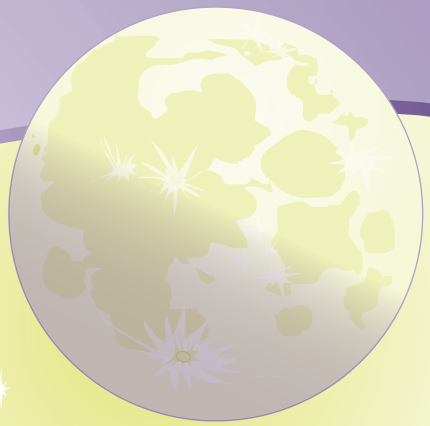
QCATs
Queensland Comparable Assessment Tasks

2009

6

SCIENCE

TEACHER GUIDELINES



Moon phases

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

SECTIONS IN THIS BOOKLET:

Queensland Government

QSA Queensland Studies Authority
Partnership and innovation

Contact information:

Information about the QCAR Framework is available on the QSA website <www.qsa.qld.edu.au>. Select Assessment > Queensland Curriculum, Assessment and Reporting (QCAR) Framework.

Direct questions concerning implementation or receipt of materials to:

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Contents

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.

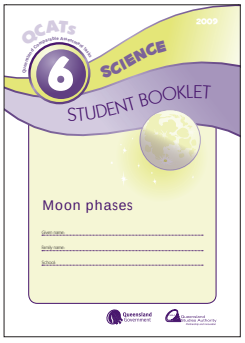
QCATs are assessments that encourage and rely upon interaction between teachers and students. They ask students to use relevant knowledge and skills to respond to a meaningful problem.

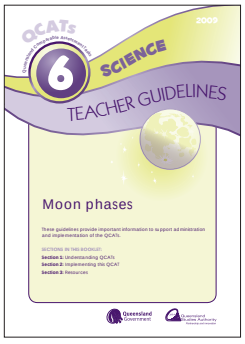
These assessments are resources that provide teachers, students and parents or carers with information to contribute to discussions about student learning and to plan for future learning. The effectiveness of these assessments in providing helpful information will depend on the level of interaction teachers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





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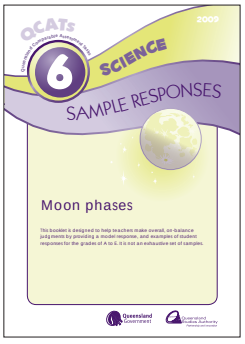


(Found online in the QSA Assement Bank)

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	• QCATs arrive in schools.
16 March – 18 May 2009	• 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	• Final day to submit student data. • Schools notified if they have been randomly selected to submit their five representative samples.
December 2009	• Schools retain all *Student booklets* 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 understanding and interpretation of the causes of day and night, and of Moon phases.

Getting ready

Students should have had opportunities to participate in practical activities, demonstrations or simulations of the causes of day and night and the phases of the Moon.

These websites have a range of activities and resources that you may find useful.

- Lunar cycles: Moon phases activity,
  The Learning Place — Education Queensland's eLearning environment,
  <http://education.qld.gov.au/learningplace> (Membership is required)
  Search for "Lunar cycles: Moon phases" in the Curriculum exchange (CX) section of the site.
- Educator's Guide to Moon Phases, JPL Education Gateway,
  <http://education.jpl.nasa.gov/educators/moonphase.html>.
- Science Projects for Kids: The Moon, How stuff works,
  <http://home.howstuffworks.com/science-projects-for-kids-the-moon2.htm>.
- How the Moon works, How stuff works,
  <http://science.howstuffworks.com/moon.htm>.
- Why is space black?, Goddard Space Flight Center,
  <www.gsfc.nasa.gov/scienceques2002/20030328.htm>.
- Spinning in space, unit from Primary Connections,
  <www.science.org.au/primaryconnections/spinninginspace.htm>.
- Resources from the Melborne Planetarium,
  <http://museumvictoria.com.au/planetarium/DiscoveryCentre>.
- On the moon's phases (animation) cyclopedia selenica,
  <www.inconstantmoon.com/cyclopedia.htm> select on the Moon's Phases.
- Stellarium Planetarium, free planetarium software,
  <http://www.stellarium.org>.

Note that some terms discussed in this topic are imprecise. A day is not exactly 24 hours, the Moon's orbit is usually 28 days but sometimes 29, and orbits, while very close to circular, are in fact elliptical. Some students may be aware of these details, but they do not need to be considered in this assessment.

Students may notice a discrepancy between the Moon phase diagrams and their actual observations of the Moon. The moon phases are presented intentionally from a Northern-hemisphere perspective. The reason for this is that maps and globes use the convention of placing the North Pole at the top, and most Moon phase activities use a Northern-hemisphere

viewpoint (including those listed previously). Consequently, the Earth–Moon diagrams in the task are drawn from a Northern-hemisphere perspective to reflect students' experiences with maps, globes and moon phase activities.

This task assesses how students interpret data as presented in the diagrams provided. The orientation of the moon phase is not being assessed and should not be considered when grading. However, the difference between North–South viewpoints, as well as the arbitrary nature of North as "up", could stimulate engaging follow-up class discussions.

On the day

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

Setting the scene: Group discussion *Approximately 20 minutes (at teacher's discretion)*		
Teacher	**Student**	**Materials**
The following steps are suggested: • Read with the class Setting the scene: Group discussion (page 3 of the *Student booklet*). • Discuss issues that arise and any related questions that students pose. • Discuss the purpose of the assessment and explain in student-friendly terms the Assessable elements against which student work will be judged. Assessable elements are found in the *Guide to making judgments* on the back page of these guidelines and of the *Student booklet*. • Instruct students that they must stop and wait for your direction at the bottom of page 3.	Students read Setting the scene: Group discussion, participate in a teacher-led discussion about the assessment requirements, and ask clarifying questions.	*Student booklet*

The Earth and Moon in motion, Q 1–7

Suggested time: 40 minutes

Allow 5 minutes for reading and clarification of the requirements of the section.

Teacher	Student	Materials
Emphasise the need for students to take time to read the instructions and questions carefully, seek clarification if necessary and use their understanding to compose answers thoughtfully. Provide reading or writing support as needed. Discuss Diagram 1 with students, including the notes about the actual distance to the Moon. Supervise completion of the section, encouraging students to attempt all questions. If students ask whether they can use words more than once in Question 1, suggest that they may but that they should rethink previous answers. For Question 5, students may write the word "day" or "night" as an alternative to colouring. In Question 7, ask the students to think about using the ball and string to explain the motion of the moon. Instruct students that they must stop and wait for your direction at the bottom of page 11.	Students listen to the expectations and ask any clarifying questions. Students work independently to complete Questions 1 to 7.	*Student booklet* pens pencils coloured pencils (blue and black) ruler

Earthrise? Q 8–10

Suggested time: 20 minutes

Allow 5 minutes for reading and clarification of the requirements of the section.

Teacher	Student	Materials
Discuss the requirements of this section, explaining to students that the information considered earlier will help them complete it. Emphasise the need for students to take time to read instructions and questions carefully, seek clarification if necessary and use their understanding to compose answers thoughtfully. Encourage students to develop their arguments in Questions 8 and 10, including, if possible, multiple pieces of evidence. Supervise completion of this section, ensuring students attempt all questions.	Students read the section and ask any clarifying questions. Students work independently to complete Question 8 to 10.	*Student booklet* pens pencils ruler

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:

- the dynamic, three-dimensional relationship of the Earth, Moon and Sun is challenging for students at this stage; manipulating models and dramatic role playing can help clarify the concepts
- students readily recall factual information, but have difficulty applying scientific concepts, drawing conclusions and generating persuasive arguments; experience with constructing arguments that include multiple pieces of evidence would be helpful.

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 Science *Essential Learnings* form the basis of the 2009 assessment.

Science *Essential Learnings* and *Standards* 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:

- evaluate information and evidence to support data gathered from activities and investigations
- draw conclusions that are supported by evidence, reproducible data and established scientific concepts
- communicate scientific ideas, data and findings, using scientific terminology and formats appropriate to context and purpose
- reflect on learning to identify new understandings and future applications.

Knowledge and understanding

Knowledge and understanding describes essential concepts, facts and procedures.

Science as a human endeavour

Science relates to students' own experiences and activities in the community.

- Scientific ideas can be used to explain the development and workings of everyday items.

Earth and beyond

Changes and patterns in different environments and space have scientific explanations.

- The earth, solar system and universe are dynamic systems.

Energy and change

Actions of forces, and forms and uses of energy, are evident in the everyday world.

- Forces may act at a distance or may need to be in contact with an object to affect it.

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
- Investigating
- 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.

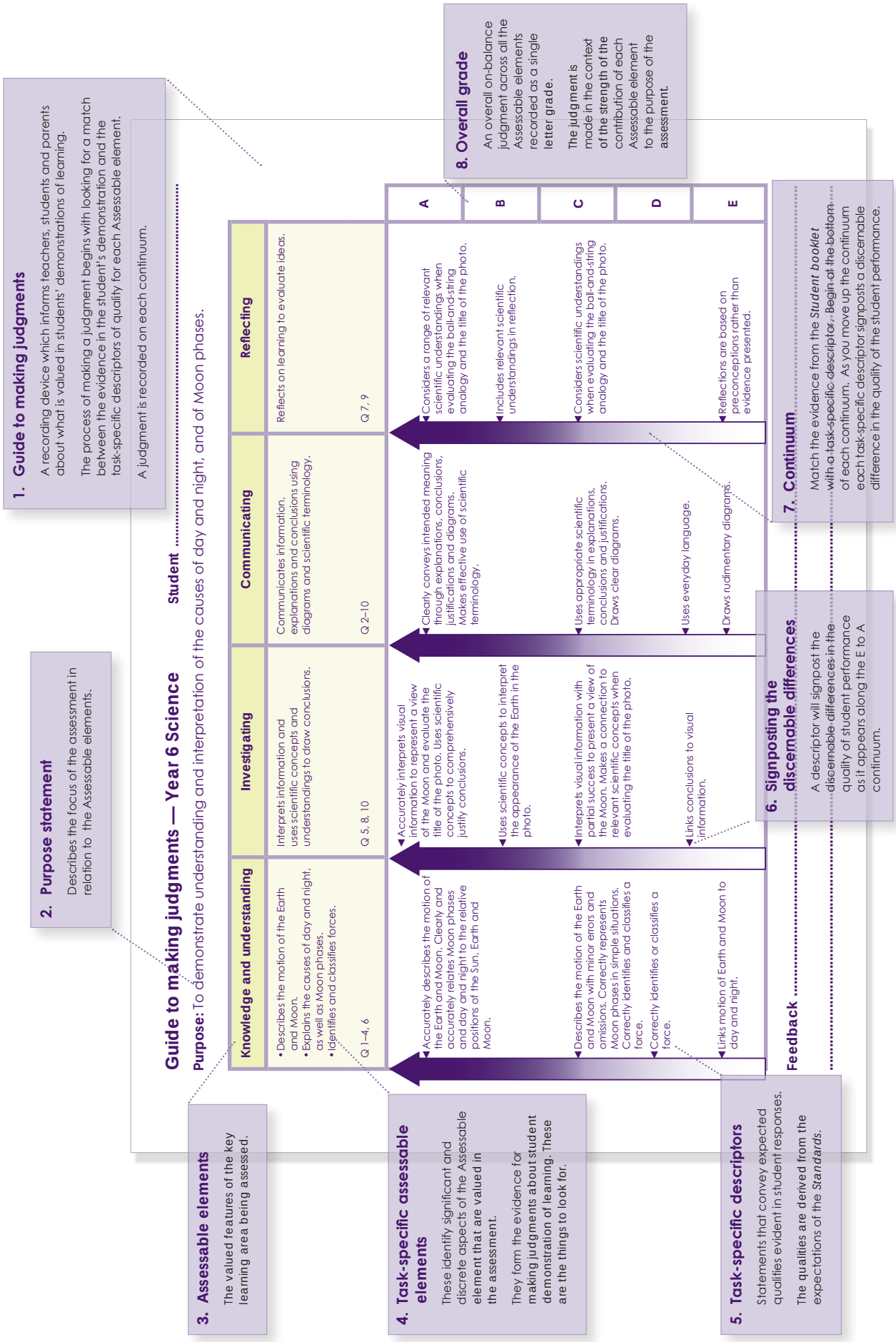
B standard
Evidence in a student's work typically demonstrates a high level of knowledge and understanding of concepts, facts and procedures, and application of processes.

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

1. Choose words from the word list to complete the paragraphs below.

Word list					
Sun	~~Earth~~	Moon	~~orbit~~	~~in shadow~~	~~phases~~
~~sunrise~~	~~reflecting~~	~~28 days~~	~~24 hours~~	~~day~~	~~night~~

- Use Diagram 1 to help you.
- Not all of the words are used.

Earth rotates once every ....24 hours..... On the side facing the Sun, it is ....day..... and on the other side it is ....night..... because it is ...in shadow..... .

Moonrise, ..sunrise..... and the appearance of the Sun and Moon moving across the sky are actually caused by the rotation of the Earth.

The Moon is in ...orbit..... around the Earth, taking about ...28 days..... for one revolution.

As it moves around the Earth, the Moon appears to go through changes in shape, called .....phases....., as we see more or less of the side that is ..reflecting..... light from the Sun.

While orbiting the Earth, the Moon also rotates slowly, almost exactly one turn during each orbit, so the same side is always facing the ...Earth..... .

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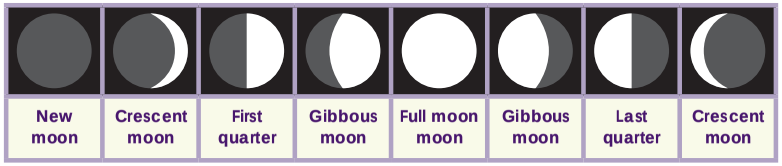
Model response

Diagram 2: Phases of the Moon



New moon	Crescent moon	First quarter	Gibbous moon	Full moon	Gibbous moon	Last quarter	Crescent moon

Diagram 3: Earth with the Moon in two different positions

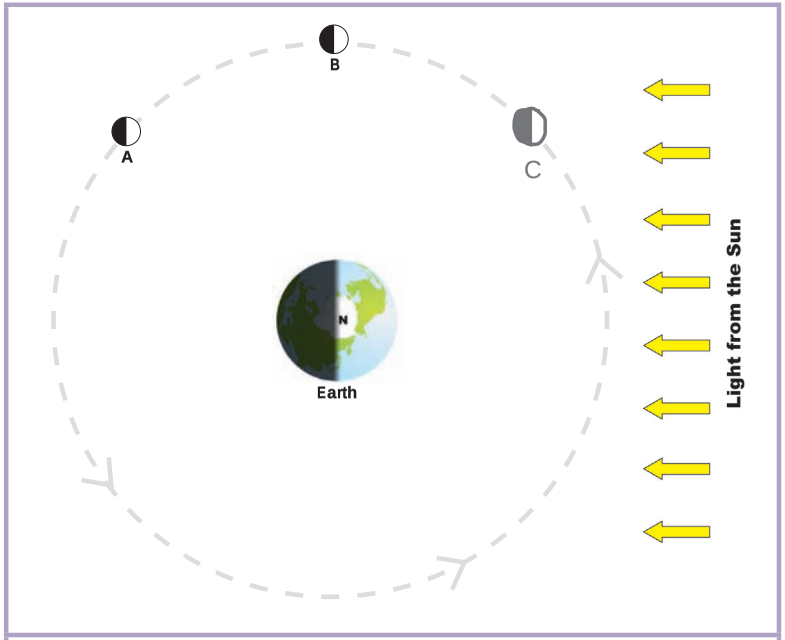
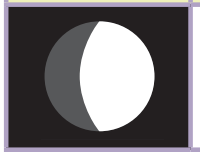


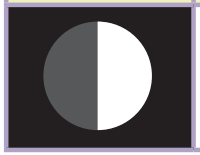
Diagram is not to scale.

Use Diagrams 2 and 3 to help you complete the following questions.

2. Shade in the shape and name the phase of the Moon when it is in position A.

View from Earth	Name of phase
	Gibbous moon

3. Shade in the shape and name the phase of the Moon when it is in position B.

View from Earth	Name of phase
	First quarter

4. Draw another moon in Diagram 3, according to the following instructions:

- **draw the Moon in a position to show the phase below**
- **label it C**
- **shade the dark side.**

View from Earth	Name of phase
	Crescent moon

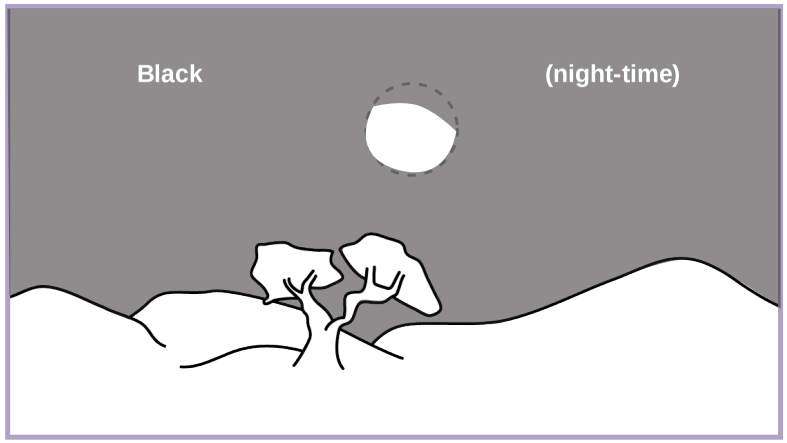
Model response

5. In the box below:

a) draw the phase of the Moon you would see from the position shown in Diagram 4

b) colour the sky to show whether it is day (blue) or night (black)

c) name the phase of the Moon: gibbous moon



Teacher note:
For Q5a, students who have drawn the correct phase but in a different orientation are considered correct.

6. Compare the ball and string with the actual Earth and Moon, by completing this table.

	The boy with the ball and string	The Earth and Moon
What are the forces stopping the Moon and ball from moving away? Choose from this list: • magnetism • gravity • reflection • string pulling in • string pulling out	string pulling in	gravity
Is the force a contact force or a force acting at a distance? Circle one in each case.	(a contact force) or a force acting at a distance	a contact force or (a force acting at a distance)
Does the same side of the Moon (or ball) always face Earth (or boy)? Circle one in each case.	(Yes) or No	(Yes) or No

7. Think about using the ball and string to explain the motion of the Moon.

What is useful about the ball and string?	What is **not** useful about the ball and string?
It shows how the Moon orbits around the Earth. The string pulls the ball in, like gravity pulls the Moon in.	It looks like the Moon and Earth are connected, but they are not. The Sun is not part of the model. Doesn't show the Earth moving.

STOP HERE: WAIT FOR YOUR TEACHER'S DIRECTIONS

Model response

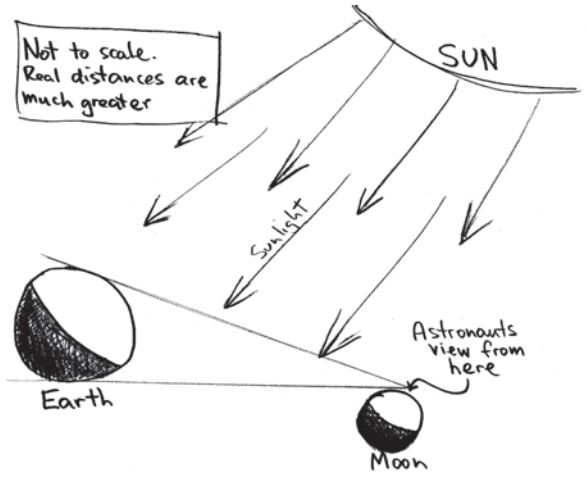
Look at the photo of the Earth.

8. Explain why the Earth has that shape in the photo.

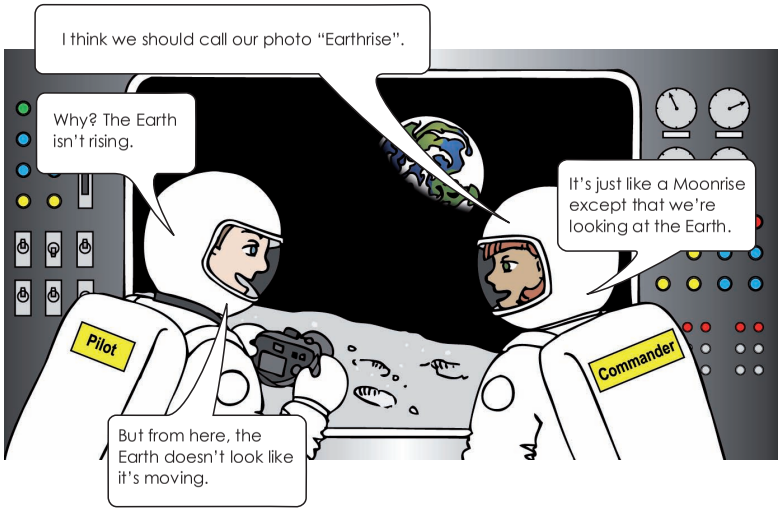
Think about what causes Moon phases.

The bright side of the Earth is lit by the Sun. The other side has disappeared in the darkness of space, and in that part of the Earth it is night-time.

Draw a diagram to show what you mean.



Here are two astronauts who have taken a similar photo.
The astronauts discussed what they should call it.



The Pilot and Commander disagree about whether "Earthrise" is a correct title.

9. List some science ideas they could use to support their opinions about "Earthrise".

- List all the evidence you can find to support one or both astronauts
- Look back over pages 4–11 for ideas.

Pilot: "The Earth isn't rising"	**Commander**: "Earthrise"
The ball and string show how the same side of the Moon always faces the Earth. The Moon would have Sunrise (because of how it moves) but no Earthrise.	If the astronauts are orbiting the Moon, they would see an Earthrise as they came around from the far side of the Moon. The Earth looks like it is rising even if it is not moving.

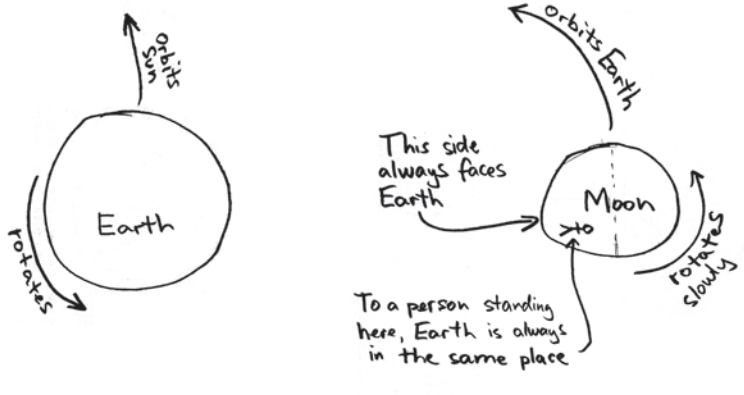
Model response

10. Decide which astronaut you agree with.

Give scientific reasons to explain your opinion. You may use a diagram.

I agree with the the Pilot because when you look at the Earth from the Moon it is always in the same position in the sky.

and this is because the Moon rotates once for every orbit and the same side always faces the Earth.



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Note: Students may successfully argue in support of either character. The required response is one that effectively uses the available evidence to support a viewpoint. For example, a student may support the Pilot's view (that the Earth isn't rising) by arguing that from the Moon's surface, the Earth will always appear in the same position.
The Commander's view may be supported by assuming they are in a moving spaceship and would see the Earth rise and set as they orbited the Moon.

Notes

Notes

Guide to making judgments — Year 6 Science

Student .....

Purpose: To demonstrate understanding and interpretation of the causes of day and night, and of Moon phases.

Knowledge and understanding	Investigating	Communicating	Reflecting	
• Describes the motion of the Earth and Moon. • Explains the causes of day and night, as well as Moon phases. • Identifies and classifies forces.	Interprets information and uses scientific concepts and understandings to draw conclusions.	Communicates information, explanations and conclusions using diagrams and scientific terminology.	Reflects on learning to evaluate ideas.	
Q 1–4, 6	Q 5, 8, 10	Q 2–10	Q 7, 9	
◀ Accurately describes the motion of the Earth and Moon. Clearly and accurately relates Moon phases and day and night to the relative positions of the Sun, Earth and Moon.	◀ Accurately interprets visual information to represent a view of the Moon and evaluate the title of the photo. Uses scientific concepts to comprehensively justify conclusions. ◀ Uses scientific concepts to interpret the appearance of the Earth in the photo.	◀ Clearly conveys intended meaning through explanations, conclusions, justifications and diagrams. Makes effective use of scientific terminology.	◀ Considers a range of relevant scientific understandings when evaluating the ball-and-string analogy and the title of the photo. ◀ Includes relevant scientific understandings in reflection.	A B
◀ Describes the motion of the Earth and Moon with minor errors and omissions. Correctly represents Moon phases in simple situations. Correctly identifies and classifies a force. ◀ Correctly identifies or classifies a force.	◀ Interprets visual information with partial success to present a view of the Moon. Makes a connection to relevant scientific concepts when evaluating the title of the photo. ◀ Links conclusions to visual information.	◀ Uses appropriate scientific terminology in explanations, conclusions and justifications. Draws clear diagrams. ◀ Uses everyday language.	◀ Considers scientific understandings when evaluating the ball-and-string analogy and the title of the photo.	C D
◀ Links motion of Earth and Moon to day and night.		◀ Draws rudimentary diagrams.	◀ Reflections are based on preconceptions rather than evidence presented.	E

Feedback .....

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