

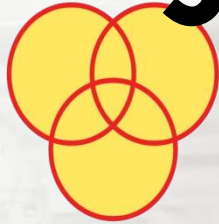
HỘI THẢO CHÍNH SÁCH GIÁO DỤC ASEAN: KỸ NĂNG HỌC TẬP CHUYÊN SÂU CHO HỌC SINH THẾ KỶ 21

**ASEAN DEEP LEARNING POLICY SERIES:
EMPOWER STUDENTS WITH 21ST CENTURY DEEP LEARNING SKILLS**

HÀ NỘI, NGÀY 22 THÁNG 8 NĂM 2014



Science: Seamless Learning Programme



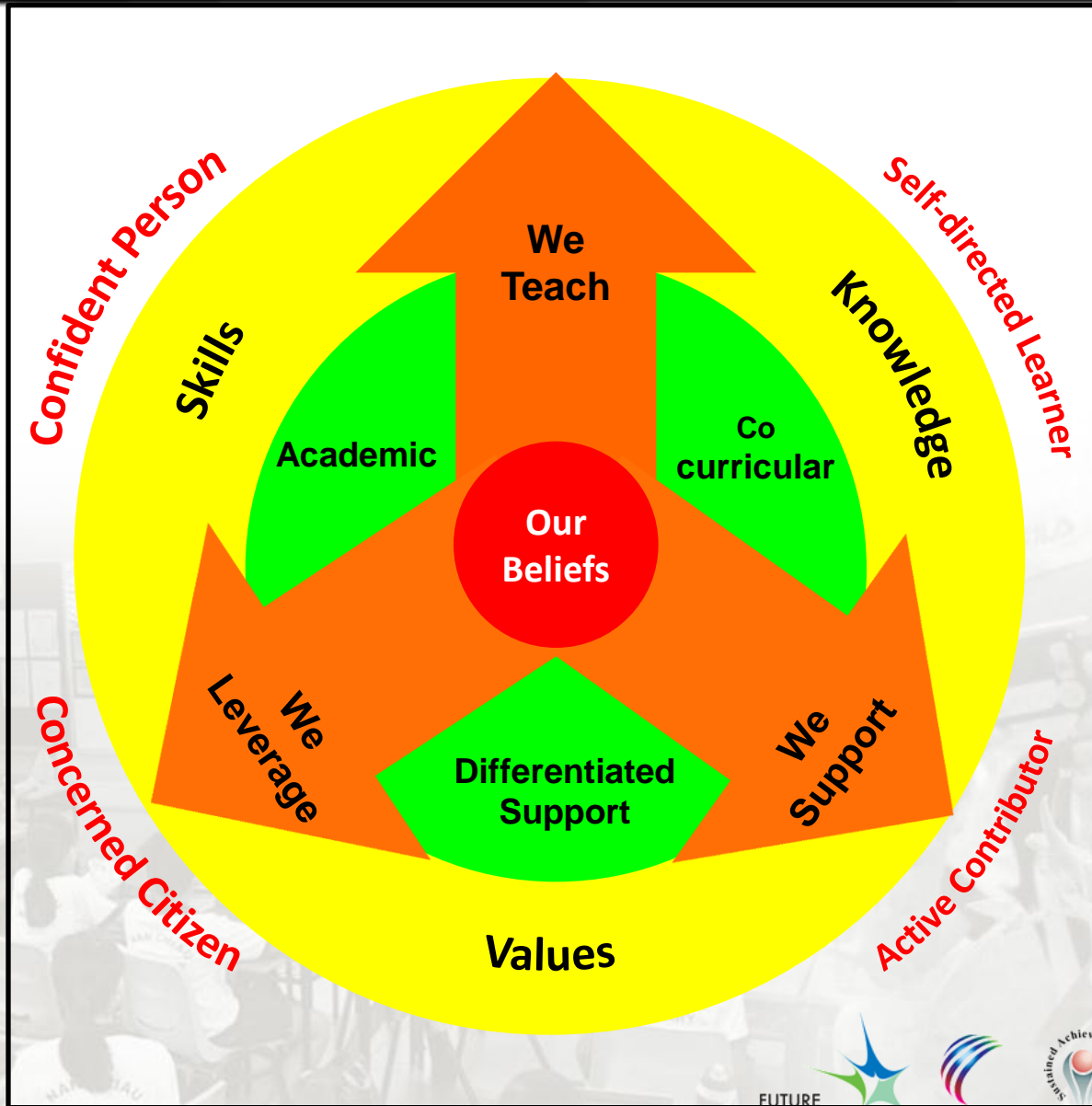
Founded 1947

南侨小学

Nan Chiau Primary School

Our Curriculum Framework

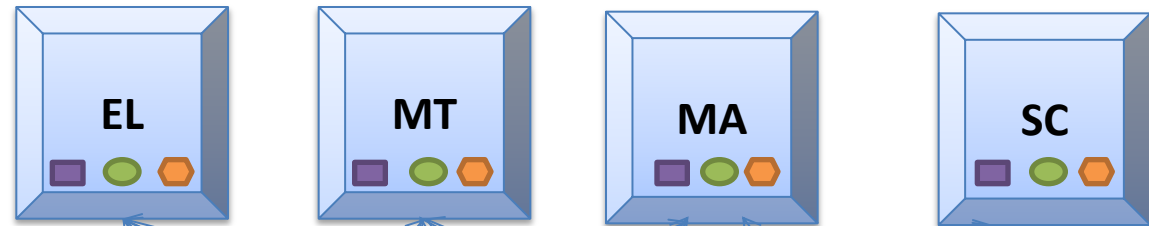
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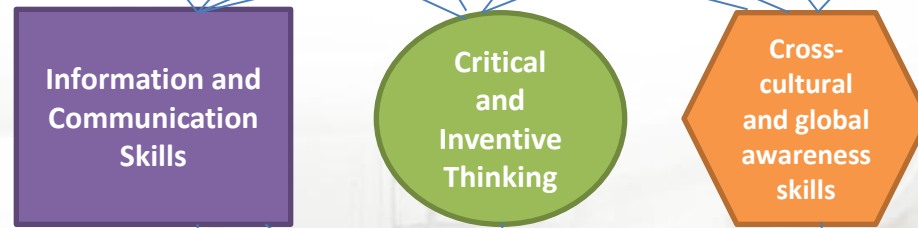
Our Curriculum Design

南侨

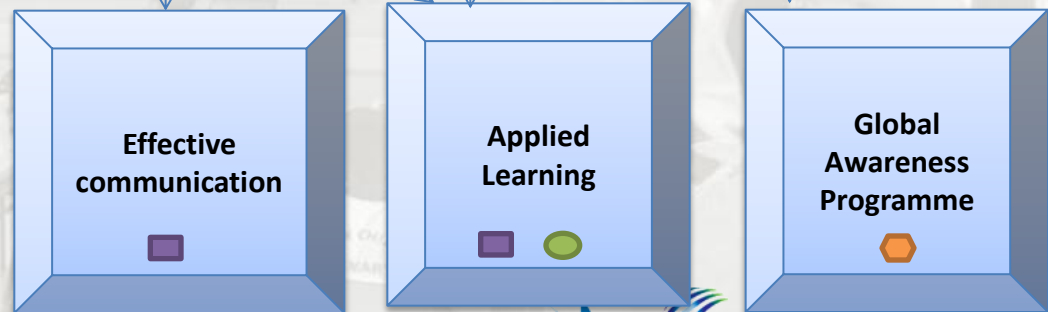
**Centralised
Syllabus/Curriculum**



21st CC skills



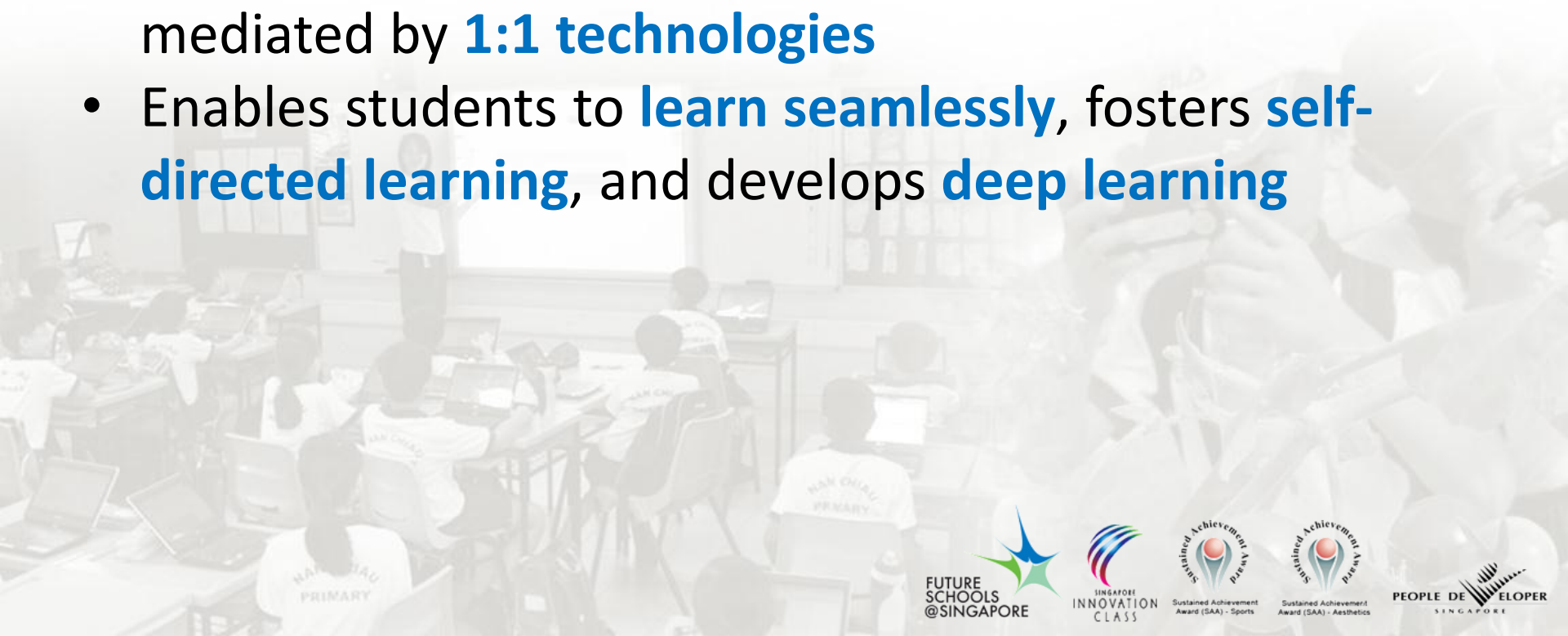
**School-based
Curriculum/Programme**



- The programme leverages on 1:1 computing and a "mobilised" curriculum to innovate and value-add to the core domains, i.e. (1) pedagogy and content, and (2) assessment, of the curriculum.
- Value-adds to the depth and breadth of the content covered in the science curriculum by:
 - extending curriculum time learning for anywhere, anytime (pedagogy)
 - matching content with pupils' cognitive needs (content)

Inquiry-based Seamless Learning of Science 南侨

- Based on the **inquiry-based approach**
- Uses the Science syllabus **5E Instructional Model**
- Re-designed the curriculum to factor in student inquiry learning across **formal and informal settings** mediated by **1:1 technologies**
- Enables students to **learn seamlessly**, fosters **self-directed learning**, and develops **deep learning**

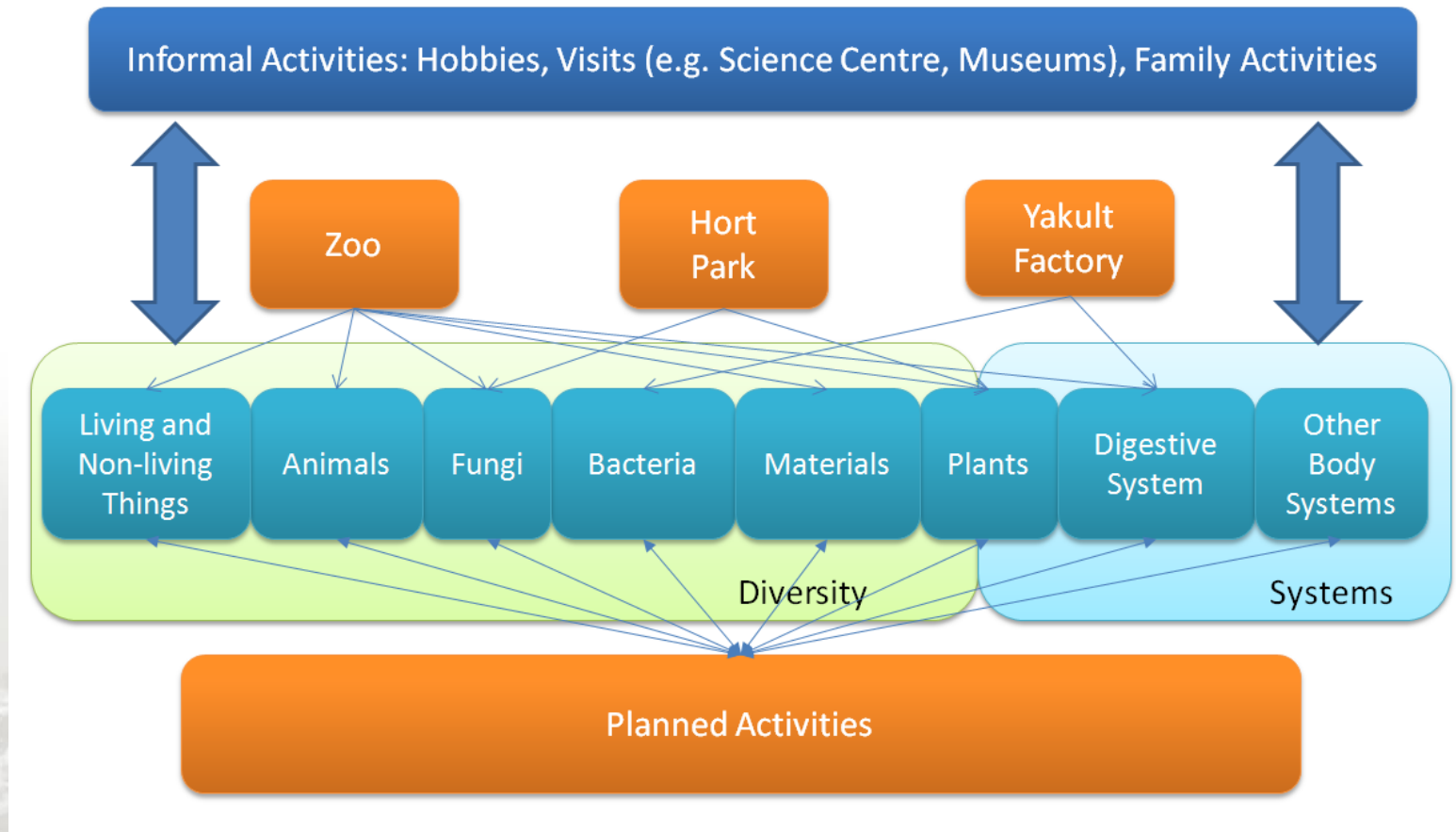




P3 & P4 Classes

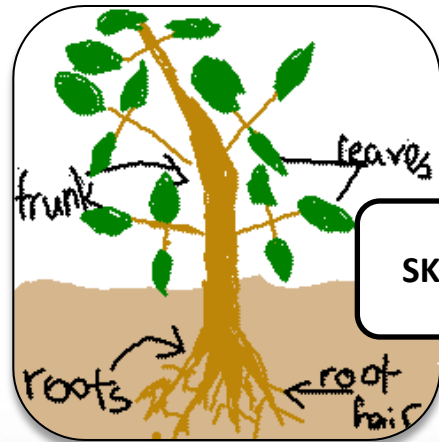
The P3 Science Mobilised Curriculum

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Multi Content Creation

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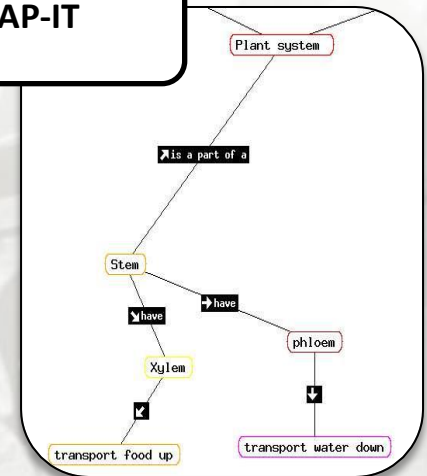
SKETCHBOOK

GOALS OF
LESSON

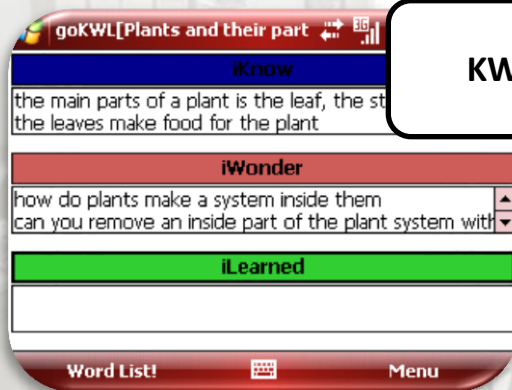
PHOTOTAKING



MAP-IT



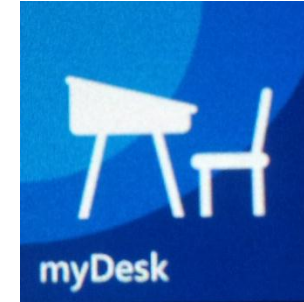
KWL



EXPERIMENT
(VIDEO)



Elements of the SC lesson package

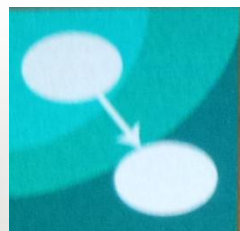
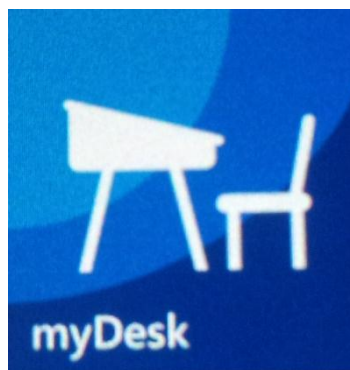


“WE Learn”

Customized curriculum

Features of Windows Phone / Tablets





MapIt



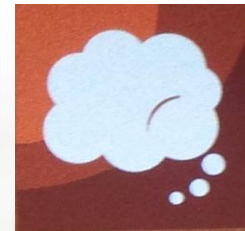
SketchBook



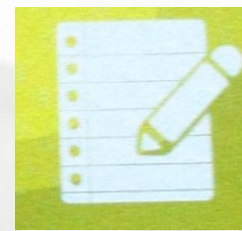
KWL



Recorder



Blurb



NotePad

Applications in MyDesk

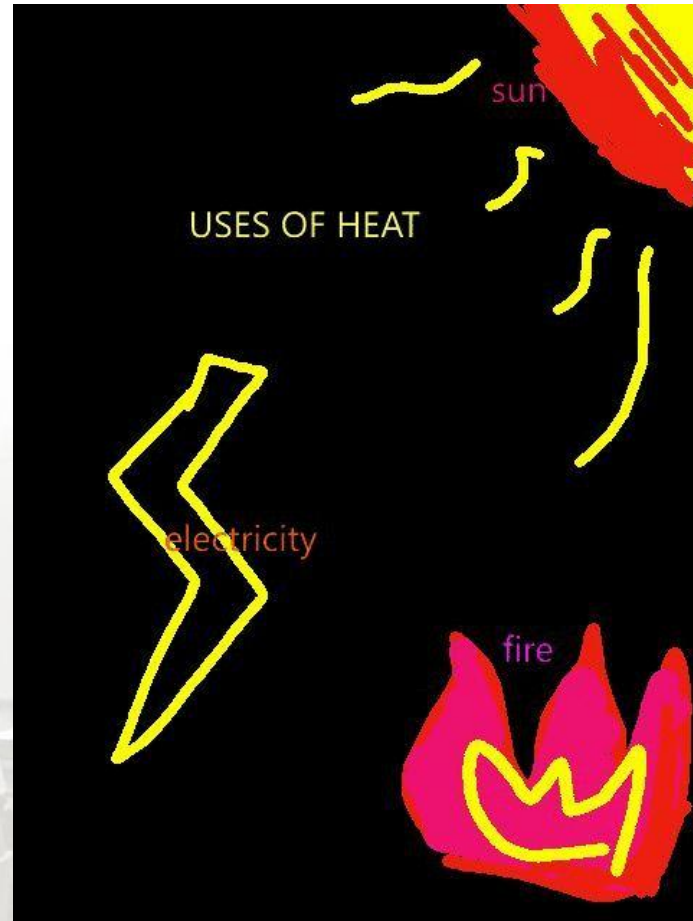
Students' Artefacts



Uses of Heat

Making real-world connections

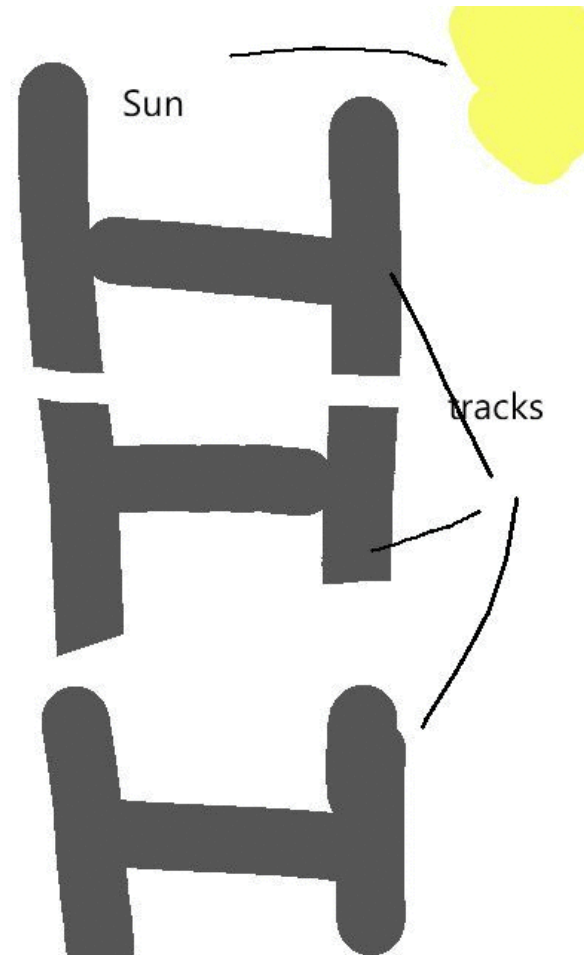
- Students took photos of sources of heat that they find in their daily lives and relate how they are being used.



Making real-world connections

- Students observed effects of heat in their daily lives and describe how heat causes expansion and contraction, which in turn affect their lives.

Effects of Heat



Surface the misconceptions
and prior knowledge students
may have



Characteristics of Insects

Insects have a hard outer
covering

Insects have 6 legs and
antenna

Insects' bodies are divided
into 3 parts -
head, thorax and abdomen

Insects lay eggs

To assess and monitor students' progress in the mastering of the topic through time

KWL: KWL for Body System

I Know

I know that our heart pump blood to the other parts of the body.
I know that the body system is skeletal system, circulatory system, muscular system, digestive system and respiratory system.
i know that the digestive system is to break down food into a form that can be absorbed in the blood.
I know that the circulatory system is to transport food, oxygen, water and waste materials in the blood around the body.
I know that the body respiratory system is to exchange gases with the air we breath.
I know that the skeletal system is to work together with the muscular system to enable the body to move.
I know that the muscular system is to work together with the skeletal system to enable the body to move.
I know that when we eat things the first body part that it passes through is the gullet.
I know that blood vessels are to send blood all around the body.
I know that every part of the body is made up of trillions and trillions of cells.
I know that there are veins on our body.

I Wonder

I wonder how many bones are there in our body altogether.
What are nerves?
I wonder how does our fingernails grow?
Why whenever we cut our fingernails, it will not be pain.

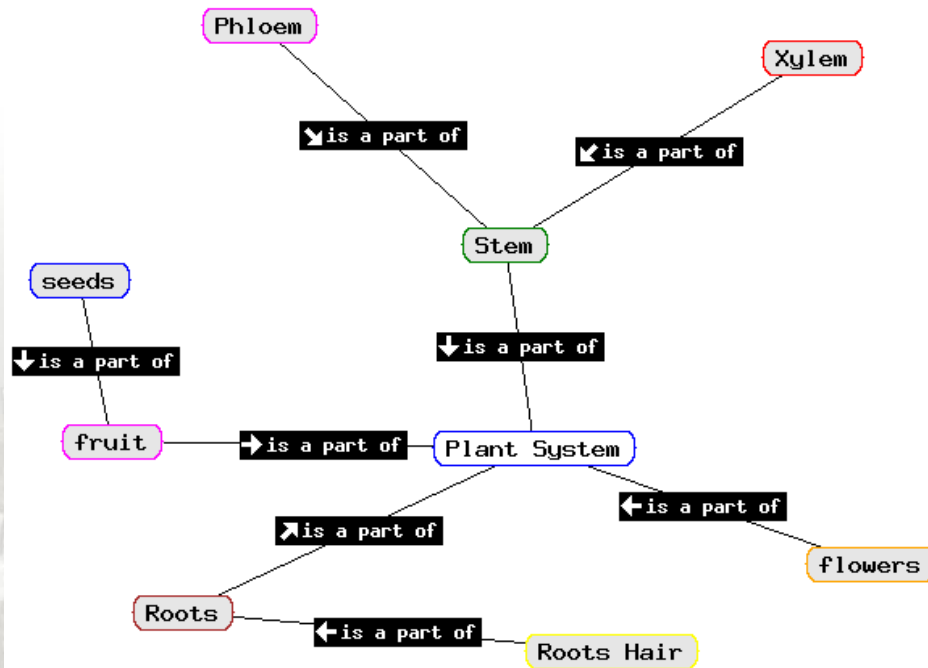
I Learned

There are 206 bones altogether in our body.
Fingernails and the toenails grow from a point near the roots below the skin, at the base of the nail where the nail is.

Students' artefacts - MapIt

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Students relate what they have learnt for plant system with other topics learnt earlier e.g. Living and Non-living Things



Phloem

Phloem sends the food that the leaves make to the rest of the plant parts.

→ is a part of → [Stem](#)

Plant System

Roots

It holds the plant firmly to the ground.

→ is a part of → [Plant System](#)

Roots Hair

It absorbs nutrients and food then it transport to the roots.

→ is a part of → [Roots](#)

Stem

The stem sends the food that the roots absorbs to the branches and leaves.

→ is a part of → [Plant System](#)

Xylem

Xylem transport nutrients from the roots to the other plants part.

→ is a part of → [Stem](#)

flowers

Flowers grow into fruits.

→ is a part of → [Plant System](#)

fruit

The fruit protect the seeds.

→ is a part of → [Plant System](#)

seeds

The seeds help the plant to reproduce.

→ is a part of → [fruit](#)

myLearning Web Portal

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Classes - myLearning Web Portal - Windows Internet Explorer

http://116.12.55.253/

File Edit View Favorites Tools Help

McAfee

Favorites

Welcome to Facebook - L... NanChiauPri's Channel - ... PaC@Gov MOE Intranet Homepage icon mail SSOE Portal - Infohub Welcome to NCPS Website Login - myLearning Web ...

Classes - myLearning Web Portal

Page Safety Tools

MyDesk Classes Lessons Users Profile Logout

All Classes 24

[+ Create a New Class](#)

Filter by Year:

- ☐ 2011
- ☒ 2012

Class	Teachers	Number of Students	Number of Lessons	Year
P3-A Science	Jenny Lee	48	7	2012
P3-B Science	Ong Ngiam Seng	43	10	2012
P3-C Science	Jessy Low	43	7	2012
P3-D Science	Ong Ngiam Seng	25	7	2012
P3-E Science	Siti Hajar	41	8	2012
P3-F Science	Muhammad Raime	40	6	2012
P3-G Science	Wong Soon Teck, Tan Swee Meng	27	6	2012
P3-H Science	Jessy Low, Haryani Idirs	40	8	2012
P3(2012) Master Class	ncps	8	2	2012

Internet | Protected Mode: On

EN 1:26 PM 30/5/2012

Zoo Trip - 1(e) Shell

Aidan

Feedback:

• Grade:

A well-taken photo! Which group of animal do you think the tortoise belongs to?



slow moving

Providing Grade & Feedback

[Formative] Assessment for Understanding 南侨

- Using varied "entry points" throughout the unit require pupils to apply and demonstrate what they have learned
- Teachers will be able to provide feedback throughout a unit or course of instruction, not just at the end
- Focus on learning and understanding, not just on judging and grading

Affordances of Technology

- Providing students with 1:1 ownership, 24/7 accesses to mobile devices create the potential for learning to take place anywhere, anytime
- The “mobilized” curriculum scaffolds activities for formal learning to facilitate effective inquiry-based learning
- Scaffolds and develop students’ inquiry knowledge and skills so that they could take their own initiatives later for informal learning

Our Observations

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- Motivated students
- Less dependent on the teacher as a source of knowledge
- Ask better question and are able to relate everyday activities to classroom learning
- Students create their own meaning of subject matter
- Resources sharing between peers
- Capable in carrying research and create knowledge individually
- More engaged and participate actively in class discussions and activities

Thank you