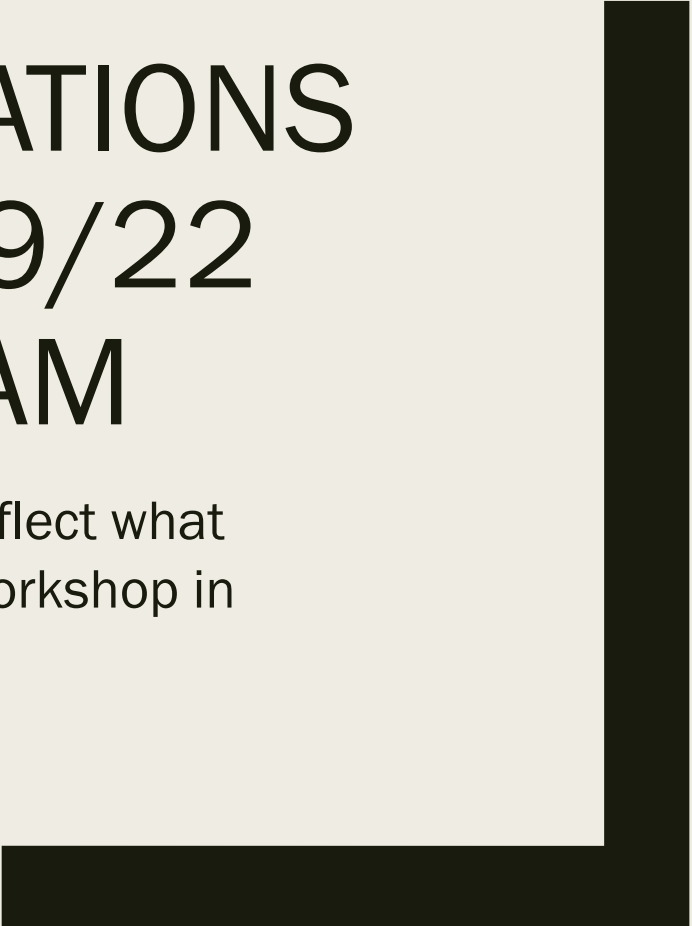# A TEACHER'S OBSERVATIONS OF DRAFT S.E.A 2019/22 MATHEMATICS EXAM

These observations found in this document reflect what was seen and heard after attending D.E.R.E Workshop in October 2017.

Points of Interest

- ■ Formatting adjustments

- ■ Item adjustments

- ■ Scoring adjustments

- ■ Teaching emphases and adjustments

FORMATTING ADJUSTMENTS

"Different is good, as long as you're not blinded by the bright side."

Physical Changes in Mathematics Paper

- We already know that there will be 45 items
  - *Section 1 – 20 items*
  - *Section 2 – 20 items*
  - *Section 3 – 5 items (4 marks each)*

- The restricted working column has been removed. The new test favours open space below each item as the new working canvas.

- The font throughout the Mathematics Paper is constant. i.e. There are is no highlight, italics, increased font size, bolded or underlined text in any question.

ITEM ADJUSTMENTS

"Each foot one in front of the other gets us where we have to go. But, who says you cant jump two feet at a time."
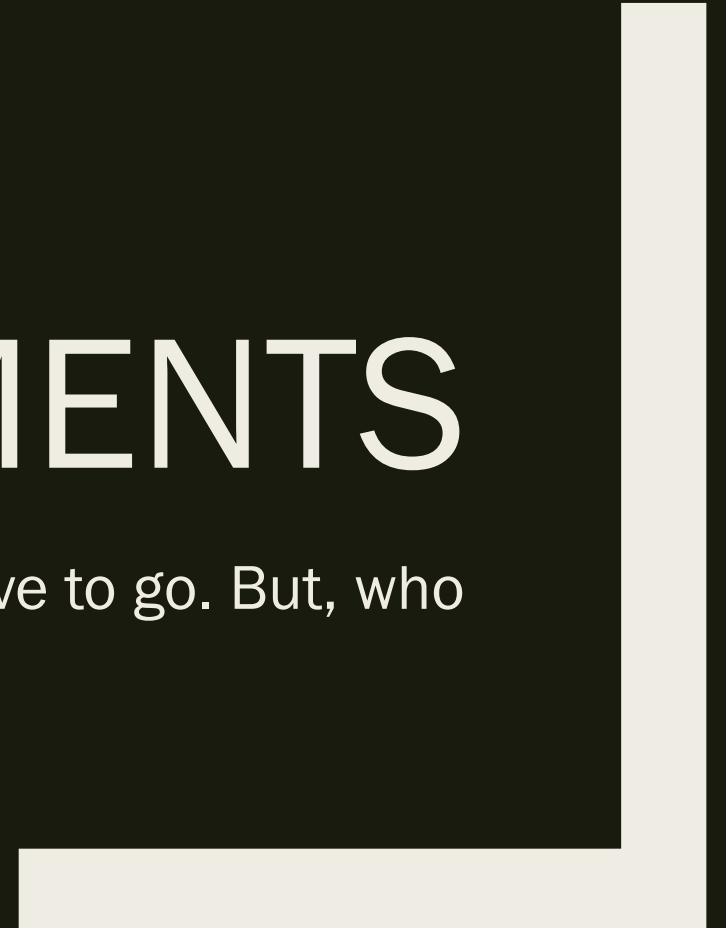
Item Adjustments

- Construction of Items:
  - *Fewer items are being scaffolded for students. (emphasis is on reasoning)*
  - *Irrelevant information can be present in problems*

- The thinking processes have changed
  - *No more knowledge, algorithmic thinking and problem solving*
  - *The newt thinking processes are: Knowing, applying and reasoning. These new terms are not a swap of words, the semantics differ.*

Example of SEA – 2018 test Item.

*A vendor buys mangoes at $4. When customers buy 2 mangoes they get **1 free**. The vendor gives away 30 free mangoes. The vendor sells $516 worth of mangoes.*

a) *How many total mangoes were given to customers who bought 2 mangoes?*

Answer = _____   *(2 marks)*

a) *How much money did the vendor receive from customers who bought 1 mango?*

Answer = _____   *(3 marks)*

Example of SEA 2019/22

A vendor buys mangoes at $4. and sells them for $6 each. When customers buy 2 mangoes they get 1 free. The vendor gives away 30 free mangoes. The vendor sells $516 worth of mangoes.

How many customers bought 1 mango?   *(4 marks)*

Answer = _____

Scaffolding versus No Scaffolding

A vendor buys mangoes at $4. and sells them for $6 each. When customers buy 2 mangoes they get 1 free. The vendor gives away 30 free mangoes. The vendor sells $516 worth of mangoes.

a)   *How much profit did the vendor make on each mango? (1 mark)*

a)   *How many total mangoes were given to customers who bought 2 mangoes?   (2 marks)*
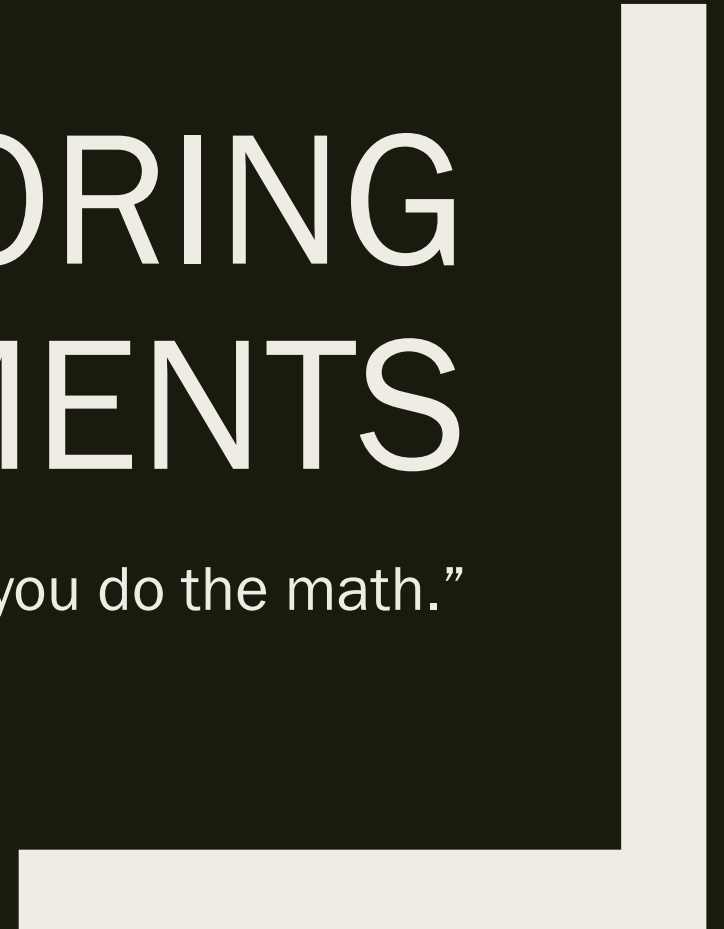
a)   *How much money did the vendor receive from customers who bought 1 mango?*

(2 marks)

A vendor buys mangoes at $4. and sells them for $6 each. When customers buy 2 mangoes they get 1 free. The vendor gives away 30 free mangoes. The vendor sells $516 worth of mangoes.

How many customers bought 1 mango?

(4 marks)

SCORING ADJUSTMENTS

"If a equals b; and b equals c, then you do the math."

How are marks awarded for items?

- Points are NOT being awarded for the process of calculating a problem.

  - *This mean in the past a student could have an incorrect answer due to an incidental error during calculation and still be rewarded full marks for the question.*

- Point are awarded based on the portion of the problem that is correct.

  - *Errors performed during the calculation means only that partially correct questions regardless of the correct process will not gain full marks.*

  - *Once students SHOW significant correctness in their working, that portion of working will be marked.*

  - *No matter how a problem is solved, that problem will be rewarded marks.*

Scoring adjustments

Instructions – Solve the problem below. The correct answer is worth 4 marks.

A vendor buys mangoes at $4. and sells them for $6 each. When customers buy 2 mangoes they get 1 free. The vendor gives away 30 free mangoes. The vendor sells $516 worth of mangoes. How many customers bought 1 mango?

Scoring Adjustments *reflects less emphasis on correct process but more emphasis on reasoning and applying concepts.*

4 marks

30 free means =30 bought 2

$30 \times 2 = 60 \ mangoes$

Total cost of 60 mangoes

$60 \times \$6 = \$360$

Money from those who bought 1

$\$516 - \$360 = \$156$

Customers who bought 1 mango

$\$156 \div 6 = 26 \ mangoes$

3 marks

30 free means =30 bought 2

$30 \times 2 = 60 \ mangoes$

Total cost of 60 mangoes

$60 \times \$6 = \$360$

Money from those who bought 1

$\$516 - \$360 = \$156$

OR

Customers who bought 1 mango

$\$156 \div 6 = WRONG \ ANSWER$

2 marks

30 free means =30 bought 2

$30 \times 2 = 60 \ mangoes$

Total cost of 60 mangoes

$60 \times \$6 = \$360$

1 mark

30 free means =30 bought 2

$30 \times 2 = 60 \ mangoes$

TEACHING ADJUSTMENTS

"A paradigm shift requires change not inertia"

Teaching Emphases

- Mirror S.E.A format in monthly and term tests.

- Teaching Approaches must suite mathematical processes
  - *Knowing, Applying, Reasoning.*

- Promoting varied methods of arriving at solutions

- Include mathematical specific language in items.

- If possible construct authentic mathematical items. These are often better than what is found in current textbooks.
  - *Teachers may have to alter problems in textbooks to accommodate less scaffolding.*