Sciences Curriculum Improvement Cycle (CIC)

Collaboration Group Day 2

12 June 2025

Summary report

Education Scotland
Foghlam Alba

Executive summary

This summary report captures the output from the second in-person Sciences Curriculum Improvement Cycle (CIC) Collaboration Group meeting which was held on 12 June 2025 in Glasgow. **The detailed output and analysis from Collaboration Day 2 can be accessed via the event Padlet.**

The Collaboration Day 2 event included 108 participants, representing 26 local authorities and key national partner organisations.

This event built on the first Sciences CIC Collaboration Day which was held on 28 November 2024, and also the work of the first Sciences CIC Core Group Workshop which took place over a four-day period from 13 to 16 March 2025.

The aims of Collaboration Day 2 were to:

- Develop a further iteration of the draft 3-18 sciences curriculum rationale
- Develop initial thinking around core knowledge, concepts and big ideas for the 3-18 sciences curriculum.

The Collaboration Group is designed to be representative of Scottish education with approximately 76% of participants being practitioners. The involvement of practitioners helps to ensure that the revised curriculum is grounded in classroom reality, is inclusive of diverse learners, and provides clarity for practitioners.

It is important to note that the CIC process is designed to be iterative and that the activities introduced at Collaboration Day 2 represented an initial pass to establish the thinking of group members in relation to the knowledge, concepts and big ideas for the new curriculum. The day provided a valuable opportunity to get some ideas down on paper which could then be revisited and refined in further detail in the months ahead.

The focus of the Collaboration Group is to support the review of the 3-18 sciences curriculum. It was agreed with the Core Group that Collaboration Day 2 would not afford the opportunity to consider senior phase arrangements for science in the detail required. This is due to the complexity of sciences pathways in the senior phase. A separate focus group was, therefore, held on the 20 June 2025 to consider senior phase matters in greater detail, within the context of a coherent 3-18 curriculum.

A two-day workshop of the Sciences CIC Core Group has been planned for the 28 and 29 August to build on the output from Collaboration Day 2 and to further iterate.

Summary of activities and outputs

The day was built around four sessions as outlined below.

Session	Focus	Table groupings	Key outputs
Session 1	Curriculum rationale	Cross-sector	Each of the 14 groups discussed and annotated the draft rationale that was the output form Core Group Workshop 1 (March 2025). The feedback has helped to develop a further iteration of the rationale.
Session 2	Core knowledge and concept headers	Sector specific	Each of the 14 groups reviewed and annotated curated draft knowledge cards developed during Core Group Workshop 1 (March 2025). Each table then grouped knowledge cards into concepts for their respective sector.
Session 3	Merging of concept headers (one version for each sector)	Sector specific	The tables came together in sector groupings and sought to align and merge their outputs from session 2 to produce one list of concept headers for each sector.
Session 4	Big ideas	Cross-sector	Each of the 14 cross-sector groups grouped concepts into 3–6 overarching big ideas and proposed titles for their big ideas.
Event task	Science – mathematics alignment	Cross-sector	Event participants were asked to add further suggestions to the output from the science and mathematics alignment focus group held on 09.06.25. This captured the key ideas and thinking to ensure the future sciences and mathematics curricula are strongly aligned.
Evaluation	Event review	Cross-sector	Participant feedback was captured on an online evaluation form to inform next steps.
Bike park	Comments and reflections from bike park	Cross-sector	Participant feedback was captured informally on the day through a bike park activity.

Emerging consensus

The day's collaborative outputs indicate emerging consensus around:

- A sciences curriculum rationale which emphasises curiosity, global citizenship, and relevance to real-world contexts
- Anchoring curriculum design in learner equity, inclusion, identity and themes such as sustainability and climate change
- Certain core knowledge, concepts and big ideas.

The structure of the activities in sector grouping allowed us to identify the following emerging sector-specific characteristics when considering the curriculum, particularly in terms of the emphases and what should and should not be included.

Sector	Emphases	Distinctive additions/removals
ASN	Accessibility, independence, safety	Removed abstract theory; added sensory engagement concepts
ELC	Curiosity, play, connection to environment	Removed formal abstractions; added sensory and nature topics
Primary	Breadth with sustainability focus	Added climate change and renewable energy topics
Secondary	Ethical and global perspectives, disciplinary rigour	Added AI, bioethics, systems thinking

The distribution of priorities shows developmental progression. ASN and ELC concentrate on concrete, sensory learning, while primary and secondary emphasise more abstract, systemic, and ethical dimensions. Maintaining coherence between these emphases is critical for a progressive learner journey from early years through to qualification stages.

Next steps

Collaboration Day 2 was positively evaluated with the headlines as follows:

- Of the **79** people who completed the evaluation, **76 (96%)** rated the event as very good or good – with **very good (70%)** and **good (26%)**.
- **74** out of the 79 respondents **(94%)** stated they felt their opinions and suggestions are being heard in the CIC process – with **strongly agree (55%) and agree (39%)**.

The output from Collaboration Day 2 will be further considered by the Sciences CIC Core Group members who are meeting for their second workshop on 28 and 29 August 2025. The Core Group is a sub-set of the Collaboration Group and comprises approximately 30 members of the Collaboration Group.

The Core Group will:

- Further refine the draft **sciences curriculum rationale** using Collaboration Day 2 feedback
- Revisit the output from Collaboration Day 2 to further refine emerging concepts and big ideas.

This work will be supported on an ongoing basis by Education Scotland's Sciences CIC Critical Friends network which includes a wide range of stakeholders including ASN specialists, learners, parents/carers, Academia (FE/HE) and industry stakeholders.

A third Sciences CIC Collaboration Group is being planned for November/December 2025.

Contents

List of Tables

1. Introduction

The Sciences Curriculum Improvement Cycle (CIC) is a collaborative process based on the Scottish approach to service design. The involvement of key stakeholders is designed to ensure Scotland's 3-18 sciences curriculum is coherent, inclusive, future-oriented and meets the needs of learners, educators and parents.

Day 2 of the Collaboration Group, held in Glasgow on 12 June 2025, built on the output from the first Collaboration Group event held on 28 November 2024 and also the four-day Core Group Workshop held between 13 and 16 March.

Collaboration Day 2 brought together 108 participants from across 26 local authorities, spanning additional support needs (ASN), early learning and childcare (ELC), primary, secondary and community learning and development sectors.

The event structure involved a mix of sector-specific and cross-sector exchanges. This allowed for both quantitative tracking (such as knowledge card retention rates by sector) and qualitative insights into how different education stages interpret and prioritise curriculum aims.

1.1 Participant overview

A total of 108 participants attended, including 93 practitioners and representatives from STEM partner organisations. The remaining 15 participants were from Education Scotland (ES) and Scottish Government (SG) staff, who attended to support table facilitation. Representation covered 26 of Scotland's 32 local authorities, ensuring geographical diversity and a spread of perspectives. Practitioners comprised 76% of participants, with the remainder representing local authority leads, policy makers, and other strategic stakeholders and partners.

Area	Number
Invited	123
Confirmed	102
Attended (total)	108
Attended (excluding ES & SG)	93
Local authorities represented	26 of 32
Practitioners	76%
Partners	24%

Table 1: *Participant overview*

The balance of practitioners and strategic leaders created an environment where discussion was rooted in **classroom reality** while also addressing **policy and system-level concerns**. The strong local authority spread reduces regional bias and enhances the representativeness of the group's outputs.

2. Session 1 – Sciences curriculum rationale

The first session focused on reviewing the **draft sciences curriculum rationale**. Participants worked **line-by-line** through the draft rationale text that had been developed by Core Group members at their four-day workshop in March 2025. Participants were asked to work in cross-sector groups to mark statements for *retention*, *rewording*, *merging*, or *removal*. Participants were encouraged to develop new statements where they felt that gaps existed.

The following provides an overview of the extent to which half or more of the tables suggested the draft text was kept, amended or deleted:

- **61% of the draft rationale text was retained as written**
- **39% of the draft text was either reworded or removed** – *For example, "All learners should enjoy and feel they are good at science"* was rephrased as *"All learners should enjoy science and feel confident in science." Groups suggested the word 'beliefs' was removed from the statement 'have secure values and beliefs.*

Broad agreement existed across tables on the *values and purposes* underpinning sciences education. Participants sought a rationale that is **concise, accessible, and avoids duplication** with the **overarching curriculum rationale**. The mixed-sector table structure ensured that voices from all learner stages were represented, shaping a rationale that balances inclusivity with academic rigour.

3. Session 2 – Core knowledge and concepts

In this session, participants worked with **a range of cards outlining key knowledge that could potentially be included in the revised sciences curriculum.** These knowledge cards had been generated by the Sciences CIC Core Group at their four-day workshop in March 2025. As with other activities, these knowledge cards were intended as a 'starter' for ten to support initial thinking and discussions.

In addition to the 62 knowledge cards generated by the Core Group, a further 34 had been refined/added which included some suggested by the Education Scotland team following a gap analysis that had been conducted in the intervening period. These were clearly marked for transparency and had been drawn from a review of PISA 2025 Framework, Learned Society reports and international curricula. Each sector worked in groups to review the cards and decided which to retain, remove or modify. Groups were given the option of adding additional knowledge cards to address any identified gaps. Cards were then grouped under provisional concept headers to identify thematic clusters.

On the day participants were grouped into 14 sector groups with the breakdown being ASN (1 table), ELC (2 tables), Primary (3 tables), and Secondary (8 tables). At the start of the session, each table was issued with the same set of 96 knowledge cards (62 generated by the Core Group + 34 refined/added). Through retaining, modifying, removing and adding cards, the combined set of knowledge cards expanded to **165 cards** by the end of the activity – evidence of both consolidation of fundamentals and thoughtful extension into contemporary themes.

How to read the lists below: "Number of tables" = how many of the 14 sector-based tables retained/removed that card. Because there are more secondary tables than other sectors, high totals often reflect broad consensus across sectors plus a high rate of selection by the secondary sector tables.

In the tables and analysis below, the following definitions have been used:

- *Retained* = cards kept from the original 96-card set.
- *Added* = new cards created during the activity (Knowledge card numbers 97 and above).
- *Modified* = cards kept but adapted (e.g., marked "b", "c", "d" suffix) to suit sector needs.
- *Removed* = cards removed from the selection to indicate an initial first pass and these may need to be reviewed in future iterations.

3.1 Analysis of activity – retained and removed cards

The table below provides an overview of the percentage of cards that were either retained, removed or added by each sector.

Sector	Retained	Removed	Added
ASN	38%	61.5%	0.5%
ELC	80%	15%	5%
Primary	85%	10%	5%
Secondary	92%	6%	2%

Table 2: *Knowledge card retention and removal*

The table below shows the knowledge cards most commonly retained by the groups.

Cards marked by an * indicate those that were retained by at least one table in ASN, ELC, primary, and secondary.

Knowledge card number	Knowledge card title	Number of tables that retained the knowledge card
43	Friction	**14/14**
32	Properties and uses of materials	**14/14**
5	Ecosystems	**13/14**
24	Heat and temperature	**13/14 ***
41	Sound	**13/14 ***
29	(Chemical) reactions	**12/14 ***
12	Biodiversity	**12/14 ***
67	Energy transfer	**12/14 ***
35	Gravity	**12/14 ***
19	Human impact on the environment	**12/14**
34	Light	**12/14 ***
44	Magnetism	**12/14 ***
90	Motion	**12/14 ***
57	Organ systems (various)	**12/14**
22	Response to climate change	**12/14**
74	Space exploration	**12/14**
52	Disease	**11/14**
64	Elements, mixtures and compounds	**11/14**
49	Ethics	**11/14**
53	Future pathways	**11/14**
88	Global contributions to scientific thinking	**11/14**
77	Non-renewable energy	**11/14**
66	Physical and chemical changes	**11/14**
25	Renewable energy	**11/14**
93	Risk assessment and safety	**11/14 ***

Table 3: *Most commonly retained knowledge cards*

The table below shows the knowledge cards that were most commonly removed and do not include any modifications. Any modified cards are not counted in this table and are reviewed in the main report. The table is not an exhaustive list and only shows the top number of cards removed.

Knowledge card number	Knowledge card title	Number of tables that removed the knowledge card	Most common rationales (summarised from table notes)
17	Rock cycle/erosion	**12/14**	Typically classed as Geography/ rather than core science; sometimes context, not core knowledge.
85	Earth science and geology	**10/14**	Often routed to Geography; some tables noted too abstract/conceptual for a broad BGE curriculum.

68	Radiation	**8/14**	Frequently flagged too advanced for broad BGE curriculum and/or lacking accessible context. (Sectors ASN, ELC and primary)
27	Carbon cycle	**7/14**	Mixed reasons: too abstract for earlier phases; sometimes duplicate/covered elsewhere. (Sectors ASN, ELC and primary).
71	DNA	**7/14**	Commonly considered too advanced/not stage-appropriate across early/middle phases. (Sectors ASN, ELC and primary).
10	Emotional wellbeing, resilience & mental health	**7/14**	Routed to Health and Wellbeing (HWB) or Personal and Social Education (PSE) rather than core science content.
38	Evolution	**7/14**	Mixed: some saw it as too advanced or overlapping with inheritance strands.
8	Food and drink	**7/14**	Often treated as HWB/Home Economics (context is not core science knowledge).
58	Genetics	**7/14**	Frequently seen as too advanced/too abstract for core knowledge.
21	Horticulture	**7/14**	Seen as contextual/duplicate or too niche for the national core.
76	Resistance	**7/14**	Typically, too advanced/specialised for broad BGE curriculum coverage.
63	Robotics	**7/14**	Sometimes seen as technology/engineering context without a clear science knowledge focus.
45	Seasons	**7/14**	Some tables sighted that this knowledge is appropriate at ELC and primary stages.
39	Space and planets	**7/14**	Some tables sighted that this knowledge is appropriate at primary stages.
47	Types of electrical circuits	**7/14**	Seen as not relevant or abstract for some sectors such as ASN and ELC.
16	Water cycle	**7/14**	Mixed response sighting that this knowledge is appropriate at primary stage. Additionally a few tables felt that it could be covered in Geography.

***Table 4**: Most common removed knowledge cards with rationale*

Removals cluster around content judged non-core to science (e.g., Geography/HWB contexts) or too advanced/abstract to be considered core knowledge to support progression in learning from 3-18 years.

There are 19 cards that were removed in every sector (at least one ASN, ELC, Primary and Secondary table removed them), led by Rock cycle/erosion (card 17) and Earth science and geology (card 85).

3.2 Activity analysis – added and modified cards

An additional 31 knowledge cards were created and added by the groups (in the text below these cards are numbered 97 and upwards). The sectors created additional cards as follows: ASN (2), ELC (1), Primary (2), Secondary (26).

A total of 38 cards were modified. In the tables below these are denoted with suffixes like *b/c/d* or "Modified card". The sectors modified the following number of cards: ASN (13), ELC (0), Primary (2), Secondary (23).

Additions largely respond to currency/relevance and clarity of physics concepts, with most proposals emerging from secondary tables. Examples include:

- Knowledge card number 97 — Workplace applications
- Knowledge card number 98 — Movement between states of matter
- Knowledge card number 124 — Electricity (circuits)
- Knowledge card number 119 — Speed, distance and time
- Knowledge card number 118 — Chemical energy
- Knowledge card number 117 — Sources of energy (renewable and non-renewable)
- Knowledge card number 116 — Science in the media
- Knowledge card number 115 — Social justice and taking action

Note: New cards typically begin in the table/sector that authored them, so initial retention counts are (by design) low. They now need quality assurance to decide which migrate into the national core vs. remain as optional/extension.

Modifications were made for a variety of reasons: simplifying language, clarifying scientific terms, and making safety and practical usage explicit — with the largest volume of edits in ASN and secondary. Examples include:

- Knowledge card number 3b — Plants and photosynthesis (retained by 2 tables): clarifies photosynthesis link to "Plants".
- Knowledge card number 62b — Use of technology in science (1): reframes as application of tools rather than a general "technology" context.
- Knowledge card number 66b/c — Physical & chemical changes / Potions & sensory play (1 each): merges scope, emphasises concrete investigation contexts.
- Knowledge card number 75b/c — Types of energy (stores/transforms; heat/light/sound) (1 each): clarifies energy store language and observable forms.
- Knowledge card number 76b — Forces instead of resistance? (1): redirects "resistance" into the broader forces line to avoid premature specialism.

The rationale given for adding cards was to create a future-orientated knowledge base (e.g., media literacy, justice/action, workplace) or to clarify building blocks for all areas of science. (e.g., circuits, speed–distance–time).

Cards were modified to ensure core ideas are clear, teachable, and developmentally appropriate, with ASN edits demonstrating how accessibility can be embedded without losing disciplinary integrity. These are initial thinking from individual tables and is a starting point.

3.3 Sector-specific insights (from sector-based tables)

Table 5 below shows some sector insights regarding knowledge card retention, additions and modifications to the cards and rationale for card removals. These are only some examples.

Sector	Retention pattern	Additions and modifications	Removals
ASN	Favoured practical, concrete knowledge.	Sensory and daily-living science concepts. Using AI, weather and seasons	Removed abstract and complex theories.
ELC	Focused on nature and environment.	Water	Removed high-level topics (e.g., genetics).
Primary	Balanced mix across disciplines.	Electricity (circuits), The Ocean	Removed niche, advanced content.
Secondary	Kept core knowledge and some more complex topics.	Plants and photosynthesis, Future energy security, Climate, Periodic table	Minimal removals, mainly language edits.

Table 5: *Sector specific insights*

Overview – ASN (1 table)
ASN retained 37 cards (38%), added 2, and modified 13 for accessibility and developmental appropriateness. Higher removals (61.5%) reflect a focus on concrete, sensory-based learning experiences tailored to individual learner needs. Focus on **concrete, sensory-rich fundamentals**. High **modification** rate (**13**) shows deliberate wording changes for accessibility and developmental appropriateness. **2** additions extend relevance to daily life and safety.

Overview – ELC (2 tables)
ELC retained 80% of cards, with small additions linked to environmental and sensory exploration. Strong retention of **immediate-experience** concepts (materials, light/sound, plants, habitats) and **safety**. Few modifications or additions at this stage; advanced molecular/genetic topics are excluded as **not developmentally appropriate**.

Overview – Primary (3 tables)
Primary retained 85%, reflecting a balance between breadth and age-appropriate depth, and added content connected to local contexts. Broad retention across **ecosystems, energy/heat, forces, reactions**. Limited modifications (**2**) and additions (**2**) and identifying some knowledge cards that are applicable to **HWB/Geography** contexts.

Overview – Secondary (8 tables)
Secondary retained 92%, making only minor removals and additions, signalling strong alignment with the full set and preparation for qualifications. High retention of **disciplinary fundamentals** and the **majority of additions (25)** to clarify science/mathematics interfaces and contemporary applications. Modifications (**2**) sharpen terminology and progression towards qualifications.

3.4 Concept headers – Cross-sector insights

Once groups had finalised their selection of knowledge cards, they were asked to cluster knowledge cards into concept headers to show how disciplinary knowledge might be structured into thematic categories. Across all sectors, groups generated a total of **97 concept headers**, with **88 unique distinct concept headers** which reveal both commonalities across ELC, primary, secondary, and ASN sector-specific emphases that reflect developmental stages and learner needs.

Themes and patterns

- **Core scientific domains**: Recurring headers across sectors include *Forces*, *Energy*, *Living things*, *Materials*, *Earth & space*, and *Being scientific.* These reflect fundamental disciplinary anchors.
- **Societal & applied science**: Especially in secondary and primary, headers such as *Sustainability*, *Climate literacy*, *Science in society*, and *Technology* emphasised real-world applications.
- **Learner-centred & experiential concepts**: ASN and ELC frequently generated concept headers such as *Living independently*, *Cause and effect*, and *Senses +*, reflecting accessibility and relevance to daily life.
- **Interdisciplinary & identity-focused headers**: Themes such as *Science identity* and *Being a scientist*, emerged particularly in secondary, highlighting equity, the scientific method and identity.

Examples of concept headers generated by each sector grouping

- **ASN**: *Living independently*, *Senses +*, *Materials*, *Future*, *Forces*.
- **ELC**: *Cause & effect*, *Food & drink*, *Our world*, *Interconnections*, *Technology*.
- **Primary**: *Living and growing*, *Energy and forces*, *Our Universe*, *Our scientific environment*, *Science of science*.
- **Secondary**: *Chemical & physical changes*, *Circuits*, *Energy & vibrations*, *Life on Earth*, *Science & society*, *Climate literacy*, *Human health*.

These examples illustrate the progression from sensory and experiential framing (ASN/ELC), through breadth of natural and social systems (Primary), to specialised and abstract disciplinary structures (Secondary).

Working in sector-based tables surfaced genuine sector preferences while still revealing strong cross-sector agreement on fundamental disciplinary ideas.

4. Session 3 – Concept header alignment

After knowledge cards were grouped into concepts in Session 2, the specific sector tables were brought together to review collectively their **concept headers** for clarity, distinctiveness, and sector relevance. Groups were invited to:

- Merge overlapping or duplicate headers.
- Rename vague or overly broad headers.

This process aimed to distil multiple versions of concept headers for each sector into a single set of sectoral concept headers.

The table below shows the change in the number of concept headers as sectors worked collaboratively to review the concepts generated within each of the individual sector groups.

- Note 1 that the number of concept headers pre-merge are a total count from all of the sector specific tables.
- Note 2 There was only one table for ASN. The ASN participants joined other sectors and took part in the alignment process with the other sectors.

Sector	Number of concept headers pre-merge	Number of concept headers post-merge
ASN	7	-
ELC	13	4
Primary	17	15
Secondary	60	16

Table 6: *Concept header reduction*

Insights

- During this session the participants in sector groups aligned the **97 concept headers** from the output of session 2 to create a final listing of **35 concept headers**.
- All sectors achieved a reduction in total headers, streamlining the number without significant content loss.
- Several headers (e.g., *Sustainability*) appeared in multiple sectors, signalling opportunities for cross-stage progression.
- Some headers remained sector-specific, reflecting distinct learning priorities – these will need careful sequencing in the national framework.

5. Session 4 – Big ideas

In session 4, participants were invited to work in mixed sector groups to cluster concepts together into 3 to 6 themes, or big ideas. These were designed as overarching thematic statements that:

- Establish what we want learners to understand.
- Connect multiple science concepts under a unifying theme.
- Allow for progression across the 3 –18 learning journey.

A total of **49 distinct big ideas** were identified.

- These big ideas were connected to **35 concept headers** after the alignment process in session 3. (Note: These **35 concept headers** were created from a total of **97 concept headers.**
- The top three big ideas (i.e., in terms of those with the most concept headers listed underneath them):
    - How things work – 11 headers across all sectors.
    - Living things – 11 headers (heavily represented in primary).
    - Being a scientist – 11 headers across all sectors
- Analysis of the findings shows a clustering of suggestions around a further two big ideas, broadly framed as: Our world and beyond; and Sustainable futures

Insights

- *Sustainability* emerged as the only theme in Our living planet, Sustainability, Climate literacy and looking after our planet present across all sectors, suggesting it could anchor the national sciences rationale.

Please see the Appendix at the end of this report for an overview of the outputs from Sessions 2-4, showing how concepts were clustered to give shape to emerging big ideas.

6. Science – mathematics alignment

Prior to Collaboration Day 2, Education Scotland organised a focus group of practitioners from various sectors and STEM subjects to discuss the alignment of science, mathematics and also technologies curriculum areas. This involved an online discussion which was held on 9 June 2025. The session invited practitioners to identify areas where alignment of these curriculum areas could be improved as we progress into a revised curriculum.

The notes from the focus group were captured and analysed and displayed on the wall in the Collaboration Day 2 venue. Over the course of the day, practitioners were invited to review the list informally and annotate it to suggest additions and amendments.

Five main overlap areas were consistently noted across sectors:

1. Graphing and data interpretation – including reading, plotting, and analysing graphs.
2. Measurement and scale – using appropriate units and conversions.
3. Number sense and proportional reasoning – ratios, percentages, and scaling.
4. Algebraic reasoning in scientific formulae – particularly relevant in physics and chemistry.
5. Sequencing and ordering – essential for experimental design and data organisation.

The table below provides sector-specific observations.

Sector	Observations & needs
ASN	Explicit, scaffolded links between maths skills and science applications. Consistency in terminology benefits all learners but is especially critical for ASN groups.
ELC	Introduce measurement concepts through play-based activities.
Primary	Sequence science content to match numeracy development.
Secondary	Coordinate advanced calculations with concurrent maths topics.

Table 7: *Science and mathematics alignment – sector highlights*

Education Scotland has compiled the detailed feedback from this activity and will use it in the months ahead to guide developments and to support coherence across these curriculum areas.

7. Evaluation overview

Of the 93 participants (practitioners and partner representatives) that attended the event, there were 79 completed evaluation forms (**84.9%** response rate). The evaluation showed very high participant satisfaction with 100% of respondents indicating that they wanted to remain in the Collaboration Group.

- Of the **79** people who completed the evaluation, **76 (96%)** rated the event as very good or good – with **very good (70%)** and **good (26%)**.
- **74** out of the 79 respondents **(94%)** stated they felt their opinions and suggestions are being heard in the CIC process – with **strongly agree (55%) and agree (39%)**.
- **73** out of the 79 respondents **(92%)** stated they trust the Sciences CIC process – with **strongly agree (52%)** and **agree (40%).**

Sector insights

ASN & ELC: Valued accessibility of discussion formats and the concrete, hands-on activities.

Primary: Appreciated the use of tangible resources and clear links to practice.

Secondary: Valued the disciplinary challenge and science – mathematics alignment task.

8. Next steps

Collaboration Day 2 has provided a great deal of insight and analysis to guide the next steps of the Sciences CIC Process. Similarly, the Sciences CIC Senior Phase Focus Group, which was held on 20 June, following Collaboration Day 2, also proved to be a fruitful and productive meeting. This provided the opportunity to look at the high-level findings from Collaboration Day 2 through a senior phase lens to see if they would be compatible with this stage in the learner journey.

The detailed findings from both events will form the basis of the two-day Sciences CIC Core Group Workshop taking place on 28 and 29 August 2025. The focus for this Core Group workshop will be to further iterate the draft sciences curriculum rationale and to do more detailed work on the concepts and big ideas. The target is for a refined draft of the sciences big ideas to be published by October 2025 to allow for wider consultation with networks and stakeholders.

Core Group members will likely meet again to look in more detail at curricular knowledge before the Collaboration Group reconvenes again in December 2025.

In June 2025, Scottish Government published a timeline for the CIC process setting out key dates and milestones. This document sets a timeline for the draft evolved curriculum technical framework for the sciences curriculum to be published in June 2026.

If you have any questions about the Sciences CIC process, then please contact Education Scotland's Sciences Team on email: science@educationscotland.gov.scot

Appendix – Overview of session 2 to 4

The following table has been created to provide an overview of the output from sessions 2, 3 and 4 and how these led from the generation of concepts by individual groups to emerging big ideas.

The emerging big ideas listed in the right-hand column have been suggested by the Education Scotland Team based on the collated output from these sessions. These are just post-event suggestions at this stage and will be taken to the Core Group workshops taking place in August 2025 for further discussion, testing and refinement.

Suggested concept headers (Session 2 – individual sector groups)	**Merged concept headers** (Session 3 – collective sector groupings)	**Big idea suggestions** (Session 4 – cross-sector groups)	**Emerging big ideas**
Home (secondary) Our world (ELC) Our world/planet (primary) Sustainability and climate (secondary) World and universe (secondary) Beyond our planet (primary) Our living planet (primary) Our planet (primary) Our universe (primary) Life on Earth (secondary) Natural world (secondary) Materials (secondary) New frontiers (secondary) Earth and beyond (secondary)	**ELC** • Our world **Primary** • The Universe • Planet Earth • Beyond Planet Earth • Life • Ecosystems **Secondary** • The environment/ecosystems • Community • Home • World and Universe	All natural processes are cyclical (Table 4) Our world and beyond (Table 13) Our place in the universe (Table 11) Our planet (Tables 7 and 14) Our unique world (Table 12) Our world or World and universe (Table 3) Planet Earth and beyond (Table 1) The future world (Table 10) The Universe and the physical world (Table 8)	**Our world and beyond**

Earth science and geology (secondary) Interdependence of biological systems (secondary) Space and planets (secondary) Interactions between living things (secondary) Climate (secondary) Community (secondary) Climate, environment and nature (secondary) The living world (secondary) Looking after our planet (ELC) Earth in space (ELC)			
Body (secondary) Life (elc and secondary) Life science (secondary) Living and growing (primary) Living things (ELC and secondary) Health (primary) Life and living things (primary) Cells (secondary) Human health (secondary)	**ELC** • Living things **Primary** • Life • Living things • Interdependence **Secondary** • Living and growing/living organisms • Life science	Life (Table 6) Living and growing (Table 7) Living things (Tables 1, 3, 13 and 14) The living world (Table 10) The science of life (Table 2) The wonder of life – Living things (Table 12) Science of life (Table 9)	**Living things**

Science of health and wellbeing (secondary) Life journeys (secondary) Individual living things (secondary) Health and disease (secondary) Food and drink (ELC) My body (ELC) Living independently (ASN) Plants (ASN) Senses + (ASN)	• Body		
Being a scientist (secondary) Being scientific (secondary) Cause and effect (ELC and primary) Science identity (ELC) Science in society (primary and secondary) Science of science (primary) Science and society (secondary) Nature of science (secondary) Becoming a scientist (secondary) Delivery and key elements (ASN)	**ELC** • Science identity **Primary** • Becoming a scientist • Skills • Society • Equity and equality **Secondary** • Role of Science in society/Being scientific • Being a scientist	Being scientific – I am a scientist (Table 13) Being a scientist (Tables 1, 2, 4, 5, 7 and 11) How do we know? (Table 14) How science impacts society (Table 8) Science identity (Tables 3 and 6) Scientists use evidence to understand the Universe (Table 4) The scientific world (Table 10) Being a scientist – science identity (Table 12) Being scientific (Table 9)	**Being scientific**

		Science and society (Table 9)	
Cause and effect (ELC and primary) Chemical changes (secondary) Energy (primary and secondary) Energy and forces (primary) Forces (ASN, primary and secondary) How things work (ELC) Interconnections (ELC) Matter (secondary) Materials (ASN) Physical and chemical changes (primary and secondary) Circuits (secondary) Energy and vibrations (secondary) Electricity and forces (secondary) Electricity (secondary) Matter and materials (secondary) Reactions (secondary) Motion and forces (secondary) Chemical world (secondary) Building blocks of matter (secondary)	**ELC** • How things work **Primary** • Energy and forces • Cause and effect • Movement **Secondary** • Matter and its interactions/chemical changes • Energy • Forces • Material science • Physical science	Big things are made of smaller things (Table 4) Energy (Table 14) How things work (Tables 3, 11, 12 and 13) How things work and interact (Table 1) Materials (Table 14) Matter of materials (Table 6) Rules of our world – Scientific principles (Table 7) The physical world (Table 10) The science of how things work (Table 2) The science of materials (Table 2) What the world is made of (Table 7) What things are made of (Table 1) How matter explains the world (Table 8) How stuff behaves (Table 9) What stuff is made of (Table 9)	**How things work**

Electromagnetism (secondary) Energy transfer (secondary) Properties of matter and chemical interactions (secondary) The physical world (secondary) Chemical reactions (secondary) Materials (ELC) Technology (ELC)			
Environmental science (secondary) Our world/planet (primary) Sustainability (secondary) Our scientific environment (primary) Environmental chemistry (secondary) Conservation and environment (secondary) Climate literacy (secondary) Climate change and sustainability (secondary) Looking after our planet (ELC) Future (ASN)	**ELC** **Primary** • The Universe • Science for climate change and sustainability **Secondary** • Sustainability/climate • Science of sustainability	Humans as transformers (Table 6) Human impact on our planet and our world (Table 6) Humans have an impact on the planet and beyond (Table 4) Science for sustainability (Table 11) Sustainable futures (Table 5) Sustaining life on Earth (Table 8) The science of sustainability (Table 2) Climate and sustainability (Table 9)	**Sustainable futures**

Table 8: *Overview of sessions 2 to 4*