FROM POLICY TO PRACTICE:

Implementing the Learning Outcomes for Year 4 Primary Science

CoPE Training May 2019

SCIENCE CENTRE
PEMBROKE MALTA

Why promote …

1. To develop...

Critical Thinking

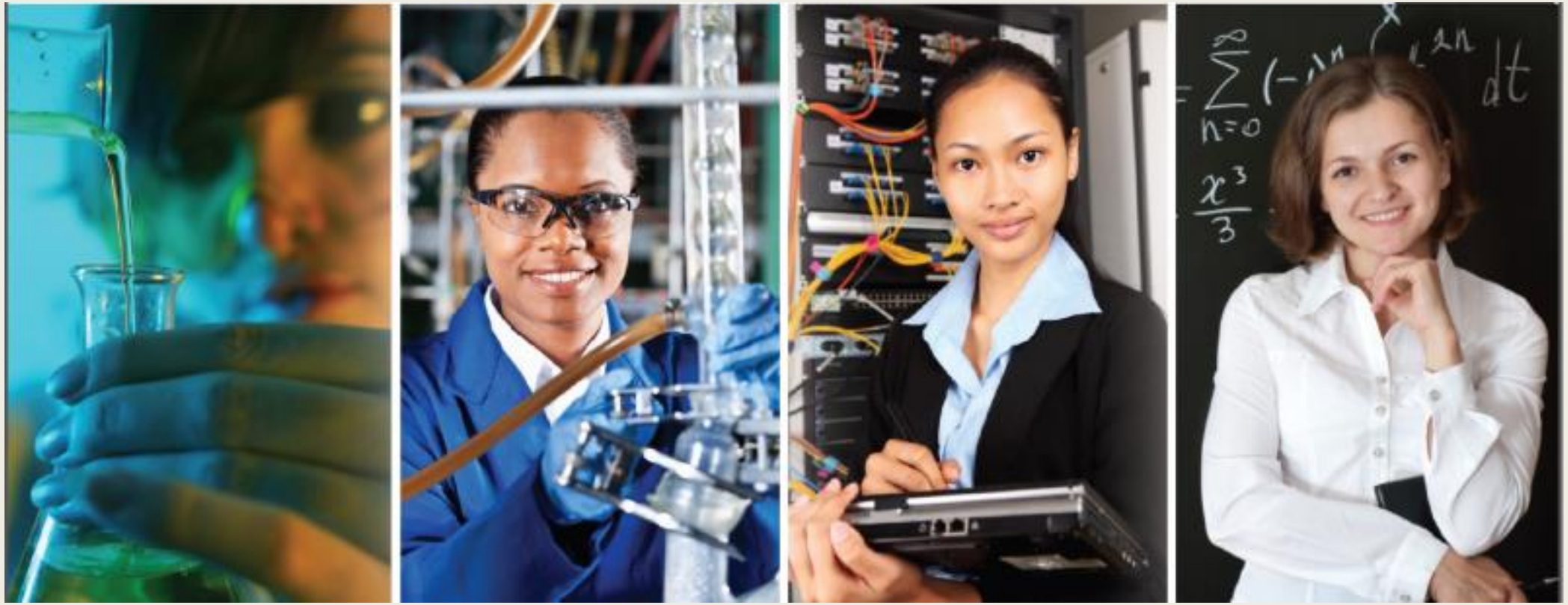
Collaboration

Communication

Creativity

2. Economic growth…

3. Bridge the gap…



4. Catch them young...

"I've found STEM to be so rewarding for both myself and the children. They are so engaged. Just love inquiry based learning!"

Liz, Pre-kindergarten Teacher

Learning Outcomes for Year 4

Primary Science Level 5 Year 4 Learning Outcomes	
Learning Outcome 1 ***What do Scientists do?*** Learning Outcome 1 *What do Scientists do?* will be integrated throughout the framework for Level 5 (Year 3 and Year 4).	
4.1.1	I can ask questions about the world around me.
4.1.2	I can find out about a simple scientific idea.
4.1.3	I can make a prediction about a situation from a limited number of options.
4.1.4	I can carry out a simple practical investigation with the teacher's support.
4.1.5	I can record observations in a simple format.
4.1.6	I can make simple conclusions from my direct observations.
4.1.7	I can apply knowledge to practical situations.
4.1.8	I can describe what I did and what happened by talking about it or by drawing a diagram.
4.1.9	I can identify some science occupations.
4.1.10	I can name and use some items of basic scientific equipment.
4.1.11	I can use simple measuring devices.
4.1.12	I can follow written or verbal instructions related to keeping safe.
4.1.13	I can work on an experiment in a group under adult supervision.

Some Learning Outcome topics include...

plants

food and hygiene

sound

food chains

senses

light

electricity

weather

mixtures

space

Science Resource Pack for Year 4

Lesson Plan

Engage

Inquire

Evaluate

Resources

CONTINUOUS ASSESSMENT

Continuous Assessment is a form of educational assessment that evaluates students' progress over a period of time.

Advantages of Continuous Assessment

- It can provide early indications of the performance of children and any problems can be identified at their earliest stages.
- The teacher can track the improvement of the children and the children will have more opportunities to improve.
- The teacher will be able to give more support and guidance.
- This allows children to focus more on learning instead of exams and marks.
- It is more enjoyable for children.

Continuous Science Assessment
Suggested Tasks
for Scholastic Year 2019 – 2020

- ✓ Suggestion 1: Investigation
- ✓ Suggestion 2: Science Project
- ✓ Suggestion 3: Fieldwork activity

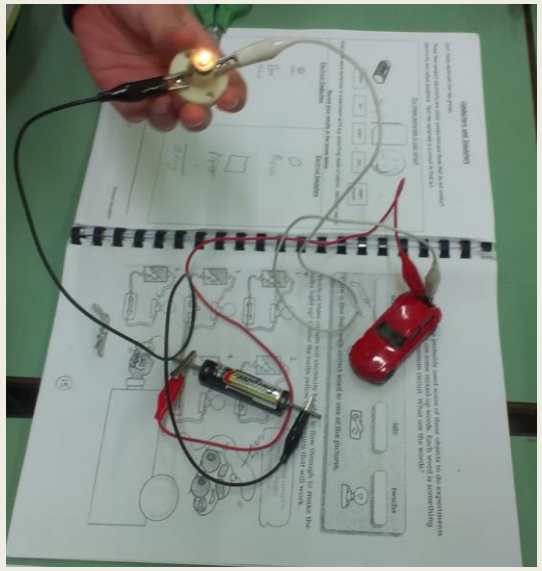
Choice of two of the suggested tasks	
Task 1	Task 2
Total of 20 marks	Total of 20 marks
Total of 40 marks	

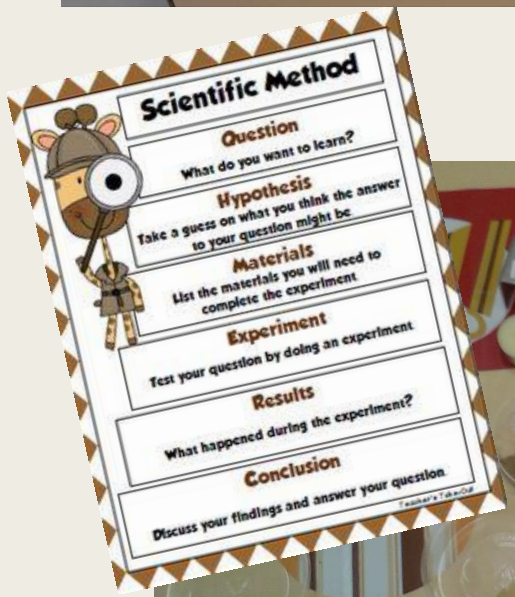
1: Investigation

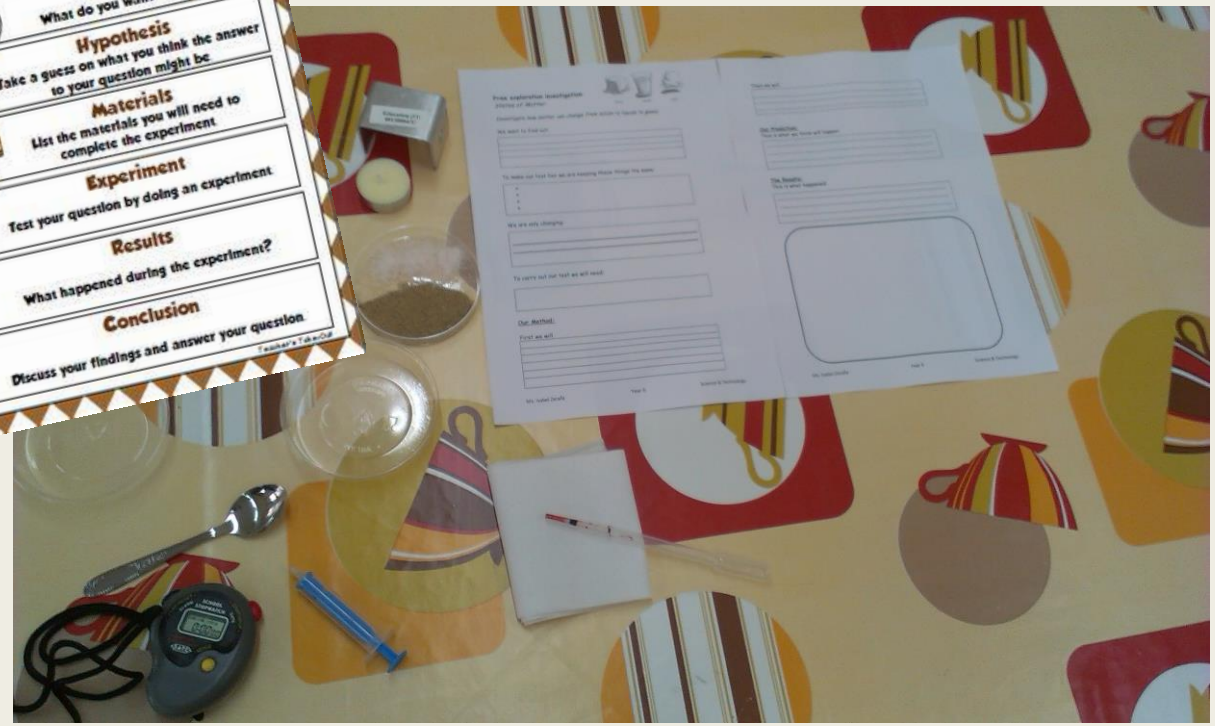
Can focus on the whole procedure or parts of the investigation.

For example:

- coming up with the inquiry question
- writing the method
- projecting results
- drawing conclusions of results.







2: Science Project

Children can work on a project title or come up with their own project to investigate.

The following skills may be assessed:

- project validity/relevance
- presentation of work
- research skills involved
- ability to work with others

3: Fieldwork activity

Can include outdoor visits in the countryside or seaside, nature reserves, public gardens, science centres etc.

The following skills may be assessed:

- observation skills
- record keeping
- identification/labelling

Broad Learning Outcomes and using the Rubric

for Scholastic Year 2019 – 2020

- There will be 7 broad learning outcomes to be assessed for continuous assessment.
- The teacher will choose the order to assess the 7 broad learning outcomes throughout the scholastic year.
- The rubric provided may be used to guide the teacher in assessing the 7 broad learning outcomes.
- Continuous assessment will focus primarily on skills.
- Content knowledge will mainly be assessed in the written component during the annual exam.

Broad Learning Outcomes

for Scholastic Year 2019 – 2020

Year 4 Continuous Assessment Rubric

Suggested continuous assessment tasks:

- Investigation
- Fieldwork
- Project work

A choice of two of the suggested tasks, each carrying a total of 20 marks.

Competence-based Assessment Criteria	Started to be achieved 0 - 4	Partially achieved 5 - 9	Satisfactorily achieved 10 - 15	Fully achieved 16 - 20
4.1.1 I can ask questions about the world around me.	The question posed for the investigation is irrelevant to the investigation topic or cannot lead to an investigation.	The question posed for the investigation is partially identified and not clearly stated or stated with guidance.	Can pose a question for the investigation which is not clearly stated or stated with guidance.	Can clearly identify and state the question directly related to the investigation topic to be investigated.
4.1.2 I can find out about a simple scientific idea.	Can gather minimal information on the question posed through observation, experimentation and/or research, with guidance.	Can partially gather information on the question posed through observation, experimentation and/or research, with guidance.	Can gather information on the question posed through observation, experimentation and/or research, with guidance.	Can gather information on the question posed through observation, experimentation and/or research, independently.
4.1.3 I can make a prediction about a situation from a limited number of options.	The prediction is partially scientifically correct or incorrect and the reason provided, if any, does not support the prediction.	Can predict what may happen or be observed with guidance, and support the prediction with a reason which may not be scientifically correct.	Can predict what may happen or be observed and can support the prediction with a reason which may not be scientifically correct.	Can predict what may happen or be observed and support the prediction with a scientific logical reason.

Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

Task 1: Assessing Broad Learning Outcomes through an Investigation task

Activity 1: e.g. Investigation on mixtures

✓ Broad Learning Outcome 4.1.1 will be assessed

Activity 2: e.g. Investigation on electricity

✓ Broad Learning Outcome 4.1.2 will be assessed

Activity 3: e.g. Investigation on forces

✓ Broad Learning Outcome 4.1.3 will be assessed

- In the example above, an average mark will be drawn for the Broad Learning Outcomes assessed in activities 1, 2 and 3 and this will be the mark of the investigation component (20%).
- The same procedure may be adopted for the other suggested tasks for continuous assessment i.e.: the fieldwork activity and/or science project.
- The same or similar activities may be carried out for students who are absent on the day the assessment task is carried out (if applicable).

Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

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9 marks

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for Scholastic Year 2019 – 2020

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Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

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9 marks

15 marks

Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

Year 4 Continuous Assessment Rubric

Suggested continuous assessment tasks:

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- Fieldwork
- Project work

A choice of two of the suggested tasks, each carrying a total of 20 marks.

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9 marks

15 marks

Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

Year 4 Continuous Assessment Rubric

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- Investigation
- Fieldwork
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4.1.1 I can ask questions about the world around me.	The question posed for the investigation is irrelevant t… the investigation topic or cannot lead to an investigation.	9 marks	Can pose a question for the investigation which is not clearly stated or stated with guidance.	Can clearly identify and state the question directly related to the investigation topic to be investigated.
4.1.2 I can find out about a simple scientific idea.	Can gather minimal information on the question posed through observation, experimentation and/or research, with guidance.	Can partially gather information on the question posed through observation, experimentation and/or research, with guidance.	13 marks	Can gather information on the question posed through observation, experimentation and/or research, independently.
4.1.3 I can make a prediction about a situation from a limited number of options.	The prediction is partially scientifically correct or incorrect and the reason provided, if any, does not support the prediction.	Can predict what may happen or be observed with guidance, and support the prediction with a reason which may not be scientifically correct.	Can predict what may happen or be observed and can support the prediction with a reason which may not be scientifically correct.	18 marks

Using the Rubric for Assessment

for Scholastic Year 2019 – 2020

- ✓ Suggestion 1: Investigation
- ✓ Suggestion 2: Science Project
- ✓ Suggestion 3: Fieldwork activity

Choice of two of the suggested tasks	
Task 1 e.g.: Investigation (e.g. average mark based on 3 investigation activities)	**Task 2** e.g.: Science Project (e.g. average mark based on 1 science project)
Broad LO 4.1.1 = 9 marks Broad LO 4.1.2 = 13 marks Broad LO 4.1.3 = 18 marks **Average = 13 marks**	Broad LO 4.1.4 = 16 marks Broad LO 4.1.5 = 8 marks Broad LO 4.1.6 = 18 marks Broad LO 4.1.7 = 13 marks **Average = 14 marks**
Continuous Assessment: Total of 27 marks (out of 40 marks)	

THANK YOU

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