



## Walk the line

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.

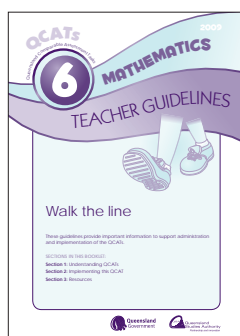
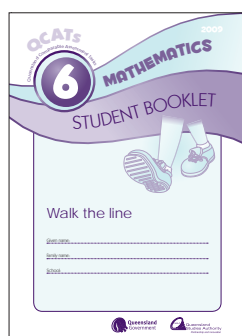
QCATs are assessments that encourage and rely upon interaction between teachers and students. They ask students to use relevant knowledge and skills to respond to a meaningful problem.

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.

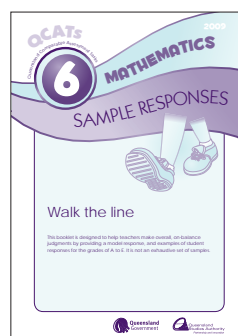
## Teacher preparation

- 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 16. 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"> <li>• QCATs arrive in schools.</li> </ul>
16 March – 18 May 2009	<ul style="list-style-type: none"> <li>• Implement QCATs. <b>Note:</b> Schools have the flexibility to implement at any time across the eight school weeks of this period.</li> <li>• Submit student data.</li> <li>• 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.</li> </ul>
18 May 2009	<ul style="list-style-type: none"> <li>• Final day to submit student data.</li> <li>• Schools notified if they have been randomly selected to submit their five representative samples.</li> </ul>
December 2009	<ul style="list-style-type: none"> <li>• Schools retain all <i>Student booklets</i> until the end of the school year.</li> </ul>



# Section 2: Implementing this QCAT

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

**The purpose of this QCAT is for students to use non-standard units of measurement to estimate distances and to solve related mathematical problems.**

## Getting ready

In preparation for this QCAT, the teacher implementing the assessment will need to:

1. Measure the length from the floor to the tip of your finger when your arm is fully raised over your head.

..... cm (Used in Setting the Scene: Group discussion)

2. Measure your height.

..... cm (Used in Setting the Scene: Group discussion)

3. Measure the length of your regular step.

..... cm (Used in Question 3)

4. Measure and set out a 20-metre-long course close to the classroom.

Possible methods include making two chalk marks on a path or on the floor of a corridor, or laying a tape measure on grass to a length of 20 metres. (Used in Question 1)

5. Decide on an object for students to measure in Question 2.

Suggestions include a blackboard or whiteboard, a notice board, or the teacher's desk. You may choose to use more than one object and divide students into groups. Record in the space below the length of the objects selected. Use these to check whether student responses are reasonable.

Object ..... Length ..... cm

Object ..... Length ..... cm

Object ..... Length ..... cm

6. Make sure that each student has access to a ruler, a calculator, pencils and an eraser.

## On the day

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

<b>Setting the scene: Group discussion</b> <i>approximately 20 minutes (at teacher's discretion)</i>		
Teacher	Student	Materials
<p>Read Setting the scene: Group discussion (<i>Student booklet</i>, p.3) with the whole class. Emphasise the difference between guessing and estimation.</p> <p>Follow these steps to complete the estimation challenge:</p> <ul style="list-style-type: none"> <li>• Stand tall at the front of the class and raise one arm straight up.</li> <li>• Tell students to estimate the distance from the floor to the tip of your finger.</li> <li>• Make sure students write down their estimate in their <i>Student booklet</i> on page 3.</li> <li>• Discourage discussion of lengths between students.</li> <li>• After all students have attempted an estimate, reveal the correct answer.</li> </ul> <p>Open a discussion about estimating lengths by asking questions such as:</p> <ul style="list-style-type: none"> <li>• Who just guessed?</li> <li>• What knowledge did you use to help you estimate the length?</li> <li>• Would it have helped you if I had told you how tall I am? How would that have helped?</li> </ul> <p>Tell the class how tall you are. The critical thing to demonstrate is how much easier it is to estimate a length or distance if you have a point of reference with which to compare.</p> <p>Discuss ways of reliably estimating distances without rulers or tape measures. Lead discussion towards the use of personal measurements that are easily accessible in daily life. Tell students strategies you have used to estimate lengths.</p> <p>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 being valued in the student responses.</p> <p>Instruct students that they must stop and wait for your directions at the bottom of page 3.</p>	<p>Students read Setting the scene: Group discussion and respond to teacher's questions.</p> <p>Students listen and contribute answers and ideas to discussion.</p> <p>Students estimate the length from the floor to the tip of their teacher's finger.</p>	<p><i>Student booklet</i></p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

### Recording personal measurements, Q 1–3

*Suggested time: 60 minutes*

*Allow 5 minutes for reading and clarification of the requirements of the task.*

Teacher	Student	Materials
<p>Introduce Question 1 and explain what students are required to do. Use the diagrams on the personal measurement chart to help.</p> <p>Ensure each student has access to a ruler and calculator.</p> <p>Have students complete their hand spans and shoe length measurements first.</p> <p>If students are not wearing shoes, foot length is fine.</p> <p>Take students out to the 20-metre course to count their steps, then return to the classroom to complete Question 1.</p> <p>Instruct students that they must stop at the bottom of page 4 and wait for directions.</p> <p>For Question 2, select something in your classroom that is suitable to measure, e.g. the blackboard, the whiteboard, a pin board or something of a similar length (2 to 4 m).</p> <p>It may be more convenient to mark out several lengths on the floor either inside or outside.</p> <p>Instruct students to write the name of the object they are estimating the length of in the space provided in Question 2a.</p> <p>Supervise students as they use hand spans, shoe lengths and step lengths to measure the object.</p> <p>Write your step length on the board.</p> <p><b>Note:</b> Ask if any students have the same step length as the teacher. Students in this situation should use the step length of another student instead of the teacher's step length. Make a note of the step length they will use at Question 3 in their student booklet.</p> <p>Instruct students to complete Questions 2 and 3.</p> <p>Instruct students that they must stop at the bottom of page 7 and wait for directions.</p>	<p>Students listen and contribute answers and ideas to discussion.</p> <p>Students listen to task expectations and may ask clarifying questions.</p> <p>Students measure their own hand span and shoe length, recording their personal measurements in the table.</p> <p>They then step out the 20-metre course and calculate their step length.</p> <p>Students then complete Question 2a, measuring the length of the teacher's chosen object with hand spans, shoe lengths and steps.</p> <p>Students complete Questions 2b, 2c and 3 at their desks.</p>	<p><i>Student booklet</i></p> <p>calculator</p> <p>30 cm ruler</p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

**Estimating distance, Q 4–6***Suggested time: 30 minutes**Allow 5 minutes for reading and clarification of the requirements of the task.*

Teacher	Student	Materials
<p>Instruct students to read the text and look at the mud map.</p> <p>Explain that a pedometer is a measuring instrument for recording the number of steps taken when walking.</p> <p>Remind students about their step length as a non-standard unit and clarify the instructions for Questions 4 to 6.</p> <p>Instruct students to complete Questions 4 to 6.</p>	<p>Students read the instructions for the assessment and may ask any clarifying questions.</p> <p>Students work independently to complete Questions 4 to 6.</p>	<p><i>Student booklet</i></p> <p>calculator</p> <p>30 cm ruler</p> <p>HB pencil</p> <p>sharpener</p> <p>eraser</p>

## 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:

- manipulating and rearranging algebraic expressions
- completing and analysing data tables
- analysing situations to identify strategies and procedures to generate a solution
- interpreting maps
- communicating thinking and reasoning.

## Section 3: Resources

### The selected *Essential Learnings*

The 2009 QCATs will assess what students know, understand and can do. The following selection of Year 5 Mathematics *Essential Learnings* form the basis of the 2009 assessment.

#### Mathematics *Essential Learnings* by the end of Year 5

##### Ways of working

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

Students are able to:

- identify and describe the mathematical concepts, strategies and procedures required to generate solutions
- pose questions and make predictions based on experience in similar situations
- plan activities and investigations to explore concepts, pathways and strategies and solve mathematical questions, issues and problems
- identify and use mental and written computations, estimations, representations and technologies to generate solutions and check for reasonableness of solutions
- make statements, predictions, inferences and decisions based on mathematical interpretations
- evaluate their own thinking and reasoning, in relation to the application of mathematical ideas, strategies and procedures
- communicate and justify thinking and reasoning, using everyday and mathematical language, concrete materials, visual representations and technologies.

##### Knowledge and understanding

*Knowledge and understanding* describes essential concepts, facts and procedures.

##### Number

**Whole numbers, simple and decimal fractions and a range of strategies are used to solve problems.**

- Place value of digits in whole numbers and decimal fractions changes when they are multiplied and divided by 10 and 100.
- Whole numbers (to thousands) and decimal fractions (to hundredths) can be calculated using addition and subtraction.
- Whole numbers can be multiplied and divided by whole numbers to 10.

##### Measurement

**Length, area, volume, mass, time and angles can be estimated, measured and ordered, using standard and non-standard units of measure.**

- Timelines, clocks, calendars and timetables are used to sequence, schedule and calculate timed events.
- Standard units, including centimetre, metre, square centimetre, square metre, gram, kilogram, minute, degree, millilitre and litre, and a range of instruments are used to measure and order attributes of objects, including length, area, volume, mass, time, and angles.
- Links exist between different ways of recording the same measurement.
- Reasonable estimates can be made using strategies that suit the situation.

### Space

Geometric features are used to group shapes and guide the accuracy of representation of 2D shapes and 3D objects. Mapping conventions apply to the structure and use of maps and plans.

- Mapping conventions, including symbols, scales, legends and alphanumeric grids, are used to represent and interpret movements and to identify locations on maps and plans.
- Mapping conventions, including the four major compass points, are used to give direction and movement and can be linked to turns.

### 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

## 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.

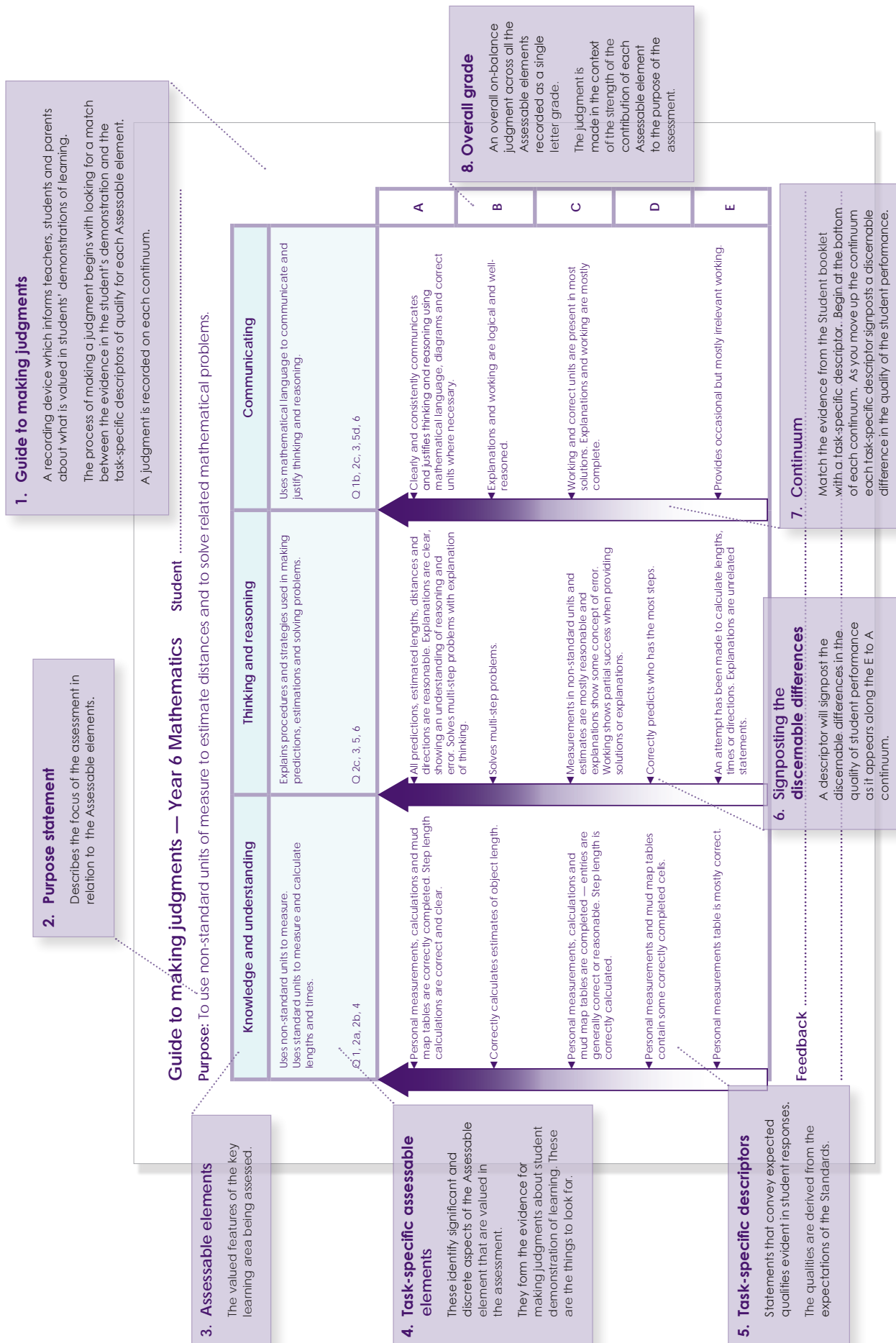
#### D standard

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*.


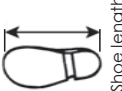
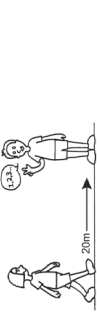
**Disadvantage** — Teachers are not involved in the rich professional dialogue of reaching consensus with other teachers. This model can be used to reach consistency within a school, but does not best support consistency of teacher judgments across the state.



Model response

Recording personal measurements

1 a) Complete the table below to find three personal measurements. Use a ruler and round your measurements to the nearest centimetre.

Non-standard unit	Personal measurement
	My hand span is: ..... 21 ..... cm
	My shoe length is: ..... 28 ..... cm
 Number of steps taken to walk 20 metres. (Use the track marked out by your teacher for this.)	The number of steps I took is: ..... 30 ..... steps

1 b) Find the length of one of your steps in centimetres.



- Divide the distance you walked (in centimetres) by the number of steps you took.
- Round your answer to the nearest centimetre.

Show all your working

$$2000 \div 30$$
$$\approx 66.66$$

or 67 cm

One of my step lengths is about ..... 67 ..... centimetres

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

Now that you have recorded three personal measurements, you will use them to estimate other lengths.  
Your teacher will provide an object for you to measure.

2 a) Measure the length of the object using your non-standard units. Record them in the table below.

Name of object: whiteboard

Non-standard unit	Number	Personal measurement (from page 4)
My hand span	11 hand spans	21 cm
My shoe length	8 shoe lengths	28 cm
My step length	4 step lengths	67 cm

2 b) Estimate the length of the object by converting your measurements of the object into centimetres.

My calculation of the length of the object:

- using my hand span is 231 cm
- using my shoe length is 224 cm
- using my step length is 268 cm

## Model response

2 c) Complete the statements below.

My estimates of the object may not be all the same because I may have

changed the size of my hand span or step length when I was

using them to measure. My total count of these may not have

been a whole number.

I predict the non-standard unit that would give the most accurate estimate over this distance is:

shoe length

because the length of my shoe does not change where as my

hand span and step length may vary as I use them to measure.



6

Write your teacher's step length here: 76 ..... cm

Suppose you and your teacher walked 1000 metres together.

3 a) Who would take the most steps? ..... me

3 b) How many more steps would that person take? ..... 177 steps more

Explain how you worked this out.  
Show all working.

My teacher's steps:

$$1000 \text{ m} \div 0.76 \text{ m}$$

$$= 1315.8$$

$$\approx 1316 \text{ steps}$$

My steps:

$$1000 \text{ m} \div 0.67 \text{ m}$$

$$= 1492.5$$

$$\approx 1493 \text{ steps}$$

$$1493$$

$$- 1316$$

$$\hline 177$$

I take 177 more steps than my teacher.

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

7

Model response

4. Complete the table below using information from page 8.

Section	Distance walked in section (steps)	Distance walked in section (metres)	Time arrived at end of section	Time taken for section (minutes)
1. school front gate to corner Danzig Rd & Bridge Rd	1450	870	3:29 pm	14
2. corner of Danzig Rd to western end of the bridge	500	300	3:37 pm	8
3. western to the eastern end of the bridge	200	120	3:41 pm	4
4. eastern end of the bridge to corner Park St & Church Ave	450	270	3:45 pm	4
5. corner of Park St to corner Church Ave & View St	1150	690	4:01 pm	16
6. corner of Church Ave to home	1000	600	4:09 pm	8

- 5 a) Circle the section that is the shortest distance: 1   2   **3**   4   5   6
- 5 b) How long did it take Jack to walk home? **54 minutes**
- 5 c) How far does Jack walk home in metres? **2850m or 2.85km**
- 5 d) **Where is Jack when he has walked half the distance home? Circle your answer below.**

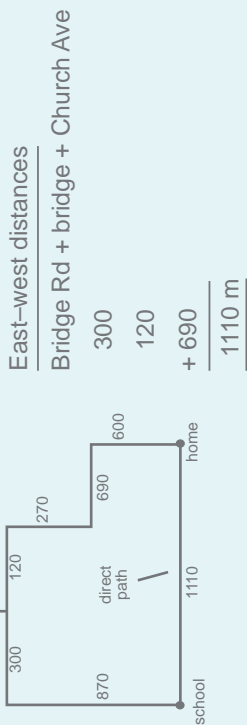
On Danzig Rd   On Bridge Rd   On the bridge   **On Park St**   On Church Ave

Explain how you worked this out.

Total number of steps = 4750. Halfway is  $4750 \div 2 = 2375$  steps. At the beginning of Park St, Jack had walked 2150 steps. By the end of Park St, Jack had walked 2600 steps. Jack would have walked his 2375th step on Park St. Park St is halfway home.

- 6 a) Work out the distance (in metres) between the school gate and Jack's home along the new road.

Show all your working.



The school is 1110m from Jack's home.

- 6 b) State the direction of the school from Jack's house. **West**

Guide to making judgments — Year 6 Mathematics

Student

Purpose: To use non-standard units of measure to estimate distances and to solve related mathematical problems.

Knowledge and understanding	Thinking and reasoning	Communicating					
<p>Uses non-standard units to measure. Uses standard units to measure and calculate lengths and times.</p> <p>Q 1, 2a, 2b, 4</p>	<p>Explains procedures and strategies used in making predictions, estimations and solving problems.</p> <p>Q 2c, 3, 5, 6</p>	<p>Uses mathematical language to communicate and justify thinking and reasoning.</p> <p>Q 1b, 2c, 3, 5d, 6</p>					
<div>Personal measurements, calculations and mud map tables are correctly completed. Step length calculations are correct and clear.</div> <div>Correctly calculates estimates of object length.</div> <div>Personal measurements, calculations and mud map tables are completed — entries are generally correct or reasonable. Step length is correctly calculated.</div> <div>Personal measurements and mud map tables contain some correctly completed cells.</div> <div>Personal measurements table is mostly correct.</div>	<div>All predictions, estimated lengths, distances and directions are reasonable. Explanations are clear, showing an understanding of reasoning and error. Solves multi-step problems with explanation of thinking.</div> <div>Solves multi-step problems.</div> <div>Measurements in non-standard units and estimates are mostly reasonable and explanations show some concept of error. Working shows partial success when providing solutions or explanations.</div> <div>Correctly predicts who has the most steps.</div> <div>An attempt has been made to calculate lengths, times or directions. Explanations are unrelated statements.</div>	<div>Clearly and consistently communicates and justifies thinking and reasoning using mathematical language, diagrams and correct units where necessary.</div> <div>Explanations and working are logical and well-reasoned.</div> <div>Working and correct units are present in most solutions. Explanations and working are mostly complete.</div> <div>Provides occasional but mostly irrelevant working.</div>	A	B	C	D	E

Feedback