PK Year POI Unit Plan

- Plants

NOTE: Updates after edit are in the shade of brown of this writing.

Teacher Candidate Name: Joel Michael Pope
Subject and Grade Level: UOI (Unit of Inquiry), PK (4 - 5 years)

Full Curriculum Map

Learner Population

There are 42 students in total in the grade level. They are in three different classes, each of which has fourteen students.

One girl's father is Korean, and she lived in South Korea for the first two and a half years of her life. She moved back to China and has lived with her mother and grandmother, who are both Chinese for two years. Korean and Chinese both remain first languages, with her English also well developed. She is in one class. The two other classes each have one student who are Chinese and have Chinese as their first language but were born in and lived in the United States before moving back to China one year ago. All three of these students hence have differences in their cultural background and experience, as well as experiences with language.

The rest of the students in the grade level are all Chinese also. Some may have lived in other areas of China before but are all now living in Wuxi City, Jiangsu Province, near Shanghai, where the school is located.

There will be some difference in cultural background, particularly in the case of these three students. This must be remembered in the setting of activities. Many of the student's home towns are unique and form a part of their identity. Where possible, this needs to be remembered in the setting of activities.

There are five students across the grade level who are new to the school this academic year. The rest have been studying at the school for either one or two years. The IB program was only introduced one semester ago. The two areas that have been explored are "How we change and how we are different to others?" under the IB transdisciplinary theme 'Who we are.' and "What other living things do we share the planet with?" under the IB transdisciplinary theme 'Sharing our planet'. This has provided explorations in the topics of growing up and how we change as we grow, other parts of our life

experience that change, for example, seasons, as well as explorations of plants and animals and an introduction to the importance of not polluting or damaging the environment. Related English language was introduced and practiced here. Although production may still be developing, all students present at the school last year, had experience inquiring with English as an input language. The new students also have some experience with English from previous schools, although may need a little support to settle in initially.

In the first semester of the upcoming year, the two transdisciplinary themes that will be covered are 'How we express ourselves' , with a central idea of "people create signs and symbols to convey information", and 'Who we are' with a central idea of "choices people make affect their health and wellbeing".

Through further school activities, students are developing their skills, including fine motor skills, as shown through their art works, social and emotional learning playing and working independently and with friends, and early maths, working with shapes and numbers for example.

They have had much opportunity for free inquiry, play and expression, for example through their art work.

They will bring all of this to the new academic year.

All students in the grade level are in normal developmental ranges for all skills. There are no students identified with special needs.

Language Profiles

Due to the age of the students, we focus on speaking and listening in our consideration of language, both current level, and development and assessment throughout the year. We will use the stages of language development, based for example on Krashen and Terrell (1983).

There is a range of levels across the grade level, including in each class. These are from early in the speech emergence stage - stage 3 - for the newer students, to entering the advanced fluency – stage 5 - in the case of the two who have lived in the United States and a small number of others who have also had rich exposure to more native English environments.

All students are still English language learners. With the inquiry-based program taught and led in English, there is a focus on comprehensible input, with visuals, modelling and graded language, using techniques for example described by IRIS Center (2011).

With this, there will be differentiated scaffolds, supports and challenge for different levels with the activity and assessment.

For example, stronger students will have the opportunity to support the teacher in the creation of the

English based environment and in supporting their classmates. During small group and individual interactions, they can be provided with more advanced grade language to challenge their vocabulary and listening comprehension. They will be challenged with extended expectations for production activities, including the use of more sentences and longer sentences.

Students still at earlier stages of English language development can be provided with increased supports, for example translanguaging, some L1 support as necessary for more challenging concepts, increased language modelling from the teacher, appropriately graded language during small group and individual interaction, and expectations catered to their current level during production activities.

All students also have the opportunity to express themselves and their ideas in multiple ways, as well as only language, for example, art work.

Unit Details

Transdisciplinary Theme: Sharing our Planet

(February - April, *Semester 2*)

Central Idea: People take responsibilities from plants and can gain resources from them.

Lines of Inquiry

- The structure and function of plants.
- Plants provide resources for people.
- People take care of plants.

Learner Profile Attributes

Inquirers

Throughout the unit, students will have the opportunity to ask questions about the different types of plants and plant materials they encounter and discuss and research the answers with teachers. They can do the same for habitats. They will grow different plants and have the opportunity to inquire about how to best care for these.

Principled

Throughout the explorations in this unit, students will investigate the importance of plants for animals and humans alike, seeing why it is important to take good care of them. This will support them to develop principles and ethics with regards to protecting the planet.

Caring

Students will develop their sense of warmth, love and care as they grow and care for plants, while continuing to care for each other through collaborative work.

Subject Focuses

- Science
- Math
- Social Studies

Note: Language is focused on by our school in every unit. The language goals are shown in the table below.

Standards for the Unit

Taken from the school's own scope and sequence adapted from IB.

MATHEMATICS

1. Construct simple graphs and charts to describe concrete materials (e.g., after sorting leaves, children create a graph illustrating the various kinds of leaves, marking the number of leaves in each category, and describing how they sorted the leaves).

2. Engage with adults in discussions about time e.g., the name of the day, or month. (We will discuss the times at which different plants grow.)

3. Match a completed pattern.

SCIENCE

1. Able to make careful observation and comparison of things or phenomena and discover their similarities and differences.

2. Able to put forward questions according to observation results, and courageously guess the answers.

3. Like to experience new things, and often ask some relevant questions.

4. Able to perceive and discover the basic habits of frequently seen animals and plants, as well as their growth and changes.

5. Develops an awareness of what various plants and animals need for growth.

6. Be aware of the role of plants in sustaining life (e.g., providing oxygen, food).

Social Studies

1.Discuss classroom responsibilities in daily activities, e.g., watering plants, setting tables, feeding fishes;

2. Begin to understand the close relationship between human beings and nature, and know to respect and cherish life, and protect the environment.

3. Display understanding of conserving and preserving natural resources (water; endangered species) as well as products made from natural resources (paper);

ISTE Standards

ISTE Standard 1 - Empowered Learner

1b. Build networks and customize learning environments to support personal learning goals.
1c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

Students will work on their own personal or group projects. This will include creations of plants at various points during the procedure, at which time they will be able to use a variety of resources. The same at the end of the unit, when they will work with classmates to make a habitat environment. There will be the opportunity for feedback from the teacher and peers throughout this process.
Students will also be able to work with their parents and get feedback on Seesaw.

ISTE Standard 2 - Digital Citizen

2b. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
2c. Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

Students will continually develop their awareness of the concept of the respect for the property of others with real life objects and work, in preparation for doing so online as they become older.
As students document each other's work, taking photos, they can build the habit of asking if it is OK to take a photo and showing the photo taken to the classmate first before it is used.
Working with parents on the Seesaw account, students can begin to become aware of appropriate behaviours online.

ISTE Standard 3 - Knowledge Constructor

3a. Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
3c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
3d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

Students can work with teachers throughout the unit to photograph plants and use an App to determine what plant it is.

Students can also work with teachers throughout the unit to see how the internet can be used (teacher leading due to age) to find out information about the plants they have photographed.

As students grow their own plants, they may face challenges of how to look after the plant correctly, and need to overcome this.

ISTE Standard 4 - Innovative Designer

4a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

4c. Develop, test and refine prototypes as part of a cyclical design process.

Students will be able to begin to practice these processes throughout the unit, especially the habitat creation part.

ISTE Standard 6 - Creative Communicator

6d. Publish or present content that customizes the message and medium for their intended audiences.

Students will create videos recorded by the teacher for their 'Open Mic' at the end of the unit, in which they introduce some of their work. This is intended to be a more professional presentation. A bar code will be generated from it and put up around school.

ISTE Standard 7 - Global Communicator

7b. Collaborate with others using digital tools to work toward common goals while making positive contributions and responsibly managing their digital presence.

7c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

There will be much pair and small group work throughout the unit, in which students work with their team towards a common goal. They will document this process by taking photos.

Overarching Goals:

This is a content based unit, on a science/nature based unit of inquiry topic.

The focus is on plants, including how we and animals rely on them. This introduces the bigger idea of the importance of plants on the planet and how living things are connected.

Within this, we will explore what plants need to survive and grow, the structure of plants and also how plants are different from each other. This will take further the bigger idea of what humans need, first looked at with regards to humans in the previous unit on health. The link can be considered. It also explores the bigger idea of differentiation between living organisms.

In the final part of the unit, plants will be extended on, to look at habitats in general including with a focus on thinking organization.

In line with the student's ages, and the nature of IB, there is a big focus on skills development and personalized learning pathways.

By the end of the unit, students are to be guided to develop their thinking and knowledge with regards to the above mentioned areas, including the ability to discuss and express ideas in both languages. They are also guided to develop their team collaboration and communication skills as they work with partners and small groups on team projects. Opportunities are given to practice fine motor skills, including use of a pen for drawing and painting, and early math skills, focusing on patterns.

A point to note with regards to outcomes for English language is that English is used for daily life language and as the principal teaching language for our UOI. In this there is a big focus on the use of comprehensible input and indeed other key factors of optimal input, for example interesting and relevant, of high quantity and non-pressurizing, for a low affective filter as outlined by Dr. Stephen Krashen, for example, in Krashen (1982). Students are not pushed to speak until they become ready.

However, as students are ready, a focus on speaking production does become a big focus of unit activities. This is because, living in China, with the majority of students having non-English environments at home and in society, and with their being less natural inclination to use English with classmates and the majority of staff around school, who share the same first language, purposeful activities need to be created within class to support students to gain competence in English speaking in different scenarios. The opportunities are also to support the development of the 21st century skill of 'Communication' and the World-Readiness Standards of 'Interpersonal Communication' and 'Presentational Communication' for example.

Objectives:

Please refer to the 'Lesson Sequence' section below.

Language Goals, where assessed in the unit and Relation to Content Goals	**21st Century Skills Addressed**
- Students make at least five sentences to introduce a rainforest picture they have put together. This is done during the cut and stick rainforest activity during **Tune In**. Students introduce their work to the teacher they are working with. A teacher model is provided first. As content goals, students are developing their awareness of different habitats of animals, who live in different layers of the rainforest. They are also developing their awareness of the reliance of many different animals for both food and a home. Fine motor skills are developed here as students cut and stick.	Self-direction (Students work on the activity largely independently) Social responsibility (Students are being reminded of the responsibility we have to look after plants and the rainforest) Creativity (Students have the option to add their own illustrations to finish the picture. Communication (Students need to introduce their work)
- Students each make at least one sentence to say what they know and one sentence to say what they want to know about the topic of plants. This is done during the KWL during the **Tune In** stage. Students introduce their sentences to the small group they have been sitting with during the completion of the charts. This supports the content goal of developing knowledge of plants as students need to reflect on what they already know and what they might want to know, which in itself, can deepen understanding. Students also practice fine motor skills as they draw.	Thinking (Students need to think about what they already know and what they want to know.) Creativity (Students have the opportunity to draw their ideas in the way they choose). Literacy Skills (If students are ready, they have the opportunity to write words or short phrases related to their ideas.)
- Students can use English to introduce four factors that plants need to grow. This is completed during discussion as students are planting and taking care of their plants during the unit, starting at the **Tune In** stage.	Communication literacy (Students are communicating their ideas) Information literacy and technology and digital literacy (Students can take photos and will draw what they see as they keep a record of their plant growing.)

Students are showing their development towards the content knowledge goal of knowing what plants need to grow, as they learn, reflect and share. Through this activity, they are practicing the skill of looking after plants.	Social responsibility (Students are practicing taking care of plants)
- All students introduce the stems, roots and leaves and give a minimum of two further sentences to describe a plant they have made or drawn. This is completed as students introduce the plant they made with a partner during the **Finding Out** stage to a small group in the consolidation session. "Here is the stem. Here are the roots. Here are the leaves." used as a model sentence. Through this activity, students are directly demonstrating the content goal of knowing the different parts of the plant. They are also developing their fine motor skills as they construct or draw.	Communication skills, collaboration and social skills. (Students work together with a team.) Problem solving (Working in a team could bring with it challenges and problems due to different opinions. Students will also have to problem solve to work around these. There may also be problems encountered in the construction process.) Technology literacy (Students can have the opportunity to document their own work, through taking photos.)
- All students introduce a minimum of five foods that come from plants, saying which part of the plant we get them from. This is completed during small group discussions as a follow up to the **Sorting Out** activity, in which students sort plant based food based on the part of the plant they come from. Model the sentence structure, "_____ is from the _____." "_____ is a (fruit/seed)." For example, "Potato is from the roots. *Required language (taught during the earlier part of the **Sorting Out** phase and introduced earlier*	Communication skills, collaboration and social skills. (Students work together as a team to sort out foods based on which part of the plant they come from.) Problem solving (Working in a team could bring with it challenges and problems due to different opinions. Students will also have to problem solve to work around these.) Perseverance (The painting done here will be very big and so take a long time, requiring perseverance.) Thinking (Students may need to think as they sort out the different foods.)

also): roots, flower, stem, seeds, leaves, fruit. Again, students are showing progress towards the content goals of increased knowledge of the plant, including the different parts of the plant, and the foods we get from each part of the plant, and which part of the plant we get each food from. During the painting part of this ***Sorting Out*** activity - see below - they also practice their fine motor skills.	
- All students able to introduce an AB pattern they have drawn, using the structure "(A),(B),(A),(B). This is an AB pattern. Students introduce the AB pattern they have made to a teacher during the AB patterns activity during the **Going Further** stage. This is related to the math skill content goal as students need to be introduced to and practice making patterns.	Communication skills, collaboration and social skills. (In the first activity, students work together to make the required pattern) Creativity (Students can practice creativity to make an AB pattern of their choice.)
- All students use one sentence to describe what they 'See', one sentence to describe what they 'Think' and one sentence to describe what they 'Wonder' – a question they have – about a habitat picture. Completed as part of the 'See, Think, Wonder' activity during the **Going Further** stage. First in the group, and then in the pairs, for the habitat picture they are studying, students first draw a picture for each of what they see, think and wonder, and then introduce it to the teacher. For the paired one, this is presented to the class, which is where students show they can introduce the sentences. Examples and sentence models provided. "I see _____." "I think _____." "I wonder _____." Students with higher competence in English,	Thinking (Students consider what they can see in pictures, and also practice metacognition as they are practicing organizing their ideas into different categories.) Communication skills, collaboration and social skills. (Students complete the second 'See, Think, Wonder' activity in pairs independently of the teachers.) Global awareness (Considering habitats, students begin to consider this, at least on the physical geography level)

stretched to give extended detail. This is related to the content knowledge goal of developing awareness that different habitats exist in the world that differ in many ways and have different plants and animals living in them. Students also practice their fine motor skills through their drawings on the 'See, Think, Wonder' chart - see below and painting and models they make for building up the habitat environment that they also do.	
- At the end of the unit, all students complete a minimum of seven sentences in a video for the March Open Mic in the **Acting** stage, length adapted based on English competence. For this Open Mic, students have a choice between introducing a piece of work from the unit, introducing a plant they are taking care of and growing, introducing different types of plant, and introducing a technical aspect of plants – either different plant parts, or what plants need to grow. Begin discussing with students three weeks before the end of the unit. They have one week to decide what they would like to introduce in the last week of the unit for the Open Mic. Students have free choice over what to introduce here. However, in all cases, they will be consolidating knowledge based on the content goals related to plants.	Communication (The big focus is on communication and presentation here.) Creativity (Students have autonomy over preparing what they want to introduce, which can include, combining different ideas they have learned, and creating new work.
- All students use one sentence to say something they have learnt about plants. Completed the "Learnt" part of KWL chart during **Reflection**. Students are consolidating knowledge and learning related to the content goals of plants.	Thinking (Students need to think about what they have learnt.) Creativity (Students have the opportunity to draw their ideas in the way they choose). Literacy Skills (If students are ready, they have the opportunity to write words or short phrases related to their ideas.)

Prerequisite Skills:

For their English, students need to be at a minimum of the speech emergence stage (stage 3), again, as described by Krashen and Terrell (1983). This is to ensure they are able to engage in the English production tasks as per the unit activities and objectives, and also to begin to express themselves more freely during discussion on the unit concepts, without being pushed to speak beyond their current level, which has negative effects, as described by Krashen (1982). Speaking requirements will be adjusted as necessary to meet student levels.

The unit contains partner and group activities, in which students will need to work with others with minimal teacher support. Hence, the 21st century skills of 'Communication', 'Collaboration' and 'Social Skills' need to be developed to this level.

Students will take their own photos with an iPad or phone, so they must have developing competence in this skill.

Finally, there are numerous arts activities involved in the unit.

Students are expected to be able to manage arts equipment, including paints for painting, loose material, different types of pen for drawing, and clay, independently of the teacher, as well as cutting with scissors and gluing.

Summative Assessment:

Throughout the unit, students will build up a physical portfolio of all the work they have done, as described in the lesson activities and shown below. These will each have short, descriptive feedback from the teacher. This will be sent home at the end of the unit.

For easier access, an interactive portfolio will also be built, using Seesaw. This will allow for families to be updated on student work throughout the unit, and also support family communication, important as outlined by Howard et al. (2018) in their Strand 6. Parents are able to support with discussing unit content with students at home, also supporting discussion in both languages.

The portfolio will also contain videos of their 'Open Mic' performance at the end of the unit and any of the other English speaking activities.

Teachers will finally write an overall unit report on the students at the end of the unit, including ticking a box against some criteria, chosen by the grade level teachers from the school's scope and sequence, and with written feedback on the student on the unit.

Formative Assessment:

Each week will have hands-on activities, in which teachers are able to spend time observing and checking in individually with all students on progress in skills and thinking regarding the unit topics.

During whole class discussion time, a range of formative assessment activities can be used to check in with everyone, for example, all students doing actions based on concepts being described - acting out a growing plant or parts of a plant, number cards for multiple choice questions, heads down and heads down, thumbs up questions.

Lesson Sequence

Note that the exact number of lessons is not always set in stone, so as to allow teachers to move at a more natural pace for their class, and to allow room for deeper exploration as necessary.

All resources are available on the school's shared drive folder.

Outdoor Learnings (Excursions out of School)

Aim for three of these throughout the unit. The stages of inquiry are shown below. The exact dates will depend on the arrangements made with the locations being visited and the school leaders and marketing who will need to support. Arrangements can begin to be made as early as possible before the unit begins.

- Outdoor Teaching 1 (During the Tune In phase of inquiry)

  Visit to a local strawberry picking farm. Strawberries are famous in Wuxi. This outdoor learning should happen early on to immerse students to plants and their products in nature from the beginning. Students can walk around the farm here and pick the strawberries, led by the guide. Discuss with them what they see and smell.

- Outdoor Teaching 2 (During the Sorting Out Phase)

  Visit to the Wuxi Botanical Garden. Students can experience the different plants here, complete a scavenger hunt, and collect natural materials in the places where this is permitted, to be used for art work back at school. At this stage in the inquiry, students will have explored what plants need, the different plant parts and diversity in plants. These can all be consolidated as we see plants in the botanical garden.

- Outdoor Teaching 3 (During the Going Further Phase, or Reflection phase)

  Visit to the local park. Habitats have been explored. The park can be discussed as another diverse habitat that we have very close to our school. As the first activity here, students can collect different types of leaves and flowers, and sort them into categories. First, leaf or flower; second, colour; third type of leaf/flower. Then they can choose categories themselves.

  As the second activity, for the flowers and plants they have collected, they use them for a paint printing arts activity. This provides exposure to a new art form and sensory experience.

Tune In

Before the 'Tune In' stage begins, send a message to parents with two notices:

- **Ask if any would like to come to school to support the planting of the tomato plants, which will happen at the end of the 'Tune In' stage, as outlined below.**
- **Explain that as a home project, students and parents can work together to grow a plant of their choice. Send links on Taobao for different seeds and video links to instructions as necessary. At the same time, send home the plant observation log that students can record at home.**

Before the Tune In stage starts also, remember.

- **Have all individual student tomato plants ready to be planted.**
- **During one regular circle time, discuss with students what plants they want to grow as a class in the school plant garden. Options include,**
  - **Cucumber**
  - **Eggplants**
  - **Peppers**

Part 1 (3 lessons):

- Watch the video 'The Rainforest'. It is related to why animals need plants. It focuses on rainforests and the animals that height levels of the rainforest. Group discussions are had about this video. The purpose is to activate and extend prior knowledge for discussion. **(Lesson 1)**

As a follow-up activity, students have a picture of a rainforest. They then have other pictures, some of which will be of objects that belong in a rainforest – a snake – some which might not – a car. They sort which ones belong in the rainforest and stick these on to their rainforest picture. **(Lesson 2**

- We now have a discussion and make a mind map on the ways in which humans need plants. **(Lesson 3)** Use PPT - 'How Humans Need Plants' - for support as necessary.

Part 2 (1 lesson):

- Students draw pictures to complete the "Know (K)", "Want to Know (W)" and sections of

their KWL chart - Know (K), Want to Know (K), Learnt (L) for plants..

Part 3 (1 lesson):

Students plant at least two plants – tomatoes and beans are recommended. They take care of these and keep a record log of their growth throughout the unit. As part of this process, the factors a plant needs to grow - space, air, sun, water and warmth - are discussed and introduced.

Finding Out

Part 1 (2 lessons)

- As a home assignment, students take a photo of a plant of choice.

Back at school students share these to the class.

Go through each of the students' plant photos. Allow them to share something. Then share interesting facts together with the class. Discuss any questions students have.

If students have many questions, take some time together to research the answer. This models for students how we can do research. (Lesson 1)

Students then use artistic materials around the classroom to make their own recreation picture of their plant. **(Lesson 2)**

Part 2 (2 lessons)

Introduce the different parts of the plant and their basic function as per 'Vocabulary Mini Lesson 1' here. **(Lesson 1)**

As a follow up to this, have a small project in pairs. Students choose to create a plant model that must clearly include the roots, stem and leaves.

They can choose to either draw the plant, or build it using construction material and loose parts. **(Lesson 2)**

Sorting Out

During the Sorting Out phase, students will choose a plant that gives us food and will paint this.

All students will paint their plants on one 4m long role of card paper or fabric. This can be obtained from the school's resource room.

Once students have chosen their plant, a clear picture needs to be printed for each student for them to follow as they paint.

Part 1 (1 Lesson)

- We extend our ideas about plant parts to also include flowers, seeds and fruit.
- Note that for different parts, different parts will provide food we can eat.

Create a class mind map, discussing examples of foods that are from each of the different types of plant parts.

Part 2 (2 lessons)

- Class project. Each student chooses a type of plant that gives us food. On a long piece of fabric (4 metres long), students paint their plants next to each other.

  (a) First a group sorting activity.

  Students work in groups of three.

  They have pictures of all the different types of plant chosen by people in the class. They cut these out and label them according to which part of their plant (flower, fruit, seed, leaf, stem, root) we can get food from. **(Lesson 1)**

  (b) We complete the class painting. **(Lesson 2)**

Part 3 (1 lesson)

(New addition.)

- **Now that we have discussed in depth the different foods that can come from plants, we**

explore further uses of plants, focusing on tea, which is a big part of Chinese culture.

First show students a tea bag. Ask what it is and elicit answers.

Once we have elicited that it is tea, ask students to share anything they would like about tea.

Ask where tea comes from, and guide students towards the answer of plants.

Show many photos of different types of tea plant.

Next show them the different dried fruit and tea bags for different types of tea.

Allow students to touch, smell and interact with this.

Next prepare tea together using tea of the student's choice.

Note: Following on from this activity, a tea table will be set up in the classroom. Students can use this to touch and smell different types of tea. With teacher supervision, they can make tea.

Going Further

During this stage, students will have the opportunity during free choice project time to make habitat environments for each of the six habitats being studied.

These can be made on large 1m x 1m pieces of cardboard, which can be prepared in advance. These can be set up in the arts area of the classroom, with the many pictures from each habitat to be used for reference.

Part 1 (2 lessons)

- Introduce concept of patterns using plants. Look at and discuss patterns we can see in plants and nature.

Formalize this to introduce basic pattern types – "AB", "ABC", "ABB" and "AAB". Students work in pairs to create the pattern type asked for by the teacher using loose materials. **(Lesson 1)**

- Students create their own AB patterns on paper. **(Lesson 2)**

Part 2 (8 lessons)

Focus on 'Habitats' and the skill for showing thinking of "See, Think, Wonder". (Extend beyond plants to other living things.)

- Students use a song video to be introduced to different habitats. Create a class mind map of what we know about the different habitats. **(Lesson 1)**

- Focus on habitat vocabulary, as per 'Vocabulary Mini Lesson 2' here. **(Lesson 2)**

- Continue to explore different habitats through books. **(Lessons 3 - 4)**

Note, rainforests were already explored earlier in the unit.

Students have explored oceans previously, so we focus on the other four now.

Read through the books 'Freshwater Pond Biomes' and 'National Geographic: In the Desert' with students, to explore these two habitats in more depth. These are from Epic! **(Lesson 3)**

Read through the books 'About Habitats: Polar Regions' and 'National Geographic: In the Desert' with students, to explore these two habitats in more depth. These are from Epic! **(Lesson 4)**

- Students complete two "See, Think, Wonder" activities to be introduced to this routine and activity. They do this by looking at a picture of a habitat, and saying what they see, think, and wonder (what questions they have) about it. They do this for a first picture in groups with teacher guidance - all students work to complete the chart together, each drawing one picture for each section.. The second, they do in pairs with more independence from the teacher.

  Concept of 'See' introduced. Students complete this in their group with the teacher. **(Lesson 5)**

  Concept of 'Think' introduced. Students complete this in their group with the teacher. **(Lesson 6)**

  Concept of 'Wonder' introduced. Students complete this in their group with the teacher. **(Lesson 7)**

  Students work on second activity in pairs. **(Lesson 8 - 9)**

- Class project. Use arts materials to build habitats in the classroom. **(Ongoing during free choice time)**

Reflecting

3 Lessons

- Class review and discussion on what we have covered in the unit. **(Lesson 1)**
- Students complete the "Learnt" part of their KWL charts. **(Lesson 2)**
- At the end of this unit, students create a self-assessment. They self-assess their English speaking, presenting, working with others, listening and "drawing and making". **(Lesson 3)**

Acting

No set lessons.

Done with individual students throughout different times in our schedule.

- Students introduce a piece of work or knowledge related to plants at the April Open Mic event in English. A video is made of them doing their speech.
- Students add some of the plants they have been growing to the school's plant garden.

Use of Technology:

- Seesaw used throughout the unit to communicate with parents and also to create a portfolio of all student art work.

Details and examples for all home assignments shared here. Further communication shared also.

This supports parental communication, but also the speaking domain as it forms a method for sharing speaking videos.

- Camera used during home assignment to take a picture of plants. This supports technology literacy in the form of photography skills.

Students will later describe their photos and artwork they make from them to each other, so support is provided in the speaking and listening domains.

- During explorations, plant identification Apps can be used, for example, for example iPlant.

This supports students develop research skills and technological literacy as they can use the class iPads to identify plants around school and during outdoor learnings to the park and a botanical garden.

This can support development in the speaking and listening domains as students are able to discuss the plants they see and also early reading or writing domains if these are used as the basis for looking at or practicing writing word forms.

-Resources available on class iPads for students to explore during free choice project time. **These support further English exposure. They support the listening and can support the early reading domain. The Epic! books can also be used at home.**

- Books on the class Library from Epic! (getepic.com)

  "Plants!"

  "National Geographic Kids. Seed to Plant"

  "Plants are Alive!"

  "How do Plants Survive?"

  "How are Plants Helpful?"

  "Iconic Plants of the World 1"

  "Iconic Plants of the World 2"

- Videos and PDF's of multiple books from the school's shared drive on the topic of plants.
- Other songs and videos. For example

  "The Habitats Song"

These can all provide further reference material for students to use and practice independently.

- During different class activities, students can use the class iPads to take their own photos and videos to document their work.

This practices technology literacy in the form of video and photo taking.

The domains of speaking and listening can be supported as students talk about their documentation as they progress through the project.

- Throughout the inquiry of the unit, students can be supported by the teacher to look up plants and habitats they might be interested in. This can also be done as research for the "Open Mic" presentation if students want to introduce specific plants.

Technology literacy is practiced here.

Supporting in the speaking and listening domain is provided as students can discuss their research. Early reading is also supported as students are exposed to word and sentence forms.

- In preparation for the presentation of their project at the final "Open Mic" event, students can work with the teacher to prepare the PPT of the photos of their project.

This will provide support in the speaking and listening domain as students are preparing for presentations.

Differentiating Instruction:

All some at more advanced levels, all students are, to at least some extent ESL learners. The key accommodations for supporting this are as follows.

- A big use of comprehensible input, using techniques as described by IRIS Centre (2011), including graded level speech, and a big focus on visuals, context and body language.
- For new technical terms and language, dual teaching in the students first language of Mandarin Chinese, so as to support additive bilingualism, as described for example by Howard et al. (2018, p.11).

As described above, there is some variation in English levels across each class and grade level. Some strategies for dealing with this include:

- For individual pieces of project work, one of the three class teachers works to support a small group of 4 - 5 students. This allows more personalized and differentiated support. Howard et al. (2018) for example, note that there is no real difference between homogeneous and heterogeneous groupings. Hence groups can be varied for different activities throughout the

unit in order to give students the opportunity to work a range of different classmates and class teachers to support development of 21st century skills of 'Social Skills'.

- Throughout the supporting free choice time in the UOI and throughout the school day, individual time can be spent with different students for more personalized comprehensible input. Personalized time will be spent with students as they prepare for their final 'Open Mic' presentation and present other work.
- During partner work, for example, the 'See, Think, Wonder', working on building patterns, and working on making a plant, because it is students working independently of teacher support and on the same task, groups can be heterogeneous for language level so students with more language experience can help their peers.
- Students with more English language experience can also work with the teacher to build the general English environment within the class.

Different student interests and backgrounds:

- Opportunity for students to explore something personal from home, taking a photo of a plant they find themselves. The Comprehensible Classroom (2019) emphasizes that content-based learning is student centred. We can work to take this as far as possible.
- Choice over different activities. For example, students can choose what they want to introduce for the 'Open Mic'. They can choose between construction and drawing for the paired project, making a plant with leaves, a stem and roots.

Students with special needs:

- There are no students in the group identified with special educational needs. However, in the case that there were, the most important consideration would be to make accommodations personalized to their specific needs. An individualized learning plan (IEP) could be drawn up.

  Specific supports however might include.

  - Use of a pen or paintbrush grip to support with fine motor activities for needs here.
  - Adjusted seating so closer to the teacher, as well as use of larger materials if visual support was needed.
  - Use of a hearing aid device and more visual supports in the case of auditory difficulties.
  - Accommodations during activities, for example, more time.
  - Many concrete examples.

Next Steps:

Following this unit of inquiry, we will proceed to the next unit of inquiry, focusing on light and shadow, as described in the curriculum map.

Language and ideas from this unit will continue to be reviewed during circle times and short review periods during the day.

Any emerging interests or projects that students show, can continue to be supported during our free choice project time which we have as part of our day.

Similarly, any skill development needs for individual students are the group that show during this unit can be supported through separate project time activities in the following unit.

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