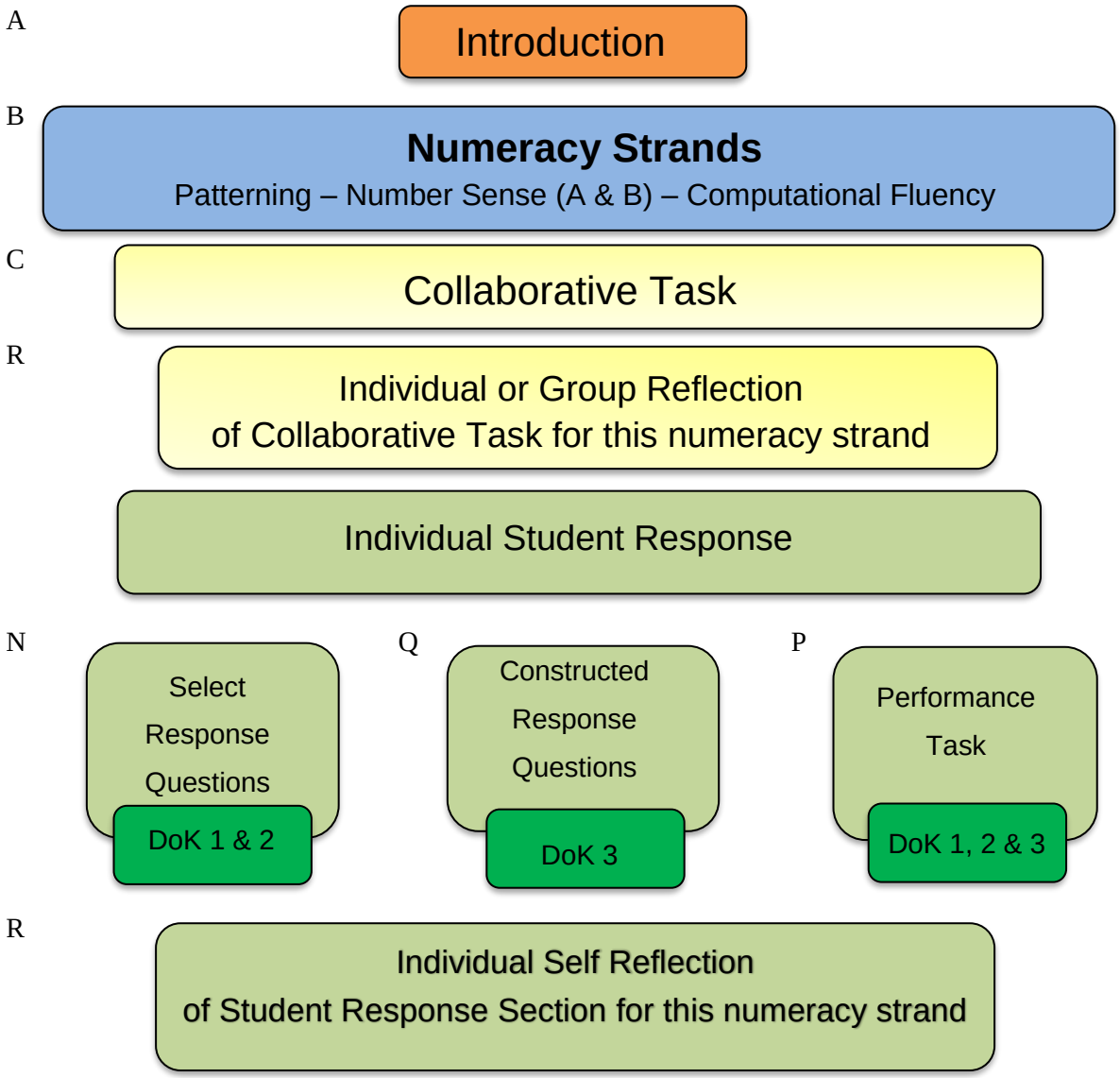
Island Numeracy Assessment Structure



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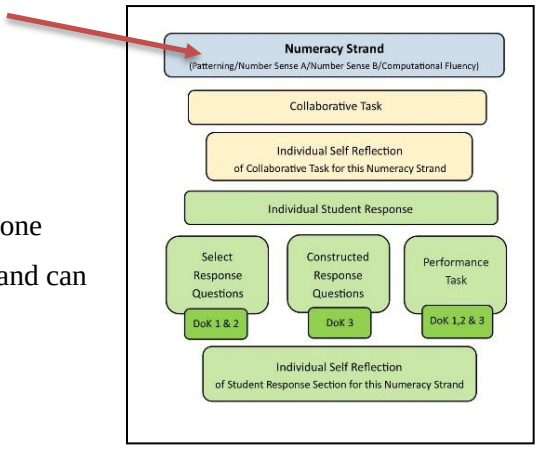

Numeracy Strands

For each grade range, the assessment includes four stand-alone strands that allow students to demonstrate what they know and can do within each foundational numeracy strand:

- **PATTERNING:** number, algebra, expressions, variables, etc.
- **NUMBER SENSE**
    - **A:** magnitude (comparing and ordering), place value, counting principles, rational numbers, irrational numbers, etc.
    - **B:** fractions, decimals, percentages, ratios, proportions, parts and wholes, etc.
- **COMPUTATIONAL FLUENCY:** strategies, flexible thinking, partitioning, symbolic representation, operational sense (whole numbers), concept of equality, additive thinking, multiplicative thinking, etc.

Depth of Knowledge (DoK)

The student response components include questions at all three levels of Depth of Knowledge (DoK).

DoK Level 1: recognize, identify, calculate: recalling information

DoK Level 2: interpret, infer, classify: applying a skill or concept

DoK Level 3: assess, explain, construct: strategic thinking, creativity

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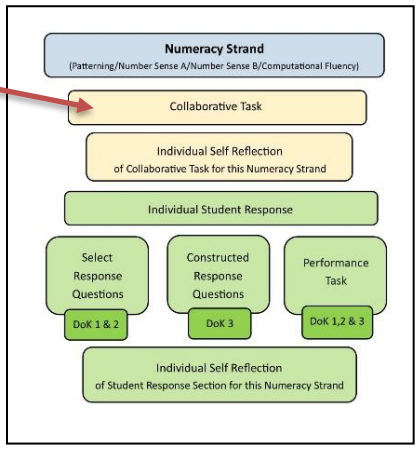
Components of the Assessment Explained

Each of the Numeracy Strands has multiple components that teachers may choose to use flexibly, based on the needs of their learners. Each component assesses different levels and Depth of Knowledge.

Collaborative Task



Each Numeracy Strand begins with a rich, collaborative task designed to stimulate student interest, activate prior knowledge, and reduce anxiety about the assessment. This task allows students to engage in and demonstrate Curricular and Core Competencies. It also allows teachers to observe and collect further evidence of numeracy learning for consideration and interpretation.

R

Individual or Group Reflection
of Collaborative Task for this numeracy strand

Student Reflection

Students have the opportunity to reflect within each Numeracy Strand:

- in discussion
- following the collaborative task (sheet)
- in the reflection section of their individual student responses
    - *learners may find that different questions/tasks provoke different types of reflection. For example, they may be choose reflection of their learning, or choose to reflect for their own learning as they think more deeply)*
- as a separate written activity following the individual student response (sheet)

Assessment-capable learners are aware of their current level of understanding and must have the means to gauge what they know and do not know. They also are mindful of where they are going next with their learning, how they will get there and what they will require to get to their next step or goal.

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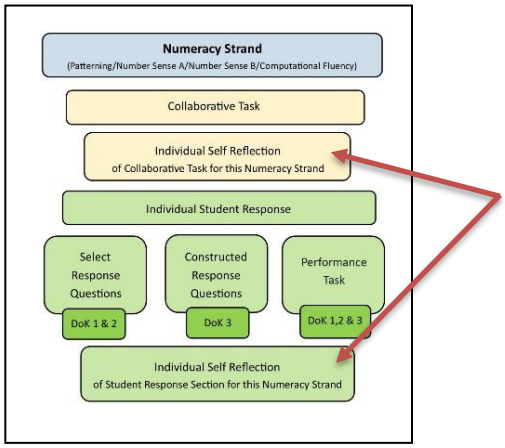

Individual Student Response & Reflections

- Students should be given the time they need to finish the assessment
- Students may use a variety of appropriate mathematical materials and resources to support their ability to demonstrate and communicate the level of their thinking and understanding around the concepts and competencies of questions and tasks.
- Students should have choices about how they represent and solve mathematics questions and tasks.

Student Reflections

- Teachers will need to explain the right hand column of the Individual Student Response sheets.
- The right hand column is the space for students to provide a description of their thoughts in relation to the items (questions/tasks) of the assessment. It may be helpful for teachers to suggest that students provide brief reflections on … what they felt confident about, what didn't make sense, how they were able to create their own way of making sense of a task, or to share which question(s) really stretched their thinking.
- Students do not need to write a reflection for each item of the assessment. They may wish to choose examples of questions which students felt confident with, those that provided particular challenges, and/or those that were interesting and/or engaging.
- During the piloting of this assessment, teachers may wish to make some of their own reflections on how students respond to the challenges provided, what seemed to create difficulties for several students, or identify any patterns that were surprising while the observed students working through the assessment tasks.

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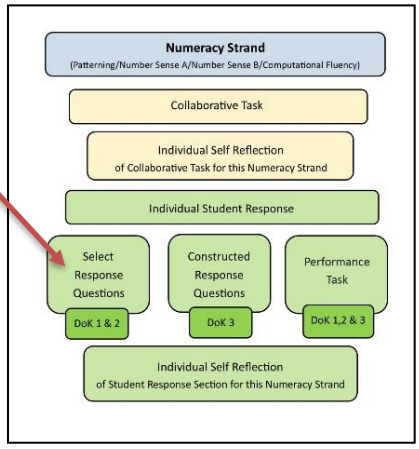
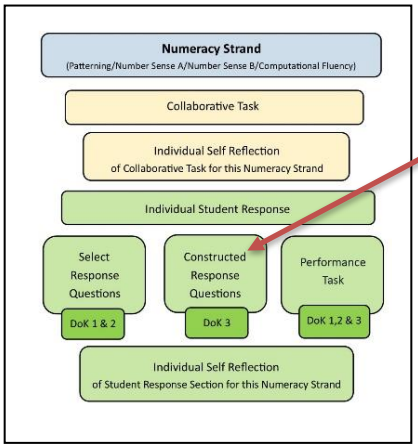
Select Response Questions

Each Numeracy Strand has a section of questions that allows the learner to determine the one correct answer. This type of question may include multiple choice, visual representation, number lines and written numerical responses.





Q

Constructed Response Questions

Each Numeracy Strand has a section of questions that allows the learner to construct their own answer to the questions. These are often multi-step questions that may ask the student to elaborate or explain their reasoning. Constructed response questions allow for multiple correct answers and/or varying methods of arriving at the correct answer.

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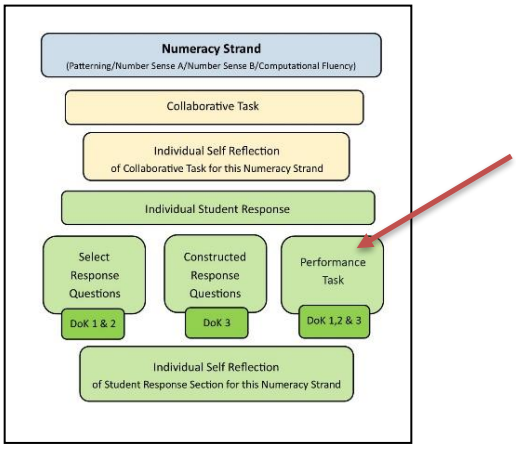

Performance Tasks

Each Numeracy Strand contains a performance task that allows the learner to …

- apply a wide range of problem-solving strategies,
- demonstrate deeper mathematical content knowledge, and
- communicate their thinking.

These tasks are designed to be interesting and engaging – requiring learners to think deeply, be creative, explore multiple ways to represent their thoughts, and to expand on how they completed or solved the task.

When introducing the performance task to students, the teacher should:

- read the question aloud with students
- connect the task with prior knowledge, and
- give enough information before starting to ensure students understand the task.

Key questions to introduce the Performance Task

It might be helpful to ask the following sorts of questions, especially if the student is unsure as to where to start:

- Have you read the problem carefully?
- What information in the problem seems particularly important?
- What mathematics do you see in this task?
- How will you represent the information? Using numbers, diagrams, algebra .... ?
- Can you try out any special cases of the numbers and variables to get a feel for the structure of the problem? (for secondary teachers)