1. What is our purpose?

To inquire into the following:
transdisciplinary theme

How the world works: *An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and the environment.*

central idea Matter exists in many forms and can be changed

Summative assessment task(s):
What are the possible ways of assessing students' understanding of the central idea? What evidence, including student-initiated actions, will we look for?

Students will take the role of a scientist and in present an experiment in relation to matter
Method of assessment: Group presentation

Assessment tool: Rubric

Possible student action
Students will be able to explore and identify the different materials and states of matter at home (chair – wood/solid)
Students try to imitate the experiments from school at home
Parents will be able to give feedback on their children using vocabulary or phrases at home or out and about. (Describe objects according to their state or material. 'block is a solid', 'milk/juice is a liquid', 'bottle is made of plastic'.
Students will be able bring in results or objects from experiments done at home

Class/grade: K2 Age group: 4-5 year olds
School: SBS School code: 051913
Title: Matter
Teacher(s): Ho Yip Man, Preston Haddon, Ilia Vialykh, Mark Boreham, Kroo Aoy, Kroo Tan, Kroo Bee, Kroo Aew Hanneri Coetsee, Cameron Brown, Lin Qunfang

PYP planner

Date: 31 July to 22 September 2016

Proposed duration: 80 hour over 8 weeks

2. What do we want to learn?

What are the key concepts (form, function, causation, change, connection, perspective, responsibility, reflection) to be emphasised within this inquiry?

- Change (How can matter change?)
- Function (What do we use the different state of matter for?)
- Form (What are the characteristics of the different states of matter and
- materials?)

Related concepts: Causation, Responsibility
What lines of inquiry will define the scope of the inquiry into the central idea?

- Exploring different types of matter
- Exploring different characteristics of matter
- Different matter can change
- Uses of matter

What teacher questions/provocations will drive these inquiries?
Provocation activities
Students experiment with ice outside. Why did the ice melt? What happened?How can we make it into ice again?
What different materials are there? What are their characteristics?
What is matter like?
What are the similarities and differences?
What are the uses of the materials?
Can the materials change? How?

3. How might we know what we have learned?

This column should be used in conjunction with "How best might we learn?"

What are the possible ways of assessing students' prior knowledge and skills? What evidence will we look for?

Class discussions (Uses of materials, similarities and differences, how they change)

Record observations and take notes about students' current knowledge and understanding. Results are recorded on a concept map.

Observation of student's understanding of the experiments

What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for?

LOI1 - Exploring different types of matter

Students are able to identify types of matter

LOI2 - Exploring different characteristics of matter

Students are able to use vocabulary to describe characteristics of matter and material

LOI3 - Different matter can change

Students are able to predict and describe how matter can change.

LOI4 - Uses of matter

Students describe how they can use different state of matter and materials in their everyday lives

4. How best might we learn?

What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?

LOI 1

Classifying materials

Parent – Child activity: Bring in different materials

describe, sort and classify

LOI 2

testing centres- magnets, scale,float/sink

Cornstarch texture touch and feel

Liquid on speakers

LOI 3

-Experiment of how materials change – freezing water / make ice lollies

Finding materials around the school

-Melting ice race / keep the ice from melting

-Dissolving materials in water, can a solid change its form?

-How long does food take to decay and change its form?

-Candle melting

-Making CO2 - Baking soda and vinegar

LOI 4

-How long does it take to dry fruits outside and does it change?

- In teams student will things made a type of matter

- Dry Ice experiment

Library- exploring books in the library (see resource list)

Music-The different matter musical instruments are made of and how this affects the sound they make (integrated).

Mandarin- Evolution of Chinese characters (stand alone).

IEP- relaxing "chill" corner and alphabet yoga for movement break and self regulation

What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?

Transdisciplinary Skills

1-**Fine Motor Skills** (science experiments);

2-**Organisation** (planning experiments and tasks);

	3-**Formulating Q's** (Researching my findings); 4-**Resolving conflict** (working in a team during experiments); 5-Analysis (seeing relationships in the makeup of objects) Learner Profile & Attitudes **Inquirer**,-Recording students questions to how matter decays and changes via "Wonder wall" **Thinke**r - Predicting how matter will change, discussing the variables of changing matter **Open-minded**- Realising that different materials behave in different ways, documenting how students' understanding has developed with new information. **Curiosity** - Students discovering different properties through our varied experiment, testing their theories of how matter changes, asking questions. **Co-operation**- Working as a team during experiments, working with peers that may not be an initial choice. **Commitment**- Persevere through experiment failures, resolving potential conflict, analysing data.

5. What resources need to be gathered?

Library books: Story books ("Bartholomew and oobleck", "Snow", "Water"), preschool science books ("Change it!", "What is the world made of?")
Resources for experiments (food and fruit, cornstarch, candles, speaker, ice lolly mould)
Computer
https://www.youtube.com/watch?v=5WKU7gG_ApU