



Hermit crabs

These guidelines provide important information to support administration and implementation of the QCATs.

SECTIONS IN THIS BOOKLET:

Section 1: Understanding QCATs

Section 2: Implementing this QCAT

Section 3: Resources

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Section 1: Understanding QCATs

Queensland Comparable Assessment Tasks (QCATs)

QCATs are one of five components of the Queensland Curriculum, Assessment and Reporting (QCAR) Framework. They aim to provide:

- a model of authentic, performance-based assessment aligned to a selection of *Essential Learnings* and to the *Standards*
- resources to support consistency in the way teachers make judgments about the qualities in student work
- information for teachers and students relevant to a selection of *Essential Learnings* about what students know, understand and can do, what is working well and what needs attention.

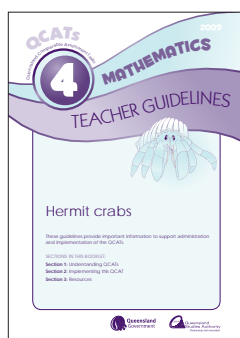
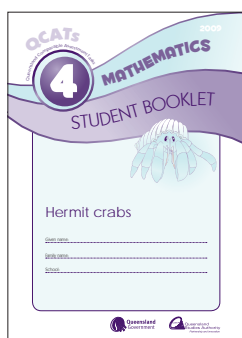
QCATs are assessments that encourage and rely upon interaction between teachers and students. They ask students to use relevant knowledge and skills to respond to a meaningful problem.

These assessments are resources that provide teachers, students and parents or carers with information to contribute to discussions about student learning and to plan for future learning. The effectiveness of these assessments in providing helpful information will depend on the level of interaction teachers have with their students before, during and after implementation.

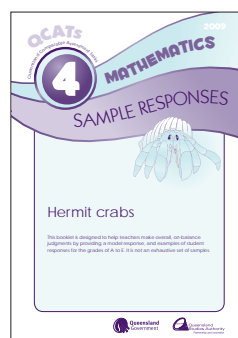
Teacher preparation

- Check that you have the appropriate number of:
 - *Student booklets* — the assessment to be presented to students (one per student)
 - *Teacher guidelines* (one per teacher).
- Check for any defective *Student booklets*.
- Contact the QSA if any additional booklets are required.
- Read all the materials provided.
- Review the selected *Essential Learnings* listed in Section 3.
- Work through the assessment yourself so that you understand what students are required to do.
- Plan implementation with your colleagues:
 - Set times and dates for implementation.
 - Discuss how you will achieve consistency of teacher judgment.
 - Decide how to select five samples representative of the A to E grades for QSA's random sampling process.

Note: *Sample responses* are available for download from the QSA Assessment Bank <<https://qcar.qsa.qld.edu.au/assessmentbank>>.



(This document)



(Found online in the QSA Assessment Bank)

Student orientation

It is important to set conditions that provide students with the opportunity to do their best work.

- Students should have had opportunities to engage with the selected *Essential Learnings* well in advance of participating in the QCATs. Review and consolidation may be necessary before implementing the QCAT, which assesses students' performance in applying knowledge and understanding in a new context.
- Allow some time to familiarise students with the expectations of the assessment. The time required will depend upon the needs of students.
- Begin each assessment with a teacher-facilitated discussion about the context of the assessment and the problem posed. It is vital that all students are engaged in this discussion.
- Ensure that preparation activities do not involve rehearsal of the actual assessment or a similar one.
- Explain what is being assessed by introducing the students to the Assessable elements. These are provided in the *Guide to making judgments* located on the back page of both the *Teacher guidelines* and the *Student booklet*.
- Discuss with students ways in which this assessment can provide them with information and insight into their strengths and areas for improvement.

QCAT conditions

- You have the flexibility to implement the assessment at any time across the eight school weeks of the nominated implementation period, to suit school timetabling.
- Students need not complete the assessment in a single session. If you choose to implement the assessment over more than one session, ensure that the *Student booklets* are kept in a secure location between sessions.
- All responses must be recorded in the *Student booklet*. Extra paper may be provided to students for drafting purposes.
- *Student booklets* have clearly marked sections with prompts to indicate when students should await further instructions.
- Students should not be disadvantaged because they do not understand the instructions or questions — you may read and clarify the instructions and questions but it is important that you use professional judgment, and do not provide the information required in the response. Responses to individual student questions may be shared with the whole class.
- You may point out to a student if you notice that they have missed a question.
- Take advantage of the opportunity to interact with students during the assessment. This will enable you to gather information about future learning needs while the assessment is being implemented.
- Students absent during the administration of the QCATs should be given an opportunity to complete the assessment upon returning to school.
- Collect all *Student booklets* from students on completion of the assessment.
- Schools are responsible for the safe storage of *Student booklets* until December 2009.

Making judgments

- Use the *Guide to making judgments* to grade student responses. Additional resources for your reference are:
 - model response (in this booklet)
 - *Sample responses*, graded A to E and annotated to explain how they demonstrate the qualities described in the *Guide to making judgments*. *Sample responses* are available for download from the QSA Assessment Bank <<https://qcar.qsa.qld.edu.au/assessmentbank>>.
- The model response and *Sample responses* are provided for reference purposes only. They each demonstrate possible responses and should be used to support the *Guide to making judgments*.
- Making judgments is **not** about determining whether one student's work is better than that of another. Rather, make standards-based judgments by matching student responses to the *Guide to making judgments*.
- Read and consider all of the evidence in the *Student booklet* before making and recording a judgment about the quality of the performance for each Assessable element.

The judgment process

Making a judgment about the quality of a student's response to the assessment is a two-step process.

Step 1: Make a judgment about the evidence related to each Assessable element

- Read the purpose statement at the top of the *Guide to making judgments*. This statement describes the focus of the QCAT.
- Read the task-specific Assessable elements in the *Guide to making judgments*. These identify significant and discrete aspects that you will look for in student responses.
- Identify the evidence in the *Student booklet* as indicated in the *Guide to making judgments*.

- Match the evidence from the *Student booklet* with a task-specific descriptor. Begin at the bottom of each continuum. As you move up the continuum, each task-specific descriptor signposts a discernable difference in the quality of the student performance.
- Consider all the task-specific descriptors on the continuum.
- Record a judgment on the continuum for each Assessable element. A judgment may be recorded anywhere along the length of the continuum.

Note: Refer to the model response and *Sample responses* to support the process of matching student responses to task-specific descriptors in the *Guide to making judgments*.

Step 2: Make an overall on-balance judgment

- Reread the purpose of the assessment as stated at the top of the *Guide to making judgments*.
- Consider the judgments recorded for each Assessable element. Sometimes the on-balance judgment will be an easy fit over one of the A to E grades. However, where there is uneven performance across the Assessable elements, an overall on-balance judgment must be made by considering the significance of each Assessable element in relation to the purpose of the assessment.
- Record the overall grade by circling the relevant letter A to E on the *Guide to making judgments*.
- A nil award of "N" is to be recorded only when there is insufficient evidence to inform a judgment for an overall grade. In some circumstances students completing only part of the task may have their assessment considered complete if there is sufficient evidence of student performance across the Assessable elements to inform an overall on-balance judgment.

Consistency of teacher judgment

- The process of achieving consistency of teacher judgment is integral to making judgments about the quality of student responses. This involves teachers consistently applying a shared understanding of those qualities that characterise the *Standards*.
- Consistency of teacher judgment is achieved through engaging in professional conversations about the quality of evidence in student responses using *Standards*, *Assessable elements* and task-specific descriptors as a common language. There are various ways of achieving teacher consensus. Three approaches to professional conversations are suggested on page 18. Schools may also develop their own processes for achieving consensus.
- Teacher consensus will facilitate the process of selecting five student responses considered to be representative of the overall A to E grades. Samples may be required as part of the QSA's random sampling process after implementation. Schools will be advised whether they have been selected to submit their representative samples in May.

Providing feedback

- Effective feedback to students would include reference to the:
 - student responses
 - *Guide to making judgments*
 - *Essential Learnings* and *Standards*
 - model and *Sample responses*.
- Work with students and discuss information about what they were expected to know, understand and do, and how their responses were judged using the *Guide to making judgments*. Focus this discussion on developing strategies to improve learning.
- Consider strategies that could be used to cater to the needs of students who experienced either low or high levels of success in completing the assessment.

Special consideration

Schools are responsible for determining which students require special provisions. Students should have the opportunity to participate in school-based assessment.

The QCATs are designed to be part of a classroom assessment program, and principles of participation and equity apply. The QSA offers this general advice about including all students:

- Students who have been identified as having specific educational needs may be assisted using those adjustments and supports usually available in the classroom. To make participation possible in all or part of the assessment task, such help may be in the form of assistive technologies, teacher-aide time or reading support.
- Students for whom English is not their first language, and who are assessed as not achieving a reading level appropriate to complete the task, may be assisted by an interpreter or educational devices (e.g. pictures, electronic whiteboards, interactive devices) to allow participation in all or part of the task.
- In exceptional circumstances where undertaking the task may be a traumatic experience for a student, the principal (in consultation with specialist and support staff and parents/carers) may make a decision regarding the participation of that student in the tasks.

Important dates

16 March 2009	<ul style="list-style-type: none"> • QCATs arrive in schools.
16 March – 18 May 2009	<ul style="list-style-type: none"> • Implement QCATs. Note: Schools have the flexibility to implement at any time across the eight school weeks of this period. • Submit student data. • Select five student samples that are representative of grades awarded. Where a school is unable to select student samples representative of all grades (A to E), they are to select five student samples representing the awarded range of grades.
18 May 2009	<ul style="list-style-type: none"> • Final day to submit student data. • Schools notified if they have been randomly selected to submit their five representative samples.
December 2009	<ul style="list-style-type: none"> • Schools retain all <i>Student booklets</i> until the end of the school year.

Section 2: Implementing this QCAT

Read this section in conjunction with the *Student booklet*.

The purpose of this QCAT is for students to demonstrate mathematical thinking and reasoning when solving problems.

Getting ready

To help students engage with the assessment, you may wish to provide some background information about hermit crabs.

Common name: Giant strawberry hermit crab

Scientific name: *Coenobita perlatus*

Habitat: Giant strawberry hermit crabs live on land, however they return to the salt water to wet themselves, and release larvae from hatching eggs. They change shells as they grow. The shells are used as a portable home and for protection.

Size: Giant strawberry hermit crabs can grow to the size of a softball.

Diet: Giant strawberry hermit crabs eat plants and animals.

Care: Giant strawberry hermit crabs are docile creatures but easily startled by rapid movements. They require a salt bath once every two weeks using salt specifically for crabs, not table or cooking salt. The crabs need fresh water for drinking and to ensure their atmosphere doesn't become too dry.

On the day

This assessment will take approximately 90 minutes to implement. It is recommended the task be completed in at least two sessions.

This section describes the organisation and procedures that teachers are expected to follow in the administration of this QCAT.

Setting the scene: Group discussion <i>Approximately 15 minutes (at teacher's discretion)</i>		
Teacher	Student	Materials
<p>Engage students in a whole-class discussion to focus their thinking on the assessment context and the requirements. The following steps are suggested:</p> <ul style="list-style-type: none"> • Read to the class <i>Setting the scene: Group discussion</i> (<i>Student booklet</i>, pages 2 and 3). • Discuss the context with the students. Some basic information about the giant strawberry hermit crabs has been provided in the <i>Getting ready</i> section on page 9 of the <i>Teacher guidelines</i>. • Clearly identify the problem for students. How does a class use mathematics to plan and run a fundraising activity that covers the costs of a class project? • Outline the steps to solve the problem: <ul style="list-style-type: none"> – Getting started – Working out the costs – Organising a fundraising stall – Organising helpers – Spending the money – Now I can ... • Work through the <i>Guide to making judgments</i> with students to highlight the Assessable elements for this QCAT. Explain, in student-friendly terms, the task-specific Assessable elements. These identify what is valued in the student responses. • Instruct students that they must stop and wait for your directions at the bottom of page 3. 	<p>Students listen to assessment expectations, discuss the context and issues, and ask clarifying questions.</p>	<p><i>Student booklet</i></p>

Getting started, Q 1 & 2*Suggested time: 10 minutes*

Teacher	Student	Materials
<p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary.</p> <p>Instruct students to attempt both questions. Encourage students to provide one response for question 1 and two responses for question 2. The more detail each student provides in their response, the more evidence is available to make a judgment about reflecting on learning.</p> <p>Instruct students that they must stop and wait for your directions when they reach page 5.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete questions 1 and 2.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

Working out the costs, Q 3*Suggested time: 15 minutes*

Teacher	Student	Materials
<p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary.</p> <p>Instruct students to show their working when answering the question. You may remind students to check that they have included everything on the shopping list.</p> <p>Teachers should not reveal to students the operator needed to solve this problem.</p> <p>Note: If students get the answer incorrect in question 3, they must not be disadvantaged when responding to questions that use that answer on the following pages.</p> <p>Instruct students that they must stop and wait for your directions at the bottom of page 7.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete question 3.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

Organising a fundraising stall, Q 4–7*Suggested time: 10 minutes*

Teacher	Student	Materials
<p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary.</p> <p>Instruct students to show their working when answering questions 5, 6 and 7.</p> <p>Students are allowed to access manipulative materials if needed.</p> <p>Instruct students that they must stop and wait for your directions at the bottom of page 9.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete questions 4 to 7.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p> <p>counters (only if needed)</p>

Organising helpers, Q 8 & 9*Suggested time: 15 minutes*

Teacher	Student	Materials
<p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary.</p> <p>Teachers should point out to students that an example is provided in questions 8 and 9, but this should not include a discussion.</p> <p>Students are allowed to look at the classroom clock if they find this helpful. They may also use the space below questions 8 and 9 to do their working out, if needed.</p> <p>Instruct students that they must stop and wait for your directions at the bottom of page 11.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete questions 8 and 9.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

Spending the money, Q 10*Suggested time: 15 minutes*

Teacher	Student	Materials
<p>In question 10 the concept of a “sale” is introduced. This concept may need to be discussed with students.</p> <p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary. Ensure students fully understand question 10 before allowing them to begin.</p> <p>Instruct students to show their working. They must then explain how they used mathematics to get their answer.</p> <p>Instruct students that they must stop and wait for your directions at the bottom of page 13.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete question 10.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

Now I can ... , Q 11 <i>Suggested time: 10 minutes</i>		
Teacher	Student	Materials
<p>Instruct students to read all information and questions. Clarify by reading the questions and instructions where necessary.</p> <p>Instruct students to complete each sentence as fully as possible.</p> <p>Instruct students that they must check all of their work when they have finished question 11.</p>	<p>Students listen to the expectations and ask any clarifying questions.</p> <p>Students work independently to complete question 11.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

Follow-up

Making judgments

Students should not be penalised for consequential errors. For example, if a student incorrectly calculates the price of the items for the project in Question 3, credit should be given for subsequent answers based on that error in Questions 4 to 7; if a student incorrectly calculates times in Question 8, credit should be given for subsequent answers based on that error in Question 9.

Feedback

This QCAT has been trialled at a number of schools across Queensland. Feedback from the trials showed these areas as common points for follow-up with students:

- considering all information given and selecting appropriate strategies to complete problems, particularly when using data from tables
- explaining, in some detail, all of the steps or thought processes used to solve a problem
- using reflection to inform mathematical learning.

For more information about setting up a project in a classroom teachers should refer to the *Education policy and procedures register* (EPPR) which is the Department of Education, Training and the Arts centralised location for departmental policies, procedures, guidelines and other administrative instructions and directives including health and safety, equipment and storage.

The EPPR can be found at <<http://education.qld.gov.au/strategic/eppr>>.

Section 3: Resources

The selected *Essential Learnings*

The 2009 QCATs will assess what students know, understand and can do. The following selection of Year 3 Mathematics *Essential Learnings* form the basis of the 2009 assessment.

Mathematics *Essential Learnings* by the end of Year 3

Ways of working

Ways of working describe processes students use to develop and demonstrate their *knowledge and understanding*.

Students are able to:

- use everyday and mathematical language, mental computations, representations and technology to generate solutions and check for reasonableness of the solution
- make statements and decisions based on interpretations of mathematical concepts in familiar everyday situations
- communicate thinking and reasoning, using everyday and mathematical language, concrete materials, visual representations, and technologies
- reflect on and identify the contribution of mathematics to everyday situations
- reflect on learning to identify new understandings.

Knowledge and understanding

Knowledge and understanding describes essential concepts, facts and procedures.

Number

Whole numbers, simple fractions and the four operations are used to solve problems.

- Whole numbers (to 999) can be represented in different ways, including the use of concrete materials, pictorial materials, number lines and technologies.
- Addition and subtraction involving 2-digit whole numbers can be calculated using concrete materials, mental computation and written strategies.
- Multiplication and division of whole numbers to 10 can be calculated using arrays, skip counting, doubles, double doubles, turnarounds and sharing of concrete materials.
- Problems involving operations can be explored using concrete materials, sketches and diagrams.
- Problems using a single operation can be planned and solved.
- Money can be used to buy goods and services.

Algebra

Relationships between objects or numbers can be described using patterns and simple rules.

- Simple relationships between objects or numbers can be described in terms of order, sequence and arrangement.

(Continued on next page)

Measurement

Unique attributes of shapes, objects and time can be identified and described using standard and non-standard units.

- Hour, half-hour and quarter-hour times and five-minute intervals are read using analogue clocks and all times are read using digital clocks.

Chance and data

Chance events can be explored using predictions and statements. Data can be collected, organised and explored.

- Data can be organised in lists, tables, picture graphs and bar graphs.
- Data can be explored for variation and adequacy.

Assessable elements

Assessable elements identify the valued features of the key learning area about which evidence of learning is collected and assessed.

- Knowledge and understanding
- Thinking and reasoning
- Communicating
- Reflecting

Standards

Standards are integral to the alignment of curriculum, assessment and reporting. For teachers, parents and students, they provide a shared language for describing the quality of student achievement.

The *Standards* are achievement standards linked to the *Essential Learnings*. Using a five-point scale, the *Standards* describe how well a student has demonstrated their learning based on a collection of evidence. They can also be used to report student progress and achievement.

Standards

Standards describe how well a student has demonstrated their learning based on a collection of evidence.

A standard

Evidence in a student's work typically demonstrates a very high level of knowledge and understanding of concepts, facts and procedures, and application of processes.

B standard

Evidence in a student's work typically demonstrates a high level of knowledge and understanding of concepts, facts and procedures, and application of processes.

C standard

Evidence in a student's work typically demonstrates a sound level of knowledge and understanding of concepts, facts and procedures, and application of processes.

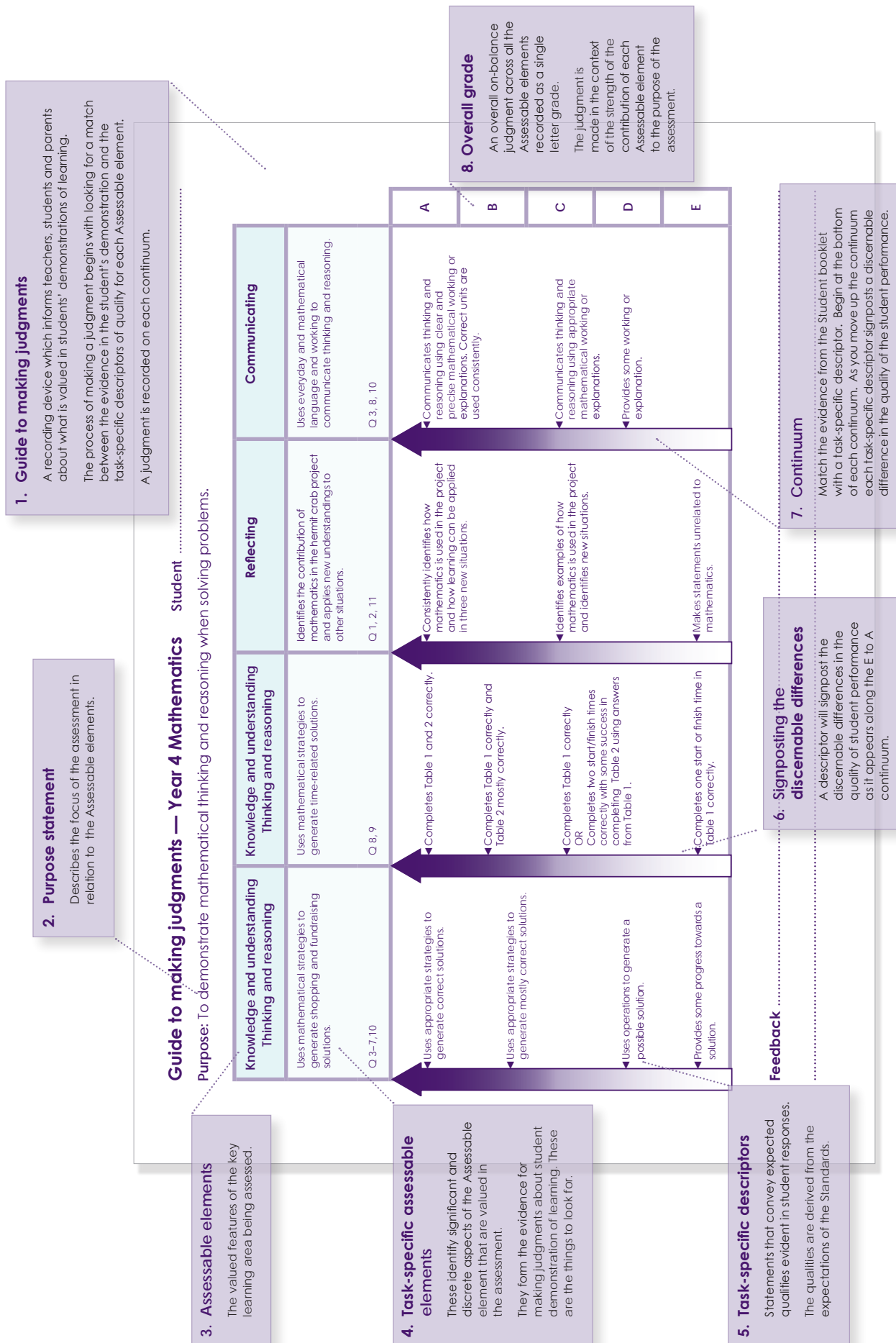
D standard

Evidence in a student's work typically demonstrates a limited level of knowledge and understanding of concepts, facts and procedures, and application of processes.

E standard

Evidence in a student's work typically demonstrates a very limited level of knowledge and understanding of concepts, facts and procedures, and application of processes.

Explanation of the *Guide to making judgments*



Three approaches for consistency of teacher judgment

Calibration model

A facilitator selects samples deemed to be of a certain standard to be used in the calibration process. Teachers individually grade the samples and then compare their judgment with the grade nominated for the sample. Task-specific descriptors are used as the basis for common and explicit language for teachers to use in their discussions about the quality of student performance. These discussions are based on evidence provided in student responses.

Through this professional dialogue, teachers aim to adjust their interpretation and application of the *Standards* to reach consensus about the quality of the sample. This process is repeated for all the student samples. Teachers then individually grade all student responses, applying the shared understanding achieved through this calibration process.

Advantage — Saves time because it focuses on establishing a common understanding of the *Standards* in context, before marking all of the student responses.

Disadvantage — Making the initial quality judgments in isolation can be difficult.

Conferencing model

Teachers grade student responses individually and then select student samples representative of their application or understanding of the A to E qualities. A meeting is convened in which a conferencing process is employed to enable teachers to share samples and discuss their judgments. Task-specific descriptors are used as the basis for a common and explicit language for teachers to use during discussions about the quality of student performance. These discussions are based on the evidence provided in student responses.

Through professional dialogue, teachers aim to reach consensus on the interpretation and application of the *Standards*. Teachers review judgments about their previously graded student responses, applying the shared understanding achieved through this conferencing process.

Advantage — Teachers are involved in professional dialogue with other teachers to reach consensus.

Disadvantage — Establishes a common interpretation and application of the *Standards* after student work has been allocated a grade. Extra time is needed to review and adjust previously graded work.

Expert model

Teachers grade all student responses and then submit selected samples representative of their application or understanding of the A to E qualities to an expert. Advice is provided by the expert confirming whether there is consistency in the way the *Standards* are interpreted and applied, or whether teachers need to adjust their understanding, and why. This advice is used by teachers when reviewing judgments about their previously graded student responses.

Advantage — Imposes a common school-based view of the interpretation and application of the *Standards*.

Disadvantage — Teachers are not involved in the rich professional dialogue of reaching consensus with other teachers. This model can be used to reach consistency within a school, but does not best support consistency of teacher judgments across the state.

Model response

Getting started

Mathematics can be used to help set up a hermit crab project.

To set up a hermit crab project a class would have to buy items from a shopping list.

1. How would you use mathematics to help choose a shop that sells items for the best price?


Look at the prices from different shops to find the shop with the cheapest price for all the items.

To pay for a hermit crab project a class may have to plan a fundraising stall.

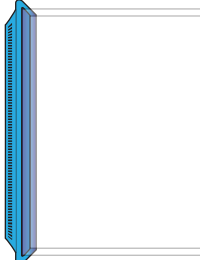
2. How would you use mathematics when serving customers at a fundraising stall?

- Asking for the right amount of money from the customer.
- Choosing the right coins to give as correct change.


3. Work out the total cost of all the items on the shopping list.




Giant strawberry hermit crab
\$25.00 each




Plastic carry-cage
\$18.00



Hermit crab salt
\$3.00



Hermit crab food
\$3.00 per bag



Pet book
\$6.00

\$ 25
+ \$ 25
\$ 50

\$ 50
+ \$ 18
\$ 68

\$ 71
+ \$ 3
\$ 74

\$ 74
+ \$ 6
\$ 80

Total cost: \$80

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

Model response

Organising a fundraising stall

Students are going to sell sausages in bread at a fundraising stall. The sausages, bread and sauce have been given to the class by a parent for free.



Each sausage in bread will be sold for \$1.00.

4. How many sausages in bread must be sold to cover the cost of items on the shopping list?

80
..... sausages in bread

5. How many packs of sausages will be needed?



Sausages come in packs of 8.

8 x 10 = 80

10
..... packs

8

6. How many loaves of bread will be needed for all the sausages?



There are 22 slices (including the crusts) in each loaf of bread. The two crusts will not be used.

Show your working.

$$20 + 20 + 20 + 20 = 80$$

4
..... loaves

7. If six sausages in bread are not sold, how much money is raised?

Show your working.

$$\$80 - \$6 = \$74$$

\$74
.....

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

9

Model response

Organising helpers

Every student in the class must have a turn helping at the sausage stall.
Four students will be at music lessons for some of the time of the stall.

8. Complete Table 1 to show when each student has their music lesson.

Table 1

Student	Start time	Duration	Finish time
Ned	10:15 am	25 minutes	10:40 am
Sid	10:40 am	30 minutes	11:10 am
Jake	11:10 am	25 minutes	11:35 am
Meg	11:25 am	20 minutes	11:45 am

If needed, do your working here.

- The sausage stall will be held from 10:30 am until 11:30 am.
9. In Table 2, cross **X** the boxes to show when each student cannot help at the stall.
Ned has been done for you.



Use the information in Table 1 on page 10 to help you.

Table 2

Time	Ned	Sid	Jake	Meg
10:30 am – 10:45 am	X	X		
10:45 am – 11:00 am		X		
11:00 am – 11:15 am		X	X	
11:15 am – 11:30 am			X	X

If needed, do your working here.

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

Model response

Spending the money

At the pet shop there is a sale.

The class has \$10.00 left over to spend. They decide to buy paint pens to decorate hermit crab shells.

10. The class must spend all of the \$10.00 to buy as many different-coloured pens as possible.

a) Circle the pens that they should buy.

! Buy as many different-coloured pens as possible.

Spend all of the \$10.00.

\$1.50

blue

\$2.50

yellow

\$3.50

grey

\$2.00

red

\$2.00

green

\$2.50

purple

\$3.50

brown

\$1.50

black

\$2.50

pink

12

QSA: Queensland Comparable Assessment Tasks

Show your working.

\$1.50

\$1.50

+ \$2.00

\$5.00

\$2.50

+ \$2.50

\$5.00

\$5.00

+ \$5.00

\$10.00

b) Explain how you used mathematics to get your answer.

I started with the cheapest pens. I worked out that three of the cheapest pens added to \$5.00. That left two \$2.50 pens to make up the other \$5.00.

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

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Model response

11. Complete each sentence to show how you can use mathematics in other situations.



For each sentence choose a new situation.



If I can add up money correctly,

I will be able to .. buy lunch with the ..

correct money.....

.....

If I can read a timetable,

I will be able to .. get to the movies on .. time.....

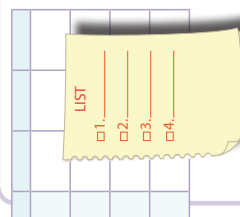
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Station	Start time	Duration	End time
Mid	11:00 am	30 minutes	11:30 am
Mid	11:30 am	10 minutes	11:40 am
Mid	11:40 am	30 minutes	12:10 pm
Mid	12:10 pm	10 minutes	12:20 pm

If I can organise information into a table or list,

I will be able to .. make a list of jobs for .. the day.....

.....



Student

Purpose: To demonstrate mathematical thinking and reasoning when solving problems.

Knowledge and understanding Thinking and reasoning	Knowledge and understanding Thinking and reasoning	Reflecting	Communicating
<p>Uses mathematical strategies to generate shopping and fundraising solutions.</p> <p>Q 3–7, 10</p>	<p>Uses mathematical strategies to generate time-related solutions.</p> <p>Q 8, 9</p>	<p>Identifies the contribution of mathematics in the hermit crab project and applies new understandings to other situations.</p> <p>Q 1, 2, 11</p>	<p>Uses everyday and mathematical language and working to communicate thinking and reasoning.</p> <p>Q 3, 8, 10</p>
<p>Uses appropriate strategies to generate correct solutions.</p> <p>Uses appropriate strategies to generate mostly correct solutions.</p> <p>Uses operations to generate a possible solution.</p> <p>Provides some progress towards a solution.</p>	<p>Completes Table 1 and 2 correctly.</p> <p>Completes Table 1 correctly and Table 2 mostly correctly.</p> <p>Completes Table 1 correctly OR Completes two start/finish times correctly with some success in completing Table 2 using answers from Table 1.</p> <p>Completes one start or finish time in Table 1 correctly.</p>	<p>Consistently identifies how mathematics is used in the project and how learning can be applied in three new situations.</p> <p>Identifies examples of how mathematics is used in the project and identifies new situations.</p> <p>Makes statements unrelated to mathematics.</p>	<p>Communicates thinking and reasoning using clear and precise mathematical working or explanations. Correct units are used consistently.</p> <p>Communicates thinking and reasoning using appropriate mathematical working or explanations.</p> <p>Provides some working or explanation.</p>

Feedback