it **more efficient**?

How could we make it **more ethical**?

How could we make it **more beautiful**?

Example: A schoolbag (backpack)

How can we make our schoolbag **better**?



Design Thinking



Learn about the people you are designing for

- Who are they?
- What do they think?
- What do they feel?
- What do they say?
- What do they do?
- What do they care about?

Come up with a problem based on what you know about those people

- What problems do they have?
- Write a problem statement based on ONE problem

Think of ways to solve the problem

- How can you solve the problem?
- Adding things?
- Combining things?
- Creating things?

Make a testing model of a possible solution

- Choose the best solution and make a model (prototype)

Test the model and reflect if it works

- Does the model work?
- Do the users like it?
- How to make it better?



Practice 9

Empathise

What do you **know** about the target people?

Define

What **problem**(s) do they have?

* _____ need(s) _____

because / but / that _____.

Ideate

Choose one of the problems above.
How can you **solve** it? Think of as many ways as you can.

Prototype

Choose one of the ideas in IDEATE and make a prototype. Draw/ Write the details below.

Test

Does the prototype work? How can you make it better?

3.2 Unit 1 A new start

TR1: Parts, Purposes, Complexities

- Analyse the school facilities for **writing** a blog entry

3.2 Unit 2
Strong, fit and fast

a) TR1: Parts, Purposes, Complexities

- Analyse a bicycle to help students understand the **reading** text

b) TR1: Parts, Purposes, Complexities; TR3: Think, Feel, Care; TR4: Imagine if

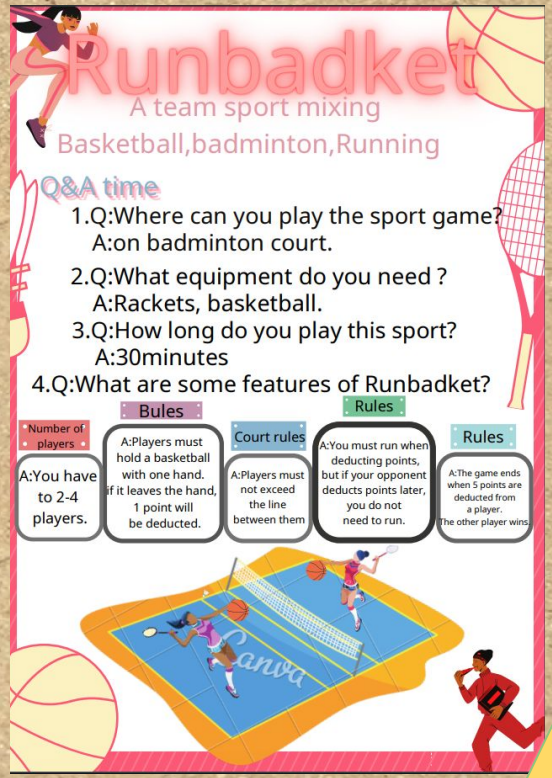
- Create a new sport and **write** a poster to promote it
- Use of **wh-questions** and **modals**

Language elements

Multimodality









Modals

Wh-questions

3.3 Unit 5 Yum!

TR1: Parts, Purposes, Complexities;
TR2: Parts, People, Interactions;
TR3: Think, Feel, Care;
TR4: Imagine if

- Analyse cookies, smoothies, the food pyramid and the lunchbox system to **enrich** students' understanding of the theme
- Mini-lessons

“I wouldn’t be so hard to the lunch ladies anymore.”

“I would hand in the order form on time from now on.”

3.4 Unit 7 Fun and games

Design Thinking

- Make a board game
- Write reflections

The textbook Fun & Games unit

Board games

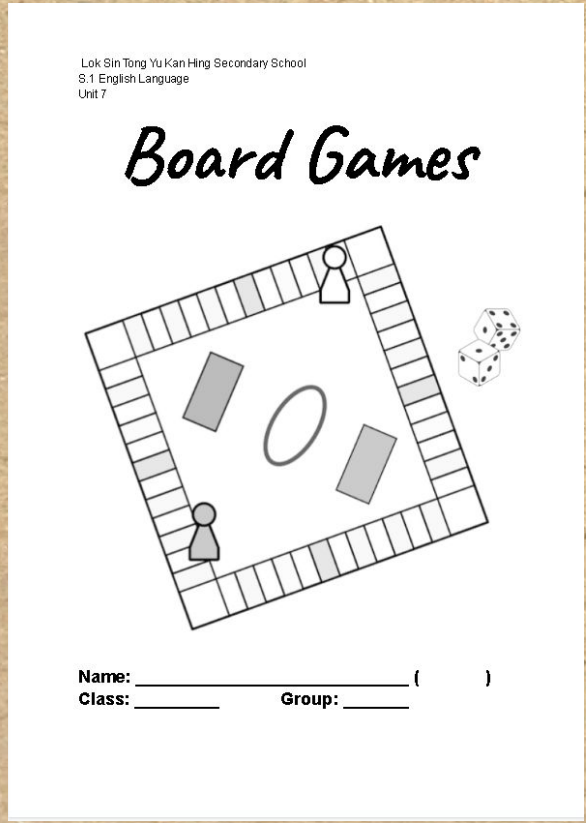
Language elements

- **Imperatives**
- **Wh-questions**
- **Conditional Sentences**

Design Thinking

Board Game Handbook

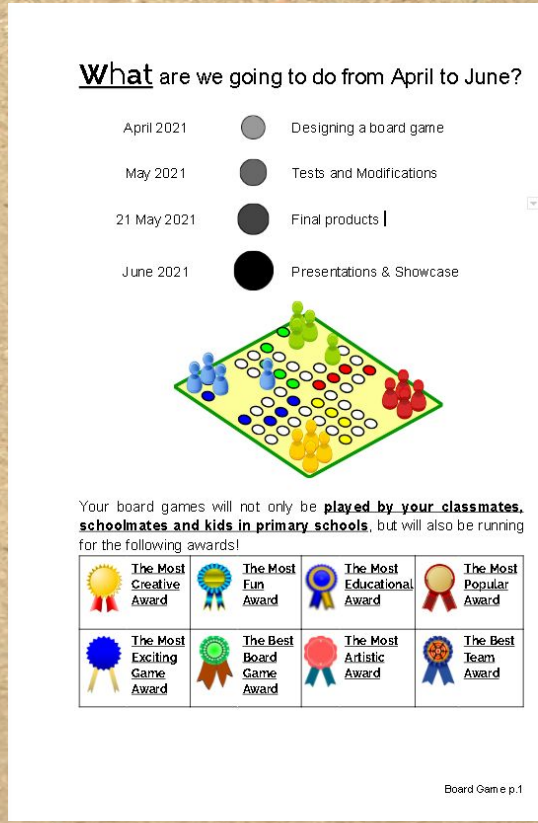
- Not printed or given one in one go



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S.1 English Language
Unit 7

Board Games

Name: _____ ( )
Class: _____ **Group:** _____



What are we going to do from April to June?

April 2021	Designing a board game
May 2021	Tests and Modifications
21 May 2021	Final products
June 2021	Presentations & Showcase

Your board games will not only be **played by your classmates, schoolmates and kids in primary schools**, but will also be running for the following awards!

The Most Creative Award	The Most Fun Award	The Most Educational Award	The Most Popular Award
The Most Exciting Game Award	The Best Board Game Award	The Most Artistic Award	The Best Team Award

Board Game p.1

Part 1: Introduction

Questions will be used for later parts

Part 1: Introduction to Board Games

Your teacher is going to tell you his/ her two favourite board games. What do you know about them? How about you?

		Teacher's Game 1	Teacher's Game 2	Your favourite board game
	Name of board game			
1	How do players **move**?	**1.** take turns to throw the dice, and move	1	1
2	What are the elements of **luck/ strategy** involved?	**2.** land on the square with nothing, a snake or a ladder	2	2
3	How does / do a player(s) **win**?	**3.** land exactly on the last square	3	3
4	What makes the game **fun**?	**4.** A player can take 10 steps backward if he steps on the snake.	4	4
5	What makes the game **unique**?	**5.** Players from 3 - 80 years old love this game as no skills are needed.	5	5
6	What is/are the **shape**(s) of the gameboard?	**6.** Square	6	6

Part 2: Glossary + Worksheet

- Language support

Board Games

Worksheet (1): Part 2 Glossary

Name: _____ ( ) Class: _____ Group: _____

Take out your notes and turn to p.3-4. Look at Part 2: Glossary on Board Game Elements and complete the worksheet.

Level 1: Matching

What do the following pictures mean? Match them with the correct words/ phrases.








players
throw a dice
draw a card
counters
tiles
take turns
collect
land
attack
winners
opponents
a gameboard








Level 2: Fill in the blanks (Ludo)

Watch the video about how to play Ludo. Try your best to understand the game in the video and use the glossary to help you complete the following instructions. The answers MAY NOT be in the video.



Pack

1. Ludo is a game for 2-4 _____.
2. It has a _____ gameboard.
3. It has four sets of coloured _____.
4. Players use a six-sided _____ to decide who to play first and how many steps the _____moves.

How to move

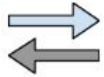
5. _____ to _____ and move the _____.
6. If a player's counter _____ on the _____'s counter, the latter one will fall back to the station.
7. If a player's counter _____ on another counter with the same colour, they become double pieces.
8. There are four safety _____ on the board with star signs.

How to win

9. The first player who moves all four counters once around the board is the _____.

Part 2: Glossary on Board Game Elements

A. Actions

roll/ throw a dice 	spin a wheel 	move forward/ backward 	jump/ leap 
take turns  1 2 3 4	attack/ capture 	draw a card 	exchange/ swap 
land 	stack 	skip 	collect 

B. Things

meeples 	tiles 	a stopwatch 
game pieces/ counters 	holders 	a marble 
tokens 	a gameboard 	rules 

Part 3: Creating a board game

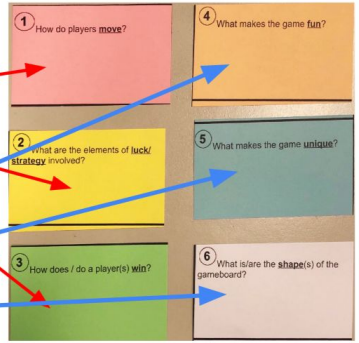
- Experience some parts of Design Thinking

Steps (6 Cards)

1) Turn to p.2 (Part 1) of your notes
2) For each group, get 6 cards of different colors
3) Write the answers of the 6Qs onto 6 cards
   - ***** *The answers can be from different students*
4) Pass them to the teacher when you finish

p.2	Teacher's Game 1	Teacher's Game 2	Your favourite board game
Name of board game	**Snakes and Ladders**	Upwords	
Q1. How do players **move**?	1. take turns to throw the dice, and move	1. Put tiles on the gameboard.	1.
Q2. What are the elements of **luck/ strategy** involved?	2. land on the square with nothing, a snake or a ladder	2. Spell longer or shorter words.	2.
Q3. How does / do player(s) **win**?	3. land exactly on the last square	3.Use all the tiles and get the highest points.	3.
Q4. What makes the game **fun**?	4. A player can take 10 steps backward if he steps on the snake.	4.Show people how good my English is.	4.
Q5. What makes the game **unique**?	5. Players from 3 - 80 years old love this game as no skills are needed.	5.We can learn a lot of English words.	5.
Q6. What is/are the **shape**(s) of the gameboard?	6. Square 	6.Square	6.

Homework



Part 3: Creating a Board Game

Group Leader: _____

Groupmates: _____, _____, _____

What is the name of your board game?	Our board game is called...
How many players are there?	There can be _____ players.
The pack contains: (Parts) ⑥	There are...

How do players move? ① ② ④ ⑤

1. _____

_____

_____

_____

_____

_____

_____

_____

How do players win? ③

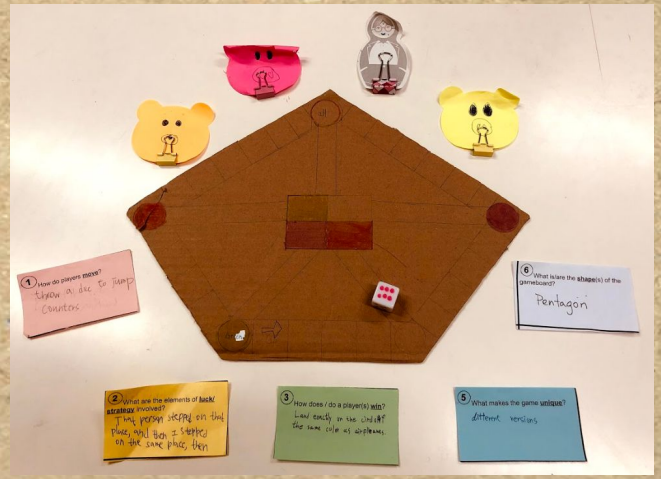
The first player who _____

_____ wins.




1 How do players move?
Jump
3 How does / do a player(s) win?
5 What makes the game unique?
There are many ways to win.
2 What are the elements of luck/ strategy involved?
4 What makes the game fun?
6 What is/are the shape(s) of the gameboard?
rectangle


Supreme


1 How do players move?
throw a dice to jump counters
6 What is/are the shape(s) of the gameboard?
Pentagon
2 What are the elements of luck/ strategy involved?
I will jump steps on this place, and then I stopped on the same place, then
3 How does / do a player(s) win?
land exactly on the circle of the same color as airplanes.
5 What makes the game unique?
different versions

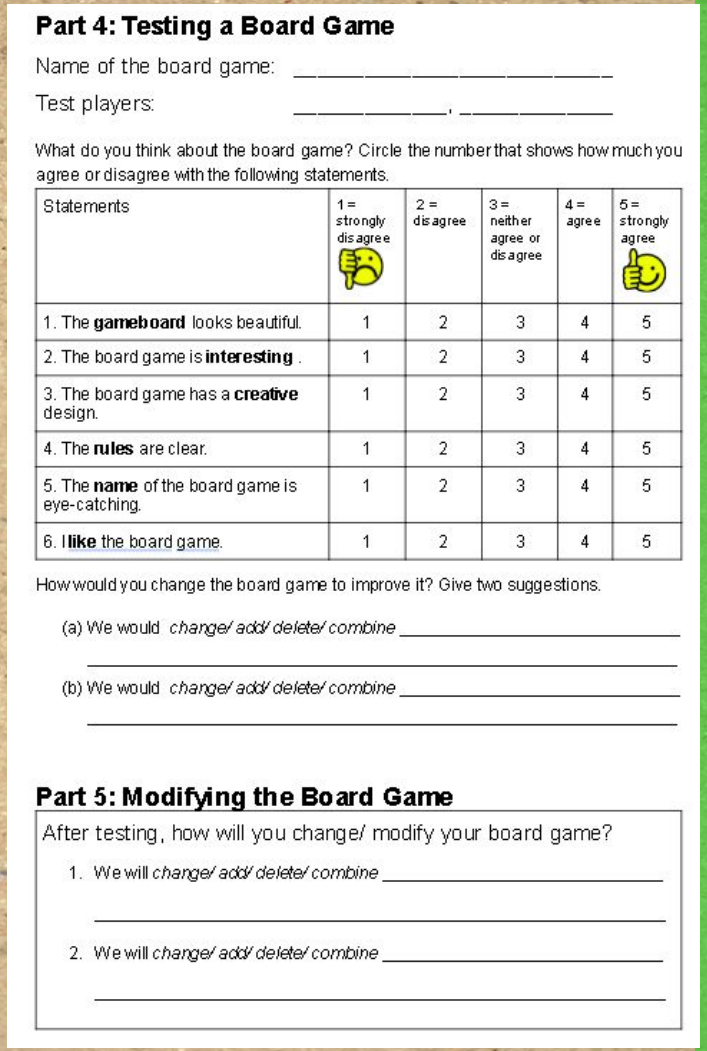
Part 4: Testing a board game

- In-class

Language support for doing group discussions

- **Provide stems**
- **Adopt an award system**

Part 5: Modifying the board game



Part 4: Testing a Board Game

Name of the board game: _____

Test players: _____, _____

What do you think about the board game? Circle the number that shows how much you agree or disagree with the following statements.

Statements	1 = strongly disagree	2 = disagree	3 = neither agree or disagree	4 = agree	5 = strongly agree
1. The **gameboard** looks beautiful.	1	2	3	4	5
2. The board game is **interesting** .	1	2	3	4	5
3. The board game has a **creative** design.	1	2	3	4	5
4. The **rules** are clear.	1	2	3	4	5
5. The **name** of the board game is eye-catching.	1	2	3	4	5
6. I **like** the board game.	1	2	3	4	5

How would you change the board game to improve it? Give two suggestions.

(a) We would *change/ add/ delete/ combine* _____

_____

(b) We would *change/ add/ delete/ combine* _____

_____

Part 5: Modifying the Board Game

After testing, how will you change/ modify your board game?

1. We will *change/ add/ delete/ combine* _____

_____

2. We will *change/ add/ delete/ combine* _____

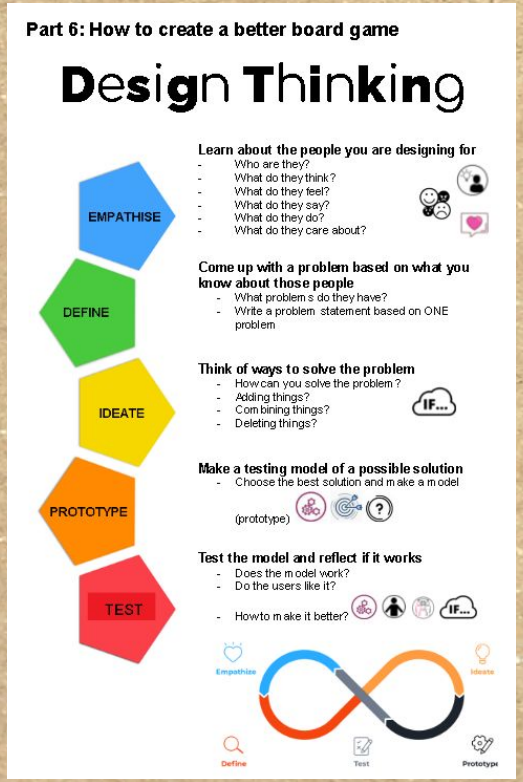
_____

Parts 1-5: Making the first draft

- Students were very excited
- They got the gist of it
- Knowing the process and got the habits of giving and receiving feedback

Part 6: Introduce Design Thinking

- Together with the thinking routines



Part 6: How to create a better board game

Design Thinking

EMPATHISE

DEFINE

IDEATE

PROTOTYPE

TEST

Learn about the people you are designing for

- Who are they?
- What do they think?
- What do they feel?
- What do they say?
- What do they do?
- What do they care about?

Come up with a problem based on what you know about those people

- What problems do they have?
- Write a problem statement based on ONE problem

Think of ways to solve the problem

- How can you solve the problem?
- Adding things?
- Combining things?
- Deleting things?

IF...

Make a testing model of a possible solution

- Choose the best solution and make a model

(prototype)

Test the model and reflect if it works

- Does the model work?
- Do the users like it?
- Howto make it better?

IF...

Empathize Ideate Define Test Prototype

Overview of the 4 thinking routines

TR 1: Parts, Purpose, Complexities What are the parts? What does this object/system do? Why do we use it? What does each part do? How do the parts work together to make something happen? What if a part was missing or changed?
TR 2: Parts, People, Interaction What are the parts? Who are the people? What do they do? How do the parts and people work together? What would happen if a part or person was missing or changed?
TR 3: Empathy - Think, Feel, Care What does this person do in the system? If you were this person, how would you feel? Why? If you were this person, what would you care about? What would be important to you?
TR 4: Imagine if How could we make it better? How could we make it more effective? How could we make it more efficient? How could we make it more ethical? How could we make it more beautiful?

Part 7: Assessment criteria of the project

Language elements

Design Thinking

Part 7: Assessment Criteria

Project Overview

- You will be assigned to a group of FOUR. You will design a board game together.
- To build your board game, you will design THREE items:
  1. Instructions/ Rules
  2. The gameboard
  3. Game pieces
- To design your board game, you will follow the 5 steps of design thinking – empathize, define, ideate, prototype and test.
- To test your board game, you will complete AT LEAST ONE TEST with the target players. Then, make necessary changes to it.

How will your total marks be assessed?

Meeting the needs of the target players	10 marks	❑ Does your board and game pieces promote your theme? ❑ Does it answer the need(s)/ solve the problem(s) of the target players?
The instructions	10 marks	❑ Are your instructions clear ❑ Are your instructions grammatically correct? ❑ Do your instructions explain the set-up, rules, and parts of your board game? ❑ Do your instructions promote your theme? ❑ Does it answer the need(s)/ solve the problem(s) of the target players?
The design of the game board and game pieces	10 marks	❑ Are your pieces and gameboard attractive to players? ❑ Do your board and pieces have interesting designs that promote the theme?
Design Process in Worksheets	10 marks	❑ Have you finished all the parts in the worksheets? ❑ Have you kept them clean and tidy?
Teamwork	10 marks (individual)	❑ Is the group leader responsible? ❑ Does everyone in the group contribute to the work? ❑ Do all group members communicate well? ❑ Have you done your part?

TOTAL: 50 marks

Part 8: Empathise

- Analyse empathy designs in daily life

Part 8: Empathise

Empathy in design thinking is learning about the people you are designing for (the users).

- Who are they?
- What do they think?
- What do they feel?
- What do they say?
- What do they do?
- What do they care about?

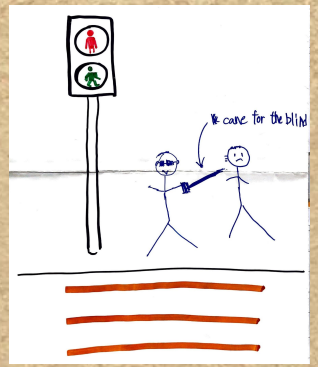


Examples of Empathy Design

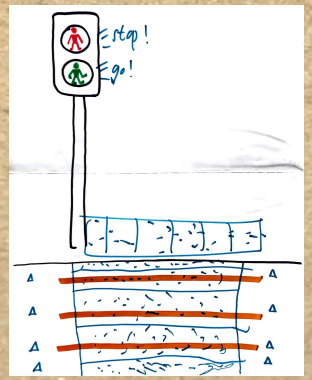
Take a look at the following pictures. Think about what problems/ needs they have and how you would do to modify the design and help blind people. You may draw on the pictures.

	Milk boxes	Pedestrian lights
User	Blind people	
Need	Drink the milk inside	Cross the road safely
Potential problems		
Empathy Design		











Board Games

Worksheet (2): Part 8 Empathy

Name: _____ ( ) Class: _____

(Take out your notes and turn to p.10. Look at Part 8: Empathy and complete the worksheet.)

In the lesson, two empathy designs for blind people were introduced. Your solutions were very creative with nice illustrations. However, how do we describe your ideas in English? Use the hints below to complete the sentences.

Empathy Design 1: A Milk Carton

Hints:

Actions: add, feel *Things: a hole, a straw, braille, opening, side*

Need	Drink the milk inside
Potential problems	Spill the milk because they open it on the wrong side
Possible solution 1 	To solve the problem, we can (action)_____ (a thing)_____ and (a thing)_____ to the carton top. Then, blind people can _____ the hole and put the straw into it safely.
Possible solution 2 	To solve the problem, we can (action) _____ (a thing)_____ to the __top__ of the carton. Then, blind people can _____ the word and open the carton on the correct side.
Possible solution 3 	To solve the problem, we can (action) _____ one more (a thing) _____ to the carton. Then, blind people can easily open any _____ of it.

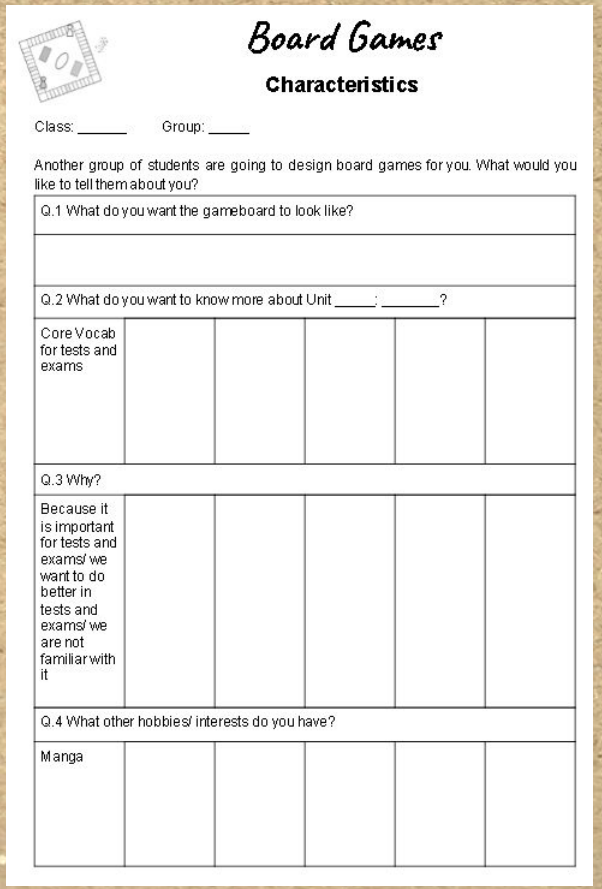
Understanding the needs and likes of target users

Since you are going to design a board game for another group of students based on a unit in your textbook, you need to know more about them. The following questions are some examples. Also, as another group will design board games for you, they will ask you questions as well.

- Who are the players?
- What do they want the gameboard to look like?
- What do they want to know more about the theme/ unit?

	1A	1B	1C	1CD	1D
Theme of the board games	U5: Food	U1: A new start U4: Amazing experiences	U2: Strong, fit and fast	U2: Strong, fit and fast	U4: Amazing experiences
Target Players	1B	1C	1A	1D	1CD

What **other questions** would you like to ask them?



Board Games

Characteristics

Class: _____ Group: _____

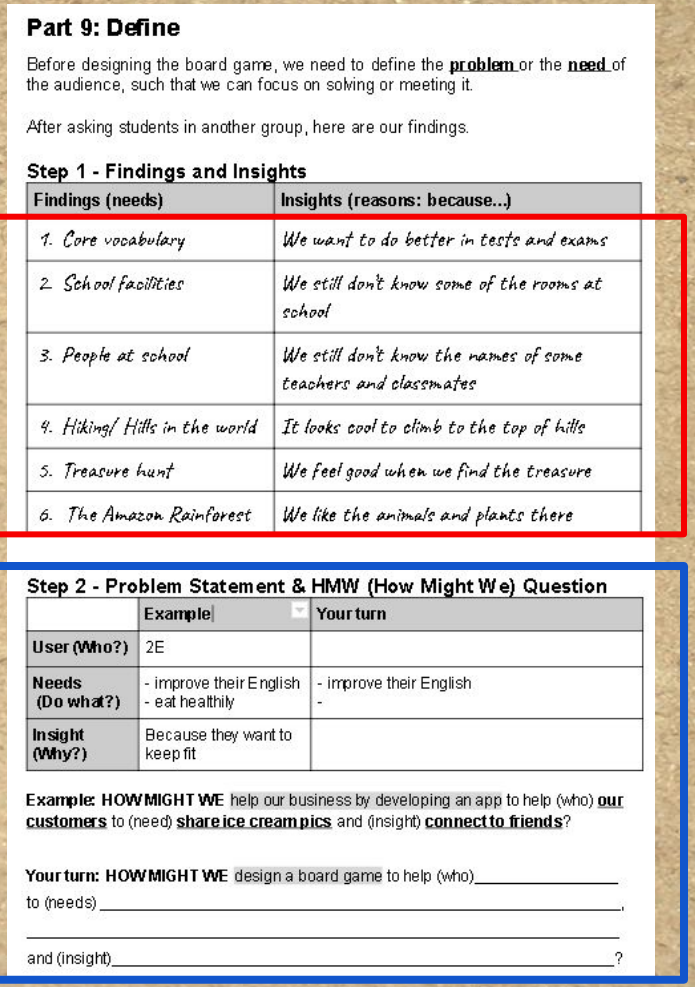
Another group of students are going to design board games for you. What would you like to tell them about you?

Q.1 What do you want the gameboard to look like?					
Q.2 What do you want to know more about Unit _____: _____?					
Core Vocab for tests and exams					
Q.3 Why?					
Because it is important for tests and exams/ we want to do better in tests and exams/ we are not familiar with it					
Q.4 What other hobbies/ interests do you have?					
Manga					

Part 9: Define

From the characteristics list

Brainstorming possible themes of the board game



Part 9: Define

Before designing the board game, we need to define the **problem** or the **need** of the audience, such that we can focus on solving or meeting it.

After asking students in another group, here are our findings.

Step 1 - Findings and Insights

Findings (needs)	Insights (reasons: because...)
1. Core vocabulary	We want to do better in tests and exams
2. School facilities	We still don't know some of the rooms at school
3. People at school	We still don't know the names of some teachers and classmates
4. Hiking/ Hills in the world	It looks cool to climb to the top of hills
5. Treasure hunt	We feel good when we find the treasure
6. The Amazon Rainforest	We like the animals and plants there

Step 2 - Problem Statement & HMW (How Might We) Question

	Example	Your turn
User (Who?)	2E	
Needs (Do what?)	- improve their English - eat healthily	- improve their English -
Insight (Why?)	Because they want to keep fit	

Example: HOW MIGHT WE help our business by developing an app to help (who) **our customers** to (need) **share ice cream pics** and (insight) **connect to friends**?

Your turn: HOW MIGHT WE design a board game to help (who)_____
to (needs) _____,
_____
and (insight)_____?

Part 10: Ideate

To inspire students/ spice things up

- based on their performance in the trial

Part 10: Ideate

How would you design the board game? Use the 4 Thinking Routines to help you brainstorm some ideas for your board game.

Here are some ideas for you. Think about what you can do to make your board game more interesting and fun to play.

(1) The game pieces/ counters/ tokens



- Real objects?
- Using playdough to make them?

(2) The gameboard



- 3-dimensional?

(3) The design of cards/ tiles



- The shape
- One sided/ two sided
- Colours?
- With holes?
- With words and/or pictures?

(4) The actions



- To do something silly, like throwing a toy to opponents to attack others?
- To play paper-scissors-stone to decide on the turns?

Part 11: Writing instructions

- Language support
- Cover most elements of board games

Part 11: Writing instructions

After having some ideas of your board game, it is time for you to learn how to write the instructions. Learn from the following examples and write your own.

Game 1:



Name of the board game:	Chinese Checkers
Number of players:	2, 3, 4 or 6 players
The pack contains:	6 sets of 10 marbles with different colours, 1 hexagon board with each triangle with corresponding colours

Before the game:

- Each player chooses a colour.
- Place the 10 marbles with the chosen colour in the corresponding coloured triangle.

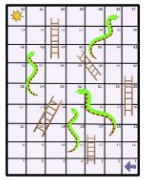
How to play:

1. Take turns to move one marble.
2. Move the marble to an adjacent open space, or jump over other marbles that are right next to the marble.
3. A player can move a marble in any direction, forward or backward, one hole at a time.
4. A player can jump in a straight line over any neighboring marble and can continue jumping over neighboring marbles as long as he desires.

How to win:

The first player who gets all of his marbles to the opposite point of the star wins.

Game 2:



Name of the board game:	Snakes and Ladders
Number of players:	2 or more players
The pack contains:	1 dice, 1 game board, 6 counters of different colours

Before the game:

- Each player chooses a coloured counter.

How to play:

1. Take turns to throw the dice. The one with the highest number starts first, followed by the second highest number and so on.
2. Put your counter on square 1.
3. Take turns to throw the dice and move your counter forward according to the number of spaces shown on the dice.
4. If your counter lands at the bottom of a ladder, you can move up to the top of the ladder.
5. If your counter lands on the head of a snake, you must slide down to the bottom of the snake.

How to win:

- The first player who lands exactly on the last square wins.
- If you throw a higher number than needed to land exactly on the last square, your counter "bounces" off the last square and moves back.

Game 3:



Name of the board game:	Aeroplane Chess
Number of players:	2 to 4 players
The pack contains:	1 dice, 1 game board, 4 counters (aeroplanes) of 4 different colours

Before the game:

- Each player chooses a colour.
- Place the aeroplanes in the corresponding hanger.

How to play:

1. Take turns to throw the dice. The one with the highest number starts first, followed by the one on the left and so on.
2. A player must throw an even number to move an aeroplane out onto the launch area. If the player already has one or more aeroplanes out of the hanger, he can choose to move an aeroplane to the launch area or move one that is already out of the hanger.
3. Move aeroplanes clockwise around the board.
4. If a player throws a 6, he can either launch or move a piece, and then throws again. However, if two more 6s are thrown, the piece(s) moved by the two previous 6s are sent back to the hanger.
5. If a player's piece lands on a space with an opponent's aeroplane, the opponent's aeroplane is attacked and sent back to their hanger.
6. If a player's piece lands on a space with its own color, it jumps four spaces forward to the next space of its own color in addition to any attacking that is done.
7. If a player's piece lands on a jump point, the player jumps by following the dotted line to the space across the board in addition to any attacking that is done.
8. When a player's piece has reached the final stretch of its own colour, the piece continues its moves toward the centre to its home base. If the dice value is too big to land it on the home base, it must move backward and go away from it.

How to win:

- The first player who gets all of the four aeroplanes to the home base wins.
- The remaining players continue the game to determine the runner-ups.

Game 4:



Name of the board game:	10 Days in Europe
Number of players:	2 to 4 players
The pack contains:	1 game board, 48 country tiles, 19 transportation tiles, 4 sets of tile holders

Before the game:

- Place all country and transportation tiles face down next to the game board and mix thoroughly.
- Each player has two card holders. Fill the tile holders without taking turns. Each player draws a tile, looks at it, and places it into any open location, DAYS 1-10, until all players have placed ten tiles in their holders.
- Stack the remaining tiles, face down, to form a draw pile. The three top tiles are then placed, face up, next to the draw pile to form three discard piles.

How to play:

1. Take turns to
   - draw a tile from the draw pile or the discard piles, replace one of his tiles in the holder and discard the old one, or discard the drawn tile onto the discard piles,
   - or swap two tiles in the holder.
2. If the player takes a tile from the draw pile, all tiles in the discard piles, except the top ones, are shuffled together to form a new draw pile.
3. Players must connect countries by foot, ship or aeroplane.
   - By foot: If two countries are connected with a blank line, solid or broken, on the map, or located next to each other, no extra tile is needed.
   - By ship: Two countries can be connected on the sea or ocean designated on the ship tile.
   - By aeroplane: If two countries are of the same colour, they can be connected by an aeroplane tile of the same colour.

How to win:

- The first player who collects country and transportation tiles to complete a ten day journey, where each day connects to the next day, across Europe wins.

Part 12: Report on Prototyping

Part 12: Report on Prototyping

Write down the details of your board game below.

Name of the board game:	
Number of players:	It is a game for _____ players.
The pack contains:	
Before the game:	
How to move:	_____ _____ _____ _____ _____ _____ _____ _____
How to win:	The first player who _____ _____ wins.

Part 13: Test

More language support

Part 13: Inte st

Name of the board _____

Test players: _____

Circle the number that shows uch they agree or disagree with the following statements.

Statements *(How much do **you** agree with the statement that…)*	1 = strongly s agree	2 = disagree	3 = agree	4 = strongly agree
1. The **game** looks beautiful (board, pieces, cards, etc)	1	2	3	4
2. The game **design** is creative (board, rules, etc)	1	2	3	4
3. It is **fun to play**.	1	2	3	4
4. The **rules** are clear.	1	2	3	4
5. The **name** of the board game is catchy.	1	2	3	4
6. It can help us **learn English**.	1	2	3	4
7. It can help us **learn more about (theme)** _____ _____.	1	2	3	4
8. We **like** the board game.	1	2	3	4

How would the testers change the board game to improve it? Use 'Imagine if' to brainstorm ideas and write down two of their suggestions.
(Hints: How to make the board game more beautiful? Fun to play? Helping in learning English and the theme?)

IF...

(a) They would like to *change/ add/ delete/ combine* _____
_____

(b) They would like to *change/ add/ delete/ combine* _____
_____

Part 14: Modification

Part 14: Modifying the Board Game

Step 1: After testing, what problems with your board game have you found? Write at least one.

E.g. We have found that our board game is **too boring**.
E.g. We have found that our board game is **not colourful enough**.
E.g. We have found that the **rules** are **too simple/ complicated/ not clear**.
E.g. We have found that there is **not much English element** in our board game.
E.g. We have found that our board game **does not totally match** the **theme**.

1. We have found that _____
_____
2. We have found that _____
_____
3. We have found that _____
_____

Step 2: How will you change/ modify your board game? Use 'Imagine if' to brainstorm ideas. Write at least one.
(Hints: How to make the board game more beautiful? Fun to play? Helping in learning English and the theme?)

IF...

1. ☐ We will *change/ add/ delete/ combine* _____
_____
2. ☐ We will *change/ add/ delete/ combine* _____
_____

Step 3: Which change(s) would you make? Put a tick in the box in Step 2.

Part 15: The final version

At least
ONE visible change



Part 15: The final version

Write down the details of your board game below.

Name of the board game:	
Number of players:	It is a game for _____ players.
The pack contains:	

Before the game:

_____

_____

_____

How to move:

_____

_____

_____

_____

_____

_____

_____

_____

How to win:

The first player who _____

_____ wins.

Teacher's daily work

1. Briefings and debriefings before and after lessons every day
2. Raising questions and finding solutions
3. Making sure every teacher is on the right track
4. Catering for diversity in every class
5. Sharing tips if any class goes faster



3.5 Writing reflections

1. **Design Thinking:**
    - Revision, favourite stage, improvement, potential projects
2. **Teamwork**
3. **Achievements:**
    - Contributions, likes, things learnt
4. **Challenges:**
    - Dislikes, difficult parts
5. **Conclusions:**
    - Advice for students and teachers next year



04

Reflections

Fun and a sense of achievement

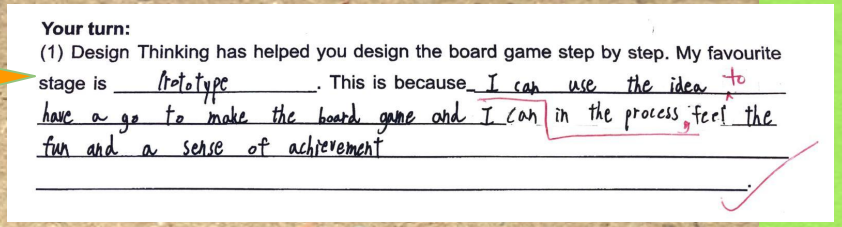
Willingness to explore other methods

The spirit of Makerspace

More exposure to English in daily life

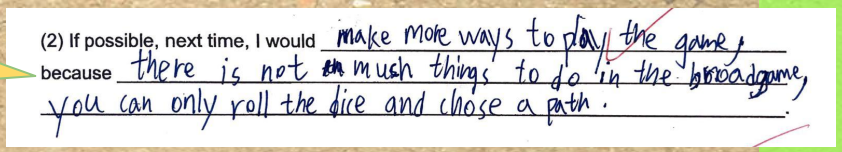
Interpersonal Communication

Perseverance

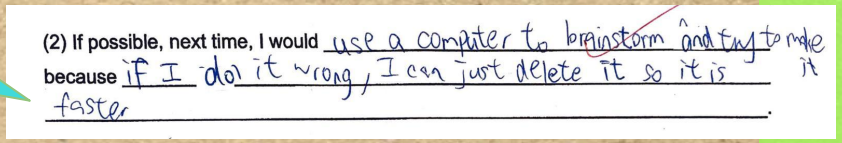


Your turn:

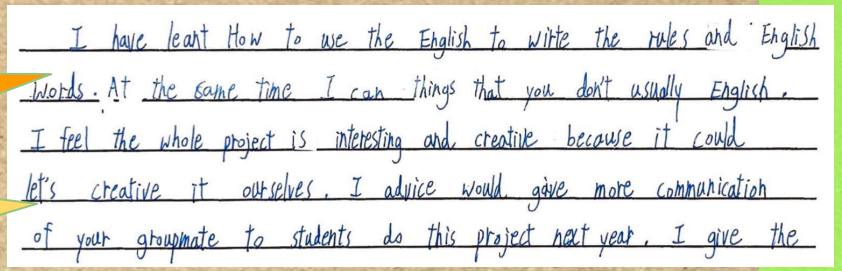
(1) Design Thinking has helped you design the board game step by step. My favourite stage is prototype. This is because I can use the idea to have a go to make the board game and I can in the process, feel the fun and a sense of achievement.



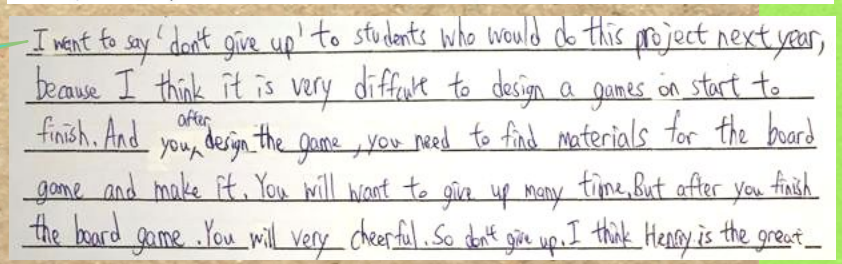
(2) If possible, next time, I would make more ways to play the game, because there is not much things to do in the broadgame, you can only roll the dice and chose a path.



(2) If possible, next time, I would use a computer to brainstorm and try to make it faster because if I do it wrong, I can just delete it so it is.



I have learn How to we the English to write the rules and English words. At the same time I can things that you don't usually English. I feel the whole project is interesting and creative because it could let's creative it ourselves. I advice would give more communication of your groupmate to students do this project next year. I give the



I want to say 'don't give up' to students who would do this project next year, because I think it is very diffcult to design a games on start to finish. And after you design the game, you need to find materials for the board game and make it. You will want to give up many time. But after you finish the board game. You will very cheerful. So don't give up. I think Henry is the great

Teamwork

Time management

Budgeting

I learned teamwork in this board game, because in this team, some people I don't know well, so I feel a little shy to cooperate. And after this board game, me and them became more comfortable than before. I feel very happy. Because I can not only make new friends, but also know that teamwork is very important.

I would suggest that they know how to allocate time, because our team is not due to lack of time, so we can do better than now. I would suggest that the teacher should increase the cost of buying materials to thirty to forty yuan. Because when I buy the materials of our group, a box of chess pieces costs more than twenty yuan. Therefore, I think there should be a little increase in material costs.

Teachers' feedback

Under the influence of the pandemic, it has not been an easy journey. We have to constantly make changes on our teaching schedule and materials to cope with the changing schedule. As we were still new to this project, we also have to make changes according to the reactions and learning outcomes of our students. Despite all the difficulties, **it has been a fun project**. **Students** had a chance to practise design thinking and **gained a non-conventional learning experience** while teachers could witness the students' **creative energy**.

Teachers' feedback

It was a challenging yet fulfilling process to have achieved a certain goal with my students. Throughout the whole project, we had to adjust our teaching schedule and teaching materials according to students' needs and understanding. With endless briefings and debriefings meetings, we were able to design the best materials to get students to be on task and finish the whole board game unit. **The best moments must be seeing students playing their self-made board games with lots of laughters.**

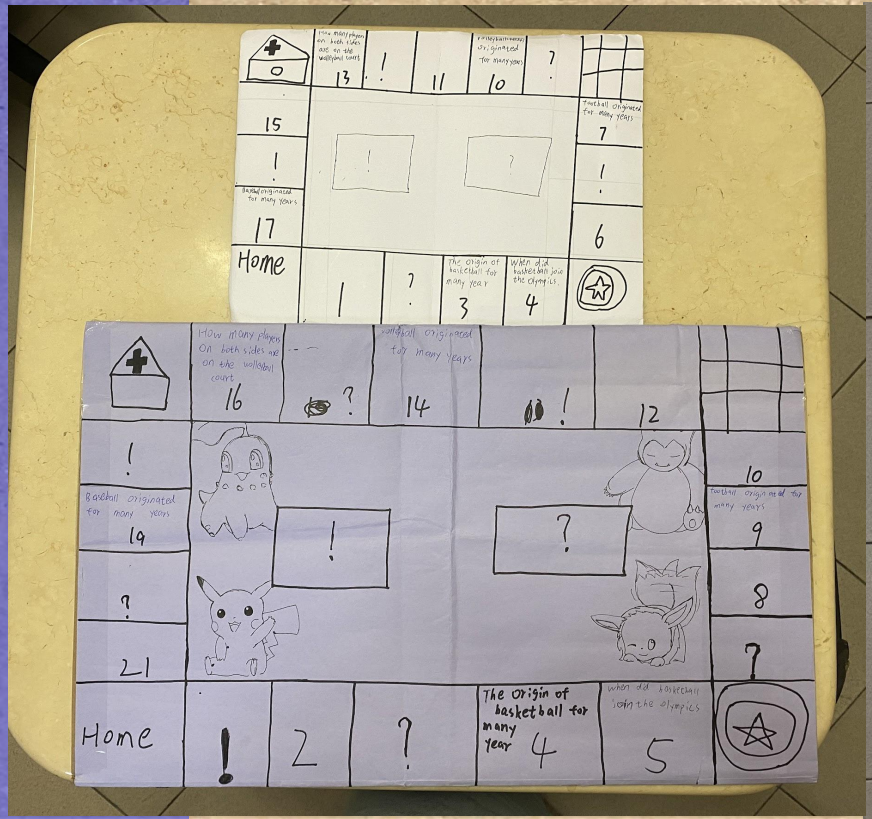
Teachers' feedback

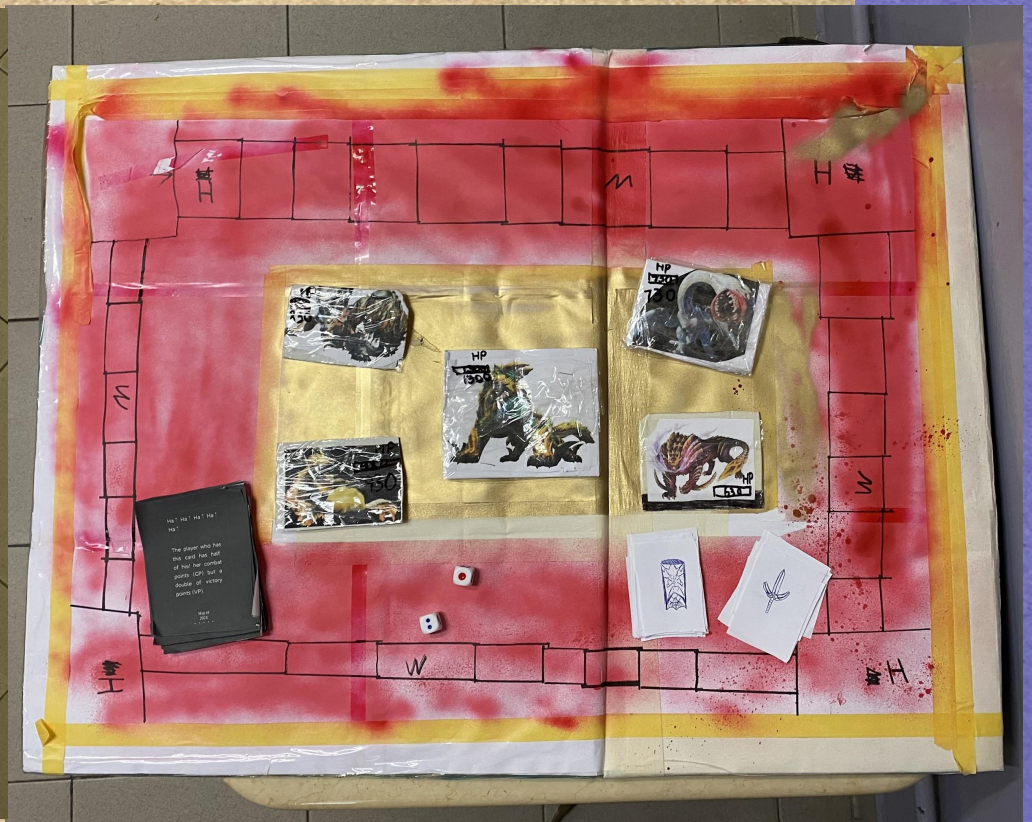
This project has taught me that **Makerspace is a mindset** and it should **not be bounded by the language**. Also, as there are fun elements, it can be **an opportunity for teachers to motivate students**. In addition, a lot of **generic skills and values** can be infused. With careful consideration and planning, it is feasible to **cultivate students this thinking habit** and make it happen in English classrooms.

05

Achievements & Appreciation

5.1 Achievements





5.1 Achievements





stop one time ☹

choose one photo to answer

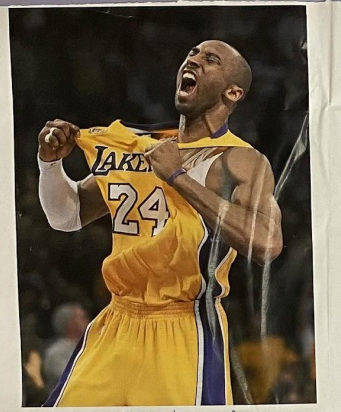
throw the dice one more time

move forward to 32

choose one photo to answer

move forward to 21

choose one photo to answer



Who is he ?

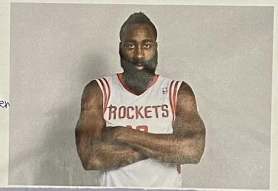
A. Bruce Brown B. Kobe Bryant

choose one answer

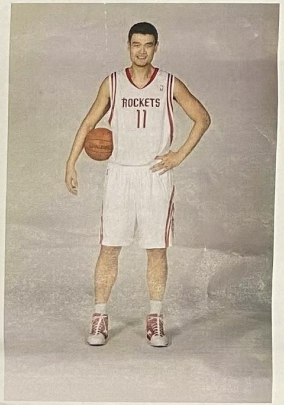
choose one answer

Who is he ?

A James Harden



B De Andre Jorden



Who is he?

A. Yao Ming B. Liu Wei

Choose one answer

choose one photo to answer

move forward to 33

backward to 12

Let's do sport !

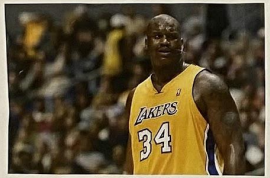


Who is he ?

A. LeBron Raymone James

B. Stephen - Curry

choose one answer



Who is he ?

A. Shaquille Rashaun O'Neal B. Micheal Jorden

card

the end

stop one time

move forward to 12

draw a quesion card

backward to start

start

5.1 Achievements



N.C.K.Z gameboard
EASY
HARD
SPORTS CARD
Action CARD
Take Turns card
Skip one turn
take card
take card
take card
1 starting point

5.2 Appreciation

- S.1 English teachers
- S.1 class teachers
- The NETs
- The English panel head
- The principal

06

Tips for Sustainability

6.1 Curriculum Mapping

- How can we integrate the project into the existing curriculum?
  - The reading texts?
  - The grammar items?
  - The listening tasks?
  - The writing tasks?
  - The speaking tasks?
- How can we make the project meaningful to students?

6.2 Language Teaching

- How can we infuse the target language items into the project?
  - Grammar items
  - Vocabulary

- What language skills do students need in the project?
  - Group discussions
  - Expressing ideas

6.3 Scale

- Keep the project manageable
  - Time
  - Students
  - Teachers
  - Resources
  - School facilities (Unit 1)
  - Analysing a bike (Unit 2)
  - Poster of a new sport (Unit 2)
  - Mini-lessons about food (Unit 5)
  - Board Games (Year based)

Makers @ School

- **Empathize** our students
- **Define** their needs and problems
- **Ideate** possible pedagogies
- **Prototype** teaching materials and lesson plans
- **Test** and reflect

