Science Stage 4 (Years 7 and 8)

Sample scope and sequence

# Rationale

All NSW public schools must plan curriculum and develop teaching programs consistent with the Education Act 1990 (NSW) and the NSW Education Standards Authority (NESA) syllabuses and credentialing requirements.

Scope and sequences form part of the ongoing documentation or evidence schools maintain to comply with the department’s policy, policy standards and registration requirements.

This resource has been developed to assist teachers in NSW Department of Education schools in creating learning contextualised to their classroom. The scope and sequence can be used as a basis for the teaching and learning programs and assessments and as an example of implementing the new curriculum. The scope and sequence has suggested timeframes that may need to be adjusted by the teacher to meet the needs of their students and school context.

**Note:**

* The working scientifically skills listed in the scope and sequence are those identified in the focus areas in the [Science 7-10 Syllabus](https://curriculum.nsw.edu.au/learning-areas/science/science-7-10-2023/overview). Additional working scientifically outcomes and content may be integrated into the learning.
* Data science 1 has been divided into two units of work. It illustrates one approach to dividing and distributing the content in the Data science 1 focus area. If schools prefer to integrate Data science 1 across multiple focus areas in Stage 4, all the outcomes in Data science 1 must be explicitly programmed and taught.
* Science faculties may include assessments in their scope and sequence based on their teaching plans.
* This scope and sequence includes suggested placements for the Years 7 and 8 depth studies. These are indicative, and teachers have the flexibility to decide the timing of depth studies in their curriculum, based on their students’ interests and learning needs.
* If Life Skills outcomes are being integrated or taught concurrently, they should also be included in the scope and sequence.

## Science Year 7 – plan on a page

|  |  |
| --- | --- |
| Term | Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10 |
| 1 | **Observing the universe**Outcomes: SC4-OUT-01, SC4-WS-01, SC4-WS-04 |
| 2 | **Forces**Outcomes: SC4-FOR-01, SC4-WS-02, SC4-WS-05, SC4-WS-06, SC4-WS-07Depth study: 5 hours |
| 3 | **Cells and classification**Outcomes: SC4-CLS-01, SC4-WS-01, SC4-WS-04, SC4-WS-08 |
| 4 | **Solutions and mixtures**Outcomes: SC4-SOL-01, SC4-WS-03, SC4-WS-04, SC4-WS-07 |

# Science Year 7 – scope and sequence

Table 1 – Year 7 – scope and sequence

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Term and duration | Learning overview | Outcomes | Working scientifically | Additional information |
| Term 1 Week 1 – Term1 Week 10 | **Observing the universe**In this unit, students will learn about:* the nature of science
* the practice of science
* space science
* Aboriginal and Torres Strait Islander Peoples’ cultural knowledges of astronomy.
 | **SC4-OUT-01****SC4-WS-01****SC4-WS-04** | In this unit, students develop skills in:* making observations
* using scientific tools to observe
* using a sequence of instructions to undertake a range of investigations safely.
 | [insert assessment information here] |
| Term 2 Week 1 – Term 2 Week 10 | **Forces**In this unit, students will learn about:* forces in action
* magnets in everyday life
* simple machines in everyday life.
 | **SC4-FOR-01****SC4-WS-02****SC4-WS-05****SC4-WS-06****SC4-WS-07** | In this unit, students develop skills in:* identifying and developing questions for investigation
* processing and representing data
* identifying trends, patterns and relationships in data.
 | Depth study (5 hours)[insert assessment information here] |
| Term 3 Week 1 – Term 3 Week 10 | **Cells and classification**In this unit, students will learn about:* the classification of living things
* cells.
 | **SC4-CLS-01****SC4-WS-01****SC4-WS-04****SC4-WS-08** | In this unit, students develop skills in:* using scientific tools and instruments for observations
* conducting investigations
* communicating scientific ideas and concepts.
 | [insert assessment information here] |
| Term 4 Week 1 – Term 4 Week 10 | **Solutions and mixtures**In this unit, students will learn about:* the properties of matter
* the properties of water
* solutions
* separating mixtures.
 | **SC4-SOL-01****SC4-WS-03****SC4-WS-04****SC4-WS-07** | In this unit, students develop skills in:* planning and conducting investigations
* identifying problem-solving strategies
* proposing solutions to problems.
 | [insert assessment information here] |

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## Science Year 8 – plan on a page

|  |  |  |
| --- | --- | --- |
| Term | Week 1 Week 2 Week 3 Week 4 | Week 5 Week 6 Week 7 Week 8 Week 9 Week 10 |
| 1 | **Data science 1 – part A**Outcomes: SC4-DA1-01, SC4-WS-06, SC4-WS-07 | **Living systems**Outcomes: SC4-LIV-01, SC4-WS-02, SC4-WS-05, SC4-WS-08 |
| 2 | **Living systems (continued)**Outcomes: SC4-LIV-01, SC4-WS-02, SC4-WS-05, SC4-WS-08 | **Periodic table and atomic structure**Outcomes: SC4-PRT-01, SC4-WS-05, SC4-WS-06 |
| 3 | **Periodic table and atomic structure (continued)**Outcomes: SC4-PRT-01, SC4-WS-05, SC4-WS-06 | **Change**Outcomes: SC4-CHG-01, SC4-WS-01, SC4-WS-03, SC4-WS-04 |
| 4 | **Change (continued)**Outcomes: SC4-CHG-01, SC4-WS-01, SC4-WS-03, SC4-WS-04 | **Data science 1 – part B**Outcomes: SC4-DA1-01, SC4-WS-06, SC4-WS-07Depth Study: 5 hours |

# Science Year 8 – scope and sequence

Table 2 – Year 8 – scope and sequence

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Term and duration | Learning overview | Outcomes | Working scientifically | Additional information |
| Term 1 Week 1 – Term 1 Week 4 | **Data Science 1 – part A**In this unit, students will learn about:* data
* collecting, using and analysing datasets.
 | **SC4-DA1-01****SC4-WS-06****SC4-WS-07** | In this unit, students develop skills in:* analysing data and information
* identifying problem-solving strategies
* proposing solutions to problems.
 | [insert assessment information here] |
| Term 1 Week 6 – Term 2 Week 5 | **Living systems**In this unit, students will learn about:* body systems
* plant systems
* ecosystems.
 | **SC4-LIV-01****SC4-WS-02****SC4-WS-05****SC4-WS-08** | In this unit, students develop skills in:* questioning and predicting
* processing data and information
* communicating scientific ideas and concepts.
 | [insert assessment information here] |
| Term 2 Week 6 – Term 3 Week 5 | **Periodic table and atomic structure**In this unit, students will learn about:* the classification of matter
* atomic structure
* the Periodic table.
 | **SC4-PRT-01****SC4-WS-05****SC4-WS-06** | In this unit, students develop skills in:* processing and analysing data
* processing and analysing information.
 | [insert assessment information here] |
| Term 3 Week 6 – Term 4 Week 5 | **Change**In this unit, students will learn about:* energy transfers
* chemical change
* geological change.
 | **SC4-CHG-01****SC4-WS-01****SC4-WS-03****SC4-WS-04** | In this focus area, students develop skills in:* observation
* planning and conducting investigations.
 | [insert assessment information here] |
| Term 4 Week 6 – Term 4 Week 10 | **Data Science 1 – part B**In this unit, students will learn about:* scientific models
* application of models.
 | **SC4-DA1-01****SC4-WS-06****SC4-WS-07** | In this unit, students develop skills in:* analysing data and information
* identifying problem-solving strategies
* proposing solutions to problems.
 | Depth study (5 hours)[insert assessment information here] |

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# Support and alignment

**Resource evaluation and support**: all curriculum resources are prepared through a rigorous process. Resources are periodically reviewed as part of our ongoing evaluation plan to ensure currency, relevance and effectiveness. For additional support or advice, or to provide feedback, contact the Science 7-12 Curriculum team by emailing science7-12@det.nsw.edu.au.

**Differentiation:** further advice to support Aboriginal and Torres Strait Islander students, EALD students, students with a disability and/or additional needs and High Potential and gifted students can be found on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Inclusion and differentiation 7–10 advice](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/inclusion-and-differentiation-advice-7-10) webpage.

**Assessment**: further advice to support formative assessment is available on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Classroom assessment advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/classroom-assessment-advice-7-10-). For summative assessment tasks, the [assessment task advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/assessment-task-advice-7-10) webpage is available.

**Consulted with**: Curriculum and Reform and subject matter experts.

**Alignment to system priorities and/or needs**: [School Excellence Policy](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468).

**Alignment to the School Excellence Framework**: this resource supports the [School Excellence Framework](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468) elements of curriculum (curriculum provision) and effective classroom practice (lesson planning, explicit teaching).

**Alignment to Australian Professional Teaching Standards**: this resource supports teachers to address [Australian Professional Teaching Standard](https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/meeting-requirements/the-standards/proficient-teacher) 3.2.2.

**Creation date:** 15 February 2024.

# Evidence base

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NESA holds the only official and up-to-date versions of the NSW Curriculum and syllabus documents. Please visit the NSW Education Standards Authority (NESA) website <https://educationstandards.nsw.edu.au/> and the NSW Curriculum website [https://curriculum.nsw.edu.au/home](https://curriculum.nsw.edu.au/).

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NESA (NSW Education Standards Authority) (2021) ‘[Advice of scope and sequences](https://www.educationstandards.nsw.edu.au/wps/portal/nesa/k-10/understanding-the-curriculum/programming/advice-on-scope-and-sequences)’, Programming, NESA website, accessed 14 February 2024.

Wiliam D (2013) ‘[Assessment: The bridge between teaching and learning](https://www.researchgate.net/publication/258423377_Assessment_The_bridge_between_teaching_and_learning)’, Voices from the Middle, 21(2):15–20, accessed 14 February 2024.

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