Student writing and feedback – Stage 6 Science

## Sequence

To get the most from these resources they should be used as a teaching and learning sequence. One set of activities leads on to the next.

1. Improve student writing through subject vocabulary([DOCX](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Subject_vocabulary_-_Stage_6_Science.docx) | [PDF](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Subject_vocabulary_-_Stage_6_Science.pdf))
2. Improve student writing through planning for writing ([DOCX](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Planning_for_writing_-_Stage_6_Science.docx) | [PDF](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Planning_for_writing_-_Stage_6_Science.pdf))
3. **Improve student writing through writing and feedback (this document)**.

## Learning focus

With these literacy activities teachers use content that they have planned in their teaching and learning cycle. For each literacy activity an example from Biology has been provided. The example is a model for teachers. Teachers create their own specific examples for their subject and class. Teachers can modify the learning intentions and success criteria to reflect their context. Students draw upon their vocabulary and planning to complete a written response and engage with feedback to enable them to continue to build their skills.

## Syllabus outcomes

For each science subject, relevant syllabus outcomes have been provided in the [Stage 6 Science syllabus links (PDF 91 KB)](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Stage_6_Science_syllabus_links.pdf) document.

## Learning intentions

* Students complete a writing task.
* Students provide timely and effective peer feedback.
* Students have the opportunity to reflect on their writing.

## Success criteria

* Students are able to effectively complete a written response.
* Students are able to effectively provide feedback to a peer.
* Students are able to reflect on their learning needs.

## Teaching strategies

* [Activity 1: Turn and talk](#_Activity_1:_Turn)
* [Activity 2: Writing activity](#_Activity_2:_Writing)
* [Activity 3: Peer feedback](#_Activity_3:_Peer)
* [Activity 4: Teacher feedback](#_Activity_4:_Teacher)
* [Activity 5: Student self-reflection](#_Activity_5:_Student).

## Activity 1: Turn and talk



### Instructions:

* Teachers provide time in class for students to discuss the notes that they have taken and the plan that they have created for their written response.
* Teachers model their own example to share with students. An example from Biology has been included.

Differentiation:

* Teachers could provide a completed written response for students to use as a model for their own writing.
* Teachers could support students by providing specific questions for ‘turn and talk’.
* Teachers could modify this activity for specific contexts through sentence starters, scaffolded sentences or word banks.

Further support:

* Classroom talk is a powerful tool for both teaching and learning. Rich, dialogic talk supports students in making sense of complex ideas and builds classroom communities centred on meaning-making. Tools to support rich talk in the classroom were outlined in Christine Edwards-Groves 2014 paper, Talk moves: A repertoire of practices for productive classroom dialogue ([*PETAA paper 195*](https://www.petaa.edu.au/w/Publications/PETAA_Papers/w/Teaching_Resources/Papers_home.aspx)). For an example of how these tools were applied to Mathematics ‘Talk moves’ [posters, flashcards and a chart](https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/numeracy/talk-moves) are available. These practices could also be applied in the classroom in other learning areas including Science.

### Example question

* + - * 1. Describe ONE adaptation of a specific pathogen that facilitates its entry into a host.

* + - * 1. Explain how the spread of diseases is influenced by the mode of transmission of pathogens.

### Example response

In the example we use the article: [Is Ebola Evolving Into a Deadlier Virus?](https://www.newyorker.com/science/elements/is-ebola-evolving-into-a-more-deadly-virus) Richard Preston, *The New Yorker,* August 7, 2019.

#### Question

1. **Describe ONE adaptation of a specific pathogen that facilitates its entry into a host.**

The Ebola virus is a pathogen that mutates each time it replicates. This virus replicates itself every eighteen hours. The Mankona lineage of this pathogen has adapted to facilitate entry to its human hosts. This version of the virus has particularly sticky knobs on its exterior and these knobs called glycoproteins help the virus to stick to the cells and get inside the cells.

1. **Explain how the spread of diseases is influenced by the mode of transmission of pathogens.**

The Ebola pathogen, like all viruses including measles and influenza, has several ways that it transmits to people and then replicates itself to make it harder to control. This tiny microscopic parasite lives inside the cells of its host and can eventually overwhelm the immune system and kill them. The virus spreads via bodily fluids such as sweat, sneezes, blood, vomit, human waste. Because the pathogens are so small, they cannot be seen, and it is difficult to educate a large enough percentage of the world population to practise simple hygiene such as not coughing or sneezing into the open air and washing hands properly. Proper hygiene would make an impact on the spread of the virus.

## Activity 2: Writing activity

### Instructions:

* Teachers allocate enough time to complete the written response.
* Students complete their written response.

Differentiation:

* Teachers could provide a scaffold for the response, with sentence starters or layout outlines.
* Students could have their notes and planning with them for the writing task.

## Activity 3: Peer feedback



### Instructions:

* Teachers facilitate pairs of students to swap their written responses.
* Teachers brief the students on acceptable peer feedback behaviors. Including ‘two stars and a wish’ or ‘I like, I wonder’ protocols. This activity may be anonymous.
* Students are provided with the template and they fill it in to provide feedback to their peer.
* Students tick where they think the writing aligns on the template.

Additional peer feedback options:

* Teachers could give students a focus to look for, such as use of vocabulary, and assign this focus to a coloured highlighter. This could be repeated with different focusses and highlighters.
* Teachers could support students to create their own class agreed feedback template.

### Template

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Working towards | Achieved | Working beyond |
| The response answers the question. | 🞎 | 🞎 | 🞎 |
| Idea being written about is clear. | 🞎 | 🞎 | 🞎 |
| The writing has a logical structure. It makes sense when you read it through. | 🞎 | 🞎 | 🞎 |
| There is topic specific vocabulary in the response. | 🞎 | 🞎 | 🞎 |
| Sentences make sense. | 🞎 | 🞎 | 🞎 |
| Capital letters, full stops and some other punctuation is used. | 🞎 | 🞎 | 🞎 |
| Accurate spelling of challenging words. | 🞎 | 🞎 | 🞎 |
| Handwriting is consistently legible. | 🞎 | 🞎 | 🞎 |

Two successful things about this written response are:

One aspect of writing to keep working on is:

## Activity 4: Teacher feedback

### Instructions

* Teachers support their students with timely and effective feedback. Remembering that effective feedback:
	+ focuses on the intended learning
	+ identifies specific strengths
	+ points to areas needing improvement
	+ suggests a pathway that students can take to close the gap between where they are now and where they need to be
	+ chunks the amount of corrective feedback the student can handle at one time
	+ is provided in a short time frame.
* Teachers select areas to provide feedback from the templates provided or modify and use the student feedback template from [Activity 3](#_Template).
* Teacher comments could include, ‘working towards’, ‘achieved’, and ‘working beyond’.
* Teachers may choose to engage with the [National Literacy Learning Progression](https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/resources-for-schools/learning-progressions) to provide feedback to their students. To use this tool more effectively teachers could first engage with the online professional learning course: [Introduction to the Literacy and Numeracy Progressions](https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/professional-learning/introduction-to-the-literacy-and-numeracy-progressions-online).

### Feedback templates

* More information on aspects of literacy can be found at: [HSC minimum standard – Writing](https://sites.google.com/view/hsc-minimum-standard/writing).
* The links contained within the feedback sheets link to teacher resources focusing on that writing aspect.
* Teachers can modify or remove the definitions.
* Some teachers may choose to leave the definitions in place to support the students’ skill development.
* There are three templates to choose from:
	+ [Control of language](#_Control_of_language_1)
	+ [Structure and sequence of ideas](#_Structure_and_sequence)
	+ [Relevance of writing to the topic](#_Relevance_of_writing).

#### Control of language

[Spelling](https://sites.google.com/view/hsc-minimum-standard/writing/spelling). Correct spelling is consistent and some difficult words are spelled correctly. In the written response spelling is:

[Vocabulary](https://sites.google.com/view/hsc-minimum-standard/writing/vocabulary). Subject vocabulary has been used effectively in context. In the written response vocabulary is:

[Tense](https://sites.google.com/view/hsc-minimum-standard/writing/tense). Past, present and future references within sentences, and the response, as a whole are logical and consistent. For example, ‘Alex laughed’, ‘Alex laughs’, ‘Alex will laugh’. In the written response tense is:

[Punctuation](https://sites.google.com/view/hsc-minimum-standard/writing/punctuation). There is correct sentence punctuation, including capital letters and full stops. There are some correct examples of commas, proper nouns, apostrophes. In the written response punctuation is:

[Formal and informal language](https://sites.google.com/view/hsc-minimum-standard/writing/formal-and-informal-language). The tone matches the audience and purpose. The language use is consistently appropriate. **Informal language** is every day and conversational. **Formal language** uses correct sentence structures and has a feeling of authority. In the written response formal and informal language are:

Two successful things about this written response are:

One aspect of writing to keep working on is:

#### Structure and sequence of ideas

[Text structure](https://sites.google.com/view/hsc-minimum-standard/writing/text-structure) is the way that the information is organised. This could include: headings and sub-headings, is there an introductory and concluding paragraph. In the written response text structure is:

[Paragraphs](https://sites.google.com/view/hsc-minimum-standard/writing/paragraphs). Text in a distinct section that reflects a logical cohesive point. In the written response paragraphs are:

[Sentence types](https://sites.google.com/view/hsc-minimum-standard/writing/sentence-types). A sentence begins with a capital letter and ends with a full stop, question mark or exclamation mark. There are different types of sentences:

* simple sentence – a single main clause that expresses a complete thought. It has a subject and a finite verb and may also have an object, for example ‘Mary is beautiful.’, ‘The ground shook.’, ‘Take a seat.’
* compound sentence – contains two or more clauses that are coordinated or linked in such a way as to give each clause equal status. In the following example and is the coordinating conjunction: ‘We went to the movies and bought an ice cream.’
* complex sentence – contains a main (or independent) clause and one or more subordinate (or dependent) clauses. The subordinate clause is joined to the main clause through subordinating conjunctions like when, while and before, as in the following examples: ‘We all went outside when the sun came out.’, ‘Because I am reading a long book, my time is limited.’

([NSW English K–10 Glossary](https://curriculum.nsw.edu.au/learning-areas/english/english-k-10-2022/glossary) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2020.)

In the written response sentence types are:

[Cohesion](https://sites.google.com/view/hsc-minimum-standard/writing/cohesion). Features can include connectives such as ‘furthermore’ and ‘therefore’, cross-references to different parts of the text, and reiteration of the title or terms of the topic or question being addressed in the text.

([NSW English K–10 Glossary](https://curriculum.nsw.edu.au/learning-areas/english/english-k-10-2022/glossary) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2020.)

In the written response cohesion is:

Two successful things about this written response are:

One aspect of writing to keep working on is:

#### Relevance of writing to the topic

[Audience and purpose](https://sites.google.com/view/hsc-minimum-standard/writing/audience-and-purpose). Audience is the intended readers. Purpose can include, to entertain, to inform, to persuade, to educate. ‘Composers use a number of ways to achieve these purposes: persuading through emotive language, analysis or factual recount; entertaining through description, imaginative writing or humour, and so on.’

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In the written response audience and purpose are:

[Ideas](https://sites.google.com/view/hsc-minimum-standard/writing/ideas). An idea is a thought or notion that is being explained and explored. Students are encouraged to develop their ideas and create insightful and impacting points. Students will support their ideas with evidence and examples. In the written response ideas are:

[Topic vocabulary](https://sites.google.com/view/hsc-minimum-standard/writing/topic-vocabulary). Have specific words from the subject area been used effectively in the writing. In the written response topic vocabulary is:

Two successful things about this written response are:

One aspect of writing to keep working on is:

See **Literacy Learning Progression and Stage 6 Science** ([DOCX](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Literacy_Learning_Progression_and_Stage_6_Science.docx) | [PDF](https://education.nsw.gov.au/content/dam/main-education/en/home/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/stage-6-literacy-in-context-writing/science/Literacy_Learning_Progression_and_Stage_6_Science.pdf)) for information on how the National Literacy Learning Progression could support student writing and feedback in Stage 6 Science.

## Activity 5: Student self-reflection



### Instructions:

* Teachers provide students with a copy of an ‘exit slip’.
* Students complete the exit slip and detail one skill that they learnt through the literacy lessons and one skill they that they need to work on further.
* Teachers collect and review the completed exit slips to plan where to next for improving their students’ literacy skills.

Differentiation:

* Teachers and students could collaboratively plan future learning focuses.

### Exit slip template

Name:

One skill that I have learnt that improved my writing:

One skill to continue to work towards: