

The logo of the ACT Board of Senior Secondary Studies is a large, light blue watermark in the background. It features a stylized 'A' with a balance scale integrated into its structure, all enclosed within a house-like outline with a pointed top.

ACT Board of Senior Secondary Studies

Public Consultation Report 2020

Science Framework

- This report has been prepared following public consultation.
- All feedback submitted as part of the consultation process has been recorded and analysed.
- The responses to the feedback have been compiled following the deliberations of the Framework writing team.
- Amendments to the Framework have been made where required, as a result of the consultation process.

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Topic	Comment	Framework Developers' Response
<p>Q1 RATIONALE The rationale provides clarity about the subject's broad scope, distinctive nature and importance.</p>	<p>1. Happy with this part. But I am annoyed with the survey as a whole, as there is nowhere to make comments on other parts of the framework. So I will make them here. 1. Achievement standards refers to best practice to have distinct rubrics for yr 11 and 12. I have not seen any evidence that this enhances educational outcomes for students. teaching a class with a mix of yr 11, 12, A, T, M students, the workload is sufficient without having to design and build 5 separate rubrics for which the educational benefit of such an approach is unproven. Students are assessed against their own cohort, such an outcome can be achieved without separate yr11 & yr12 rubrics. Students should be assessed against the requirements of the unit, irrespective of whether they are in year 11 or 12. Addressing all the Achievement standards in the assessment items of a 0.5 unit would be very challenging, if not impossible.</p>	<p>Achievement Standards (AS) articulate student achievement on an A-E scale. AS can inform the development of rubrics in science.</p> <p>It is best practice that students have a clear idea of what they have to produce to achieve in either an A, T or M course.</p> <p>The BSSS provide pathways for diverse learners. This is a core value that underpins our system.</p> <p>The choice to deliver 0.5 units is a school-based decision. It is expected that assessment for a 0.5 unit addresses all knowledge, understanding and skills articulated in the Achievement Standards.</p> <p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning.</p>
	<p>2. It touches well on the overall aims of a science education.</p>	<p>Noted</p>
	<p>3. A good summary of what this subject area is about and why we teach it.</p>	<p>Noted</p>
	<p>4. The rationale is extremely broad and forward thinking.</p>	<p>Noted</p>
	<p>5. Verbose fluffy language. Yes there is awe and wonder, but we need to recognise that part of the</p>	<p>Develops will review the balance of knowledge and skills:</p>

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	<p>rationale of school science is to prepare students with the KNOWLEDGE AND SKILLS to be successful in tertiary scientific courses and beyond. The rationale is dominated by the processes by which science works at a level well beyond school. The rationale must recognise that current KNOWLEDGE underpins all the "evidence-based decisions etc which allows well-informed debate about contemporary issues.</p>	<p>Panel concluded there was a balance between skills and knowledge, particularly as many of the skills and processes cited require knowledge to be able to carry them out.</p> <p>Science is for more than tertiary preparation</p> <p>There is balance. Programs of learning will explicate that balance, and specific rubrics will make requirements apparent to students.</p>
<p>Q2 GOALS The goals comprehensively describe the intended learning.</p>	<p>1. The third dot point should include the idea that scientific knowledge is still developing, is alive and subject to new discoveries which may lead to changes in the theories underpinning our current understanding.</p>	<p>Developers to review</p> <p>Thank you. Suggestion entered</p>
	<p>2. The goals cover the important skills and idea, particularly communication and critical thinking, which are missing from the proposed achievement standards.</p>	<p>The Achievement Standards promote critical thinking (e.g. critically, analyse, evaluate communicates effectively)</p>
	<p>3. The generic nature of these cover everything but also provide scope to extend and engage students.</p>	<p>Noted</p>
	<p>4. The goals are broad, however they miss most of the key learning that occurs in science courses. The emphasis in the goals is very different to the emphasis of the courses. Only one of 7 dot points is about understanding scientific theories and models that describe and make predictions. There is no mention at all containing the learning of scientific knowledge, only the application of this knowledge.</p>	<p>The learning of scientific knowledge is implicit in all the goals, as they will have to know it to apply it. The goals are organised in this way as it would be impossible to list all the knowledge required as Science is a dynamic and evolving discipline that is constantly producing new knowledge.</p>
	<p>5. Language could be clearer (sense of wonder and curiosity about nature?) about measurement of goals.</p>	<p>Developers to review</p> <p>The achievement standards will direct assessment. This discusses a disposition towards scientific endeavour rather than an assessable component.</p>

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	<p>6. I would like to see the addition of a statement in the Goals about developing students' "ability to develop conceptual models based on evidence". So that we are encouraging students to actively engage in using experiment and observation to construct these models in addition to understanding the models as stated in the second dot-point. ***I am not sure where else to put this - I think that there needs to be more clarity in the presentation of "Assessment Criteria" on page 6. I think that I see what you are getting at with "Concepts, Models and Application" and "Contexts" but the statement as it stands is not self-explanatory. How can a student demonstrate "concepts" or "models" or "application" or "contexts". Does it need be written as "an understanding of...."?</p>	<p>Reviewers will work on the expression of the stem for the assessment criteria.</p> <p>Thank you for your advice. Change made.</p>
	<p>7. Too focused on science as a human endeavour - this provides the narrative and some contexts with which to engage students. The goals must recognise the importance of building knowledge so that the debate in future generations (and currently!) is informed rather than simple uninformed opinions.</p>	<p>The learning of scientific knowledge is implicit in all the goals.</p> <p>The goals are organised in this way as it would be impossible to list all the knowledge required as Science is a dynamic and evolving discipline that is constantly producing new knowledge.</p>

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<p>Q3 ASSESSMENT Do you think the Assessment Task Type table provides flexibility for colleges to assess students according to their needs and interests? Please provide a comment.</p>	<p>1. I have two issues with the task type table. The available types seems to cover the variety of tasks well, however the weightings for the tasks with no requirement for a variety of tasks leaves the possibility for a very narrow assessment schema to be utilised. There should be a requirement for a variety of task types to be used. My second point is to do with the number of assessment tasks. The word must be 3-5 (or 2-3 for 0.5 unit) is very limiting. I think it unusual to go outside these bounds, but I can think of situations where this could lead to limitations in the way a unit is constructed and taught that may be detrimental to the learning of the students. I think this should be recommended number of assessment items, rather than a mandated number.</p>	<p>Please note the requirement to provide a variety of assessment types.</p> <p>BSSS policy states that the number of assessments must be 3-5 for 1.0 and 2-3 for 0.5 units.</p>
	<p>2. There is basically no restriction, so strongly agree that it is flexible. However, whilst there are expectations in the requirements, these are comparatively 'small print' and not explicit in the expectation that science student build their own practical investigative skills.</p>	<p>Reformatting completed- requirements and advice collected together.</p>
	<p>3. It seems to effectively cover the types of tasks commonly used across colleges in science courses.</p>	<p>Noted</p>
	<p>4. The range is broad and the table contains "suggestions" that "may" be "incorporated". Leaves me with the impression that there is flexibility available to differentiate and customise assessment items to suit students abilities and strengths. Like how the Assessment criteria can be directly related to the three interrelated strands: SIS, SHE, SU.</p>	<p>Noted</p> <p>Teachers will be guided by the Achievement standards in devising tasks, and task rubrics will make expectations apparent to students.</p>
	<p>5. The assessment tasks do provide flexibility however I believe a number of the listed types are inappropriate for summative assessment of</p>	<p>The decision to assess anonymously is school-based.</p> <p>The list of tasks in the table are suggestions only.</p>

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	<p>students. Some of these assessment types in the table should be removed because they are impossible for teachers to mark anonymously. Anonymous marking is a very important part of the framework because it removes teacher's bias about students. Teacher bias is a serious factor that has been repeatedly shown to have a statistically significant impact on how they mark student results. Studies also show that people who believe they are unbiased are the most likely to be biased. As the following tasks cannot be done anonymously they should be removed from the table: debates, role plays, seminars/workshops/lectures, multimedia presentations (if they include the student's voice or an image of the student), interview and discussion forum. Homework/assignment problem sets are also missing from the list. This should be included. The minimum weighting for assessment tasks in 1.0 units should be increased from 45% to 50%.</p>	<p>Schools are free to choose assessment types.</p>
	<p>6. Quick check: I assume the old specification of test/non-test items is now replaced by the specification that all standards (which now explicitly include investigation skills) must be assessed (which implies that at least some research and investigation tasks must be set).</p>	<p>Correct, investigations will be required to meet the AS.</p>
	<p>7. Good selection of possible assessment types - as long as not limited to this selection. (Choice include but are not limited to...)</p>	<p>Thank you, but the developers concluded that was unnecessary as the list was clearly posed as advice.</p>
	<p>8. Not restricting the types of assessment (as the current frame work does) provides substantially more flexibility to schools.</p>	<p>Noted</p>
	<p>9. Yes, but tests are not recognised elsewhere. The wording of the "Assessment Criteria" is unclear. How can a student demonstrate: • concepts, models</p>	<p>Language clarified to "...demonstrate understanding of.."</p>

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	and application? • contexts? The criteria are listed in the achievement standards, but the wording here is not helpful Yes, they can demonstrate • inquiry skills.	
	10. A greater variety of assessment tasks and locked-in percentage for any particular task type.	The variety of assessment tasks are suggested only. The framework allows flexibility for different courses under the framework, a diversity of pathways, and a diversity of school settings.
Q4 ASSESSMENT Do you think the Assessment Task Type table makes provision for a range of pedagogical approaches (i.e. instructional and inquiry-based learning)? Please explain your point of view.	1. See above, especially regarding the number of assessment items. There may need to be some additional flexibility for assessment types for project/ inquiry based types of units.	The variety of assessment tasks are suggested only.
	2. Total free. Can easily be abused in the interpretation.	To fully assess the course using the content descriptors and achievement standards, schools will have to deploy a range of assessment types. Schools are responsible for the professional implementation of courses.
	3. It seems to effectively cover the types of tasks commonly used across colleges in science courses.	Noted
	4. There are plenty of options and they are 'suggested' = ie there is scope to be creative beyond that finite set of task suggestions	Noted
	5. The variety of tasks gives the teacher a choice - they can still assess their students in a variety of ways in line with their individual teaching approach.	Noted
	6. however, to prevent cheating, some form of in class assessment should be required (e.g. at least 25%).	The frameworks now contains a requirement that schools must have procedures for addressing possible academic misconduct. How that is approached is a school-based decision.

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	<p>7. Takes emphasis away from science being more than just a body of knowledge and exams being the only means to assess this reliably. Adds the human side due to contexts and collaboration being a key part of the process.</p>	<p>Noted</p>
	<p>8. As previously stated the assessment tasks do make provision for a range of pedagogical approaches, however I believe a number of the listed types are inappropriate for summative assessment of students. Some of these assessment types in the table should be removed because they are impossible for teachers to mark anonymously. Anonymous marking is a very important part of the framework because it removes teacher's bias about students. Teacher bias is a serious factor that has been repeatedly shown to have a statistically significant impact on how they mark student results. Studies also show that people who believe they are unbiased are the most likely to be biased. As the following tasks cannot be done anonymously they should be removed from the table: debates, role plays, seminars/workshops/lectures, multimedia presentations (if they include the student's voice or an image of the student), interview and discussion forum. Homework/assignment problem sets are also missing form the list. This should be included. The minimum weighting for assessment tasks in 1.0 units should be increased from 45% to 50%.</p>	<p>The decision to assess anonymously is school-based.</p> <p>The list of tasks in the table are suggestions only. Schools are free to choose assessment types.</p>
	<p>9. Good range of task types.</p>	<p>Noted</p>

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	10. large range of different, scientifically valid skills are covered over the range of assessment	Noted
	11. There is enough variety to tailor the task type to particular needs.	Noted
Q5 ACHIEVEMENT STANDARDS The A-E grade descriptors are clear and comprehensive descriptions. Please explain your perspective.	1. They are clear and comprehensive descriptors, there are just too many of them - which reduces their clarity. For simplicity an achievement standard for A and another for T is sufficient. The separation into year 11 and 12 criteria is an unnecessary complication. As I also stated below, the achievement standards for M students need to be more tailored on an individual basis for each student.	<p>Achievement Standards report on student achievement against system expectations. Individual rubrics can be tailored for M students based on the Achievement Standards.</p> <p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning.</p> <p>AS have been compressed to one page each.</p> <p>Some alterations have been made guided by Bloom's taxonomy</p>
	2. There is very little to distinguish the A-E descriptors	The cognitive demand and volume of learning changes across A-E.
	3. The proposed assessment criteria do not cover the skills of communication and critical thinking, which are vital parts of any science communication and currently form the main focus of the assessment I design. Some critical thinking indicators do appear across the other proposed criteria, but lose their importance when not given a unique criteria. Communication and critical thinking are also the main two areas that discriminate students. The proposed grade descriptors are less clear and comprehensive than the current descriptors. Many of the descriptions are vague, and rely on a broad application of verbs from Bloom's taxonomy to distinguish between grades, whereas the current standards provide more nuance that has been	<p>Achievement Standards are not rubrics for individual tasks.</p> <p>Teachers tailor rubrics for individual tasks.</p>

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	<p>helpful in designing specific rubrics for tasks, and for making judgements about grades.</p>	
	<p>4. Inquiry skills is too broad. The skills are what the students will take forward into any context beyond their classroom experience. The key skills of this need to be more explicit in the inquiry section and would be preferable to have them in sub categories to direct teachers re the breadth and importance of each. Eg communication in science is a key skill with too much crammed into one dot point. There is a distinct need for scientists to communicate in formal writing, to communicate concepts to different audience, to present data in clear and logical ways in different media & part of this seems bundled together with problem solving which in itself is a broad skill involving qualitative/practical and quantitative (mathematical) skills. It seems like these key skills are being diminished in favour of more contextual and 'humanities' driven science - similar to what NSW went through (some would say at the detriment of students scientific skills) and is now moving away from. There could also be emphasis that the skills for first-hand investigations and secondary source investigations are distinct and important.</p>	<p>Achievement Standards are not rubrics for individual tasks.</p> <p>Teachers tailor rubrics for individual tasks. The knowledge, understanding and skills align with the ACARA Science Achievement Standards.</p> <p>“for first-hand investigations and secondary source investigations are distinct and important.” Developers to explore: Developers concluded that the language was sufficiently broad to encompass both types of investigation in a wide range of courses.</p> <p>AS have been compressed to one page each</p>
	<p>5. While there is good differentiation in the A to E range, the skills required of a science student are not clear. Student knowledge of the content and their ability to critically think about that content are different skills and should be separated out accordingly (as they were in the previous achievement standards). In the presented descriptors, these skills appear to have been combined in the "concepts, models and</p>	<p>Content and critical thinking go hand in hand.</p> <p>Course developers will explore duplication across Achievement Standards: AS have been compressed to one page each and some alterations have been made guided by Bloom’s taxonomy.</p> <p>Achievement Standards are not rubrics for individual tasks.</p>

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	<p>applications" section. Contexts will be difficult to assess in this manner. While it is important to put student learning into an appropriate context, I believe there are too many descriptors and therefore too much weight is given to them. Inquiry skills and communication skills are separate from one another, and were kept separate in the previous descriptors, which was preferable. There should be separate section titled "communication", which includes descriptors focused on scientific writing, data presentation and referencing. I think scientific communication is becoming more important in today's world, and thus should be a skill we are developing in our students.</p>	<p>Teachers tailor rubrics for individual tasks. The knowledge, understanding and skills align with the ACARA Science Achievement Standards.</p>
	<p>6. There is no need to have separate standards for 11 & 12, there is no valid justification for this. the reasons given are not based on any valid evidence, if they were then if I had a 25 yr old in the class according to the justification I would need to assess them with different criteria.</p>	<p>Separate Year 11 and 12 Achievement Standards is a Board decision.</p> <p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning, reflecting the second year of study in the subject.</p>
	<p>7. The achievement standards align well with the 3 Australian Curriculum science strands.</p>	<p>Noted</p>
	<p>8. I like the shifting of the standards to better match the Australian Curriculum. In some areas, the wording of the standards has been improved and clarified. However, there exist a number of areas in which the descriptors are inconsistent or unclear. Some of these can be solved with minor editing; in other cases (particularly Concepts, Models & Applications) it would be good have more specific information about how the writers envisaged the standards matching to course content, and what kind of assessment evidence would be appropriate to meet each level. The Contexts standards have</p>	<p>Programs of learning will provide clarity on “what kind of assessment evidence would be appropriate to meet each level”.</p> <p>Developers will clarify language: AS have been compressed to one page each and some alterations have been made guided by Bloom’s taxonomy.</p> <p>Developers concluded that content and critical thinking go hand in hand. Course developers will explore duplication across Achievement Standards:</p>

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	<p>clear links to the AC are well differentiated between Y11 and Y12. The Inquiry Skills standards are very similar between Y11 and Y12, with some differences that might be worth revisiting. The Concepts, Models and Applications standards are rather wordy and I'm not sure that the differences between the two year groups are well linked to differences in sophistication of content.</p>	<p>AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.</p> <p>Achievement Standards are not rubrics for individual tasks.</p> <p>Teacher tailor rubrics for individual tasks. The knowledge, understanding and skills align with the ACARA Science Achievement Standards.</p>
	<p>9. Could be more discrete in achievement measurements. Uses 'analyses' a lot.</p>	<p>Blooms Taxonomy underpins the design specification for Achievement Standards. Analyses is considered the top cognitive demand in year 11.</p>
	<p>10. The A-E achievement standard descriptions are very comprehensive. I wonder if they could be slimmed down to cover fewer, more targeted, aspects - particularly in the inquiry skills. I worry that with so much details, individual teachers will not be able to become as familiar with them - the meaning might be lost and the impact reduced. Particularly around the distinction between year 11 and year 12.</p>	<p>Each description is different and reflects the sophisticated nature of science.</p> <p>AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.</p>
	<p>11. The language is inaccessible and dense. There is too much jargon that is undefined - this will be open to interpretation at moderation e.g. "system components". Descriptors for knowledge are essentially missing. The descriptors as missing will totally change the way science courses at college need to be delivered. The descriptors for inquiry skills are excessive.</p>	<p>See the glossary in courses and frameworks.</p> <p>Teachers tailor rubrics for individual tasks. The knowledge, understanding and skills align with the ACARA Science Achievement Standards.</p> <p>Inquiry is central to the work of Science.</p> <p>AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.</p>

<p>Q6 ACHIEVEMENT STANDARDS Do the Year 12 T Achievement</p>	<p>1. The standards have the addition of the word 'complex' in a few places, 'unfamiliar' in a few others. The difference between students within</p>	<p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning, reflecting the second year of study in the subject.</p>
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<p>Standards reflect higher expectations for students learning in comparison to the Year 11 T Achievement Standards? Please explain your perspective.</p>	<p>either year 11 or 12 is to do with their ability to handle more complex and unfamiliar tasks. This is used within a cohort already and should not be separated into year 11 and year 12 capabilities.</p>	
	<p>2. A few minor variations does not clarify the reality of difference in expectation between year levels. A lot of subject measures can be applied/interpreted.</p>	<p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning, reflecting the second year of study in the subject. Developers will clarify language: AS have been compressed to one page each and some alterations have been made guided by Bloom’s taxonomy.</p>
	<p>3. There is a noticeable difference in the Year 11 and 12 standards under the Concepts, Models & Applications outcome, but isn't as clear in the others. I worry that the differences are mostly bits left out the year 11 standards that are present in the year 12, rather than identifying differences in expected quality of work for the same skills.</p>	<p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning, reflecting the second year of study in the subject. Developers will clarify language: AS have been compressed to one page each and some alterations have been made guided by Bloom’s taxonomy.</p>
	<p>4. A few key term changes and adding phrases like 'for the common good' doesn't really change very much and are too subjective to make any use in the moderation driven system of the ACT. Perhaps be more specific in Yr 11 students should be able to eg apply uncertainties to data measurements.. n yr 12 perform calculations involving uncertainties in experimental calculations... (I'm not saying that this is the best example - but it is more concrete and would be more useful to the ACT system) to distinguish Yr 11 & 12 and A-E in Science in regard to skills. Many points seem to have no difference at all. Even in the 'knowledge' section saying how factors influence a system is minimally different from saying an' interplay of facts'...</p>	<p>Developers will check differences:</p> <p>The context and function of Science is a significant debate in today’s world.</p> <p>Measurement and uncertainty is encompassed in the standards in the use of the term “errors” in the AS.</p> <p>Teachers will spend time using AS to design rubrics and build common understandings.</p> <p>Teachers tailor rubrics for individual tasks for the benefit of students and families.</p> <p>AS have been compressed to one page each and some alterations have been made guided by Bloom’s taxonomy.</p>

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	5. The use of the directive verbs at the beginning of each standard differentiate between the two well.	Noted
	6. honestly, very difficult to compare at a glance. some seem identical.	Teachers will need to spend some time considering the standards.
	7. In general, yes, but there has been some inconsistent editing that leads to discrepancies (see comments above).	Developers will check differences: Thank you. Corrections made. Some alterations have been made guided by Bloom's AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.
	8. More detail in Year 12 standards, but uses a lot of similar language.	Noted
	9. I don't disagree that they are different and reflect higher expectations, but I do feel that the distinctions that are made are somewhat contrived and, in practice, will not be useful in assessing the achievement level of year 12 and year 11 students. I admit that I am not familiar with the justification of why we need to have different achievement standards for two groups of students who are doing the same unit of work - but I think the complexity of the descriptors makes it more difficult to give meaningful feedback to the students and families.	Developers will check differences between years 11 and 12 and examine reduction of inquiry standards in year 11: AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy. Teachers tailor rubrics for individual tasks for the benefit of students and families.
	10. For most there is a substantial difference but not for all	Developers will check differences: AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.
	11. The wording is different, but just adding 'critically' in front of the descriptor is not genuinely a higher expectation	Critically requires the consideration of, and accounting for differences in, established viewpoints around a position in reaching a conclusion. Please review Blooms Taxonomy and other similar discussions of hierarchies of understanding.

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<p>Q7 ACHIEVEMENT STANDARDS Do the Year 12 A Achievement Standards reflect higher expectations for students learning in comparison to the Year 11 A Achievement Standards? Please explain your perspective.</p>	<p>1. The standards have the addition of the word 'complex' in a few places, 'unfamiliar' in a few others. The difference between students within either year 11 or 12 is to do with their ability to handle more complex and unfamiliar tasks. This is used within a cohort already and should not be separated into year 11 and year 12 capabilities.</p>	<p>Year 12 Achievement Standards reflect higher cognitive demand and a greater volume of learning, reflecting the second year of study in the subject.</p>
	<p>2. The Accredited level achievement standards do not clearly reflect the cohort who undertake Accredited level of study. This may have been overlooked somewhat as Physics and Chemistry are traditionally only T level courses. The complexity of the descriptor and number of criteria for A level study are excessive and potentially discourage students from taking these courses. The criteria are still very, very, tertiary oriented and this is definitely not the target audience for these units. There can still be academic integrity without the overemphasis on multiple criteria and a complex lexicon within each criterion.</p>	<p>Teachers tailor rubrics for individual tasks. The knowledge, understanding and skills align with the ACARA Science Achievement Standards.</p> <p>Inquiry is central to the work of Science.</p> <p>The BSSS has high standards for students undertaking an A course.</p> <p>Developers will review A Achievement Standards: Some alterations have been made guided by Bloom's taxonomy.</p> <p>'A' course standards maintain rigour and require an objective standards that students are required to meet in line with the national standards expressed in ACARA documents.</p>
	<p>3. See above response.</p>	<p>See above response.</p>
	<p>4. As above - and if you want this sort of comment perhaps provide them in a format side by side to make analysis easier. constant scrolling up down back and forth is inconvenient and less likely to get valid feedback from responders.</p>	<p>Noted</p>
	<p>5. honestly, very difficult to compare at a glance.</p>	<p>Teachers will need to spend some time considering the standards.</p>
	<p>6. In general, yes, but there has been some inconsistent editing that leads to discrepancies (see comments above).</p>	<p>Developers will clarify language: Thank you. Corrections have been made.</p>

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	7. As above.	N/A
	8. see above	N/A
	9. For most there is a substantial difference but not for all	Developers will clarify language: AS have been compressed to one page each and some alterations have been made guided by Bloom's taxonomy.
Q8 ACHIEVEMENT STANDARDS Are the Science Modified Achievement Standards for Years 11 and 12 students with a mild to moderate disability appropriate? Please explain your perspective.	1. The achievement standards should not set up students with a disability for failure. The grades should be more aligned with the effort from the student, based upon their ability to achieve, not be based on an arbitrary standard.	Achievement Standards report on achievement. Teachers tailor rubrics for individual tasks.
	2. The level expected seems largely appropriate. My concerns about communication and critical thinking not being separate outcomes apply here as well, especially the communication outcome for modified students.	Teachers tailor rubrics for individual tasks.
	3. honestly, very difficult to compare at a glance.	Teachers will need to spend some time considering the standards.
	4. Description (describes...) is appropriate level of achievement for M course	Noted
	5. they are written in a way the should be achievable for most students with additional needs	Noted