Updating *Aistear* Phase 2 Consultation

Written submission template for organisations, groups and individuals

This template is intended to help you (and your colleagues) develop a written submission in relation to Updating *Aistear*. Please e-mail your completed submission to updatingaistear@ncca.ie.

The template is structured according to the Principles, Themes and Supporting *Aistear*. Each section is briefly summarised as a support for working on the submission. Before completing the template, please read the draft updated *Aistear: The Early Childhood Curriculum Framework* at this link:

https://ncca.ie/en/early-childhood/early-childhood-education-developments/updating-aistear/consultation/.

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*If you are contributing your views on behalf of an **organisation or group**, please provide details below*

Name	Sandra O'Neill
Email address:	
Name of organisation/group:	**EC STEAM network**
Does your organisation wish to be listed as a contributor to this consultation on the NCCA website?	<u>Yes</u>/No
Does your organisation wish to have this written submission published on the NCCA website?	<u>Yes</u>/No

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Key Messages of the Proposals

Phase 1 indicated that *Aistear* has stood the test of time and remains broadly relevant. However, it was indicated that some areas could be updated. This section seeks to understand your views on the proposed updates.

> **To what extent do the proposals keep the structure of *Aistear* but update individual sections?**
> This is done well

> **Do the proposals draw greater attention to the importance of interactions and relationships between babies, toddlers, young children, parents, educators and other important people in their lives?**
> Yes. See comments below about guidelines for good practice in relation to interactions and relationships with parents

> **Do the proposals emphasise babies, toddlers and young children as citizens with rights to meaningfully participate and exercise influence on decisions that affect them?**
>
> Yes. Ideas such as sustained shared thinking, supporting children's working theories, funds of knowledge should be further highlighted as a vehicle for supporting children's participation rights and active agency in their education. See further comments below about explaining and providing examples of these ideas.

> **Do the proposals embed the concepts of diversity, equity, and inclusion?**
>
> Yes. However, a wider definition of gender identity (of child or that of guardians or parents) could be more explicitly referred to

> **Do the proposals emphasise and reaffirm the centrality of learning through play and hands-on experiences?**
>
> Yes. However this is at the expense of the intentional role of the adult in supporting babies' toddlers and young children's learning. See further comments in guidelines section

> **Do the proposals support greater continuity of experience and progression of learning for babies, toddlers, and young children?**
>
> Yes. However support for science, digital literacy, process-focused STEM learning such as engineering, and progression in mathematics is absent. See comments below about children's use

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of technology, inclusion of language around mathematics and identifying appropriate maths for EC settings

Principles of *Aistear*

The number of Principles has been revised from 12 to 9 and reframed. Additionally, the proposals aim to integrate the Themes of *Aistear* in a seamless manner across the Principles. We are interested in receiving your feedback about these changes.

Please insert your feedback on the Principles of *Aistear* here:

Network members would like to highlight the following broad concepts that impact children's lives, and suggest these should be reflected in the principles of Aistear

- Children's digital lives. Technology impacts how children interact with, perceive and learn about the world. A recognition of this should be reflected in our Curriculum Framework.

- STEM is a focus of educational policy in Ireland and is included in the updated primary school curriculum. It should be named in Aistear.

- While the role of children's agency is present, examples of strategies that support this in practice should be explicitly named here - Sustained shared thinking, funds of knowledge, working theories and how this is connected to children's interests, active learning and agency

- The role of the adult. We acknowledge and support the positioning of the 'educator' as competent, confident, agentic and reflective. This says nothing about the intentional role of the adult in guiding play, designing learning environments, planning curricula. The guidance of the adult (for example to support ZPD, sustained shared thinking) is particularly important in relation to STEM subjects and children's meta-cognition. There is extensive literature about the importance of intentionality in EC e.g. Grieshaber et al., 2021; Thomas et al., 2011; Bredekamp, 2011; Epstein, 2007; MacNaughton & Williams, 2009; Fleer, 2017, 2019a, 2019b not to mention the work of Vygotsky and Rogoff.

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Themes of *Aistear*

Aistear is underpinned by four Themes of learning and development. It is proposed that the Learning Goals within each Theme remain broad, but observable statements that support babies, toddlers and young children's learning and development. It is also proposed that the Principles of *Aistear* be interwoven and visible throughout *Aistear*'s Themes.

This section seeks your detailed feedback as to whether these key changes are visible within the draft proposals. The draft proposals are available [here](#) for your information.

Please give specific feedback in relation to each of the Themes of *Aistear*.

Theme: Wellbeing

The term 'healthy choices' used here implies that children require protection from harm in relation to digital devices. This is the first mention of the use of technology in the document and it immediately implies danger. While screen time concerns are valid, young children growing up in Ireland are digital natives. They are surrounded by wi-fi enabled digital devices throughout their day, in their community and in their lives more generally.

We agree it is the responsibility of the educator to support children's safe and limited use of these materials. However, technology can also support and sustain children's interests and funds of knowledge in immediate and meaningful ways. Including a positive reflection of how technology can support learning and investigation would provide a more measured and realistic perspective.

The idea of postdigital play (see Marsh et al 2019) where children use traditional and digital materials together, seamlessly moving back and forth between the two, should be acknowledged. This is increasingly part of children's play and should be reflected in EC settings and our curriculum framework

Theme: Identity and Belonging

Digital resources and devices can support children's identity and belonging. Apps can be used to record words in children's home language, images of home can be collected and shared using digital cameras or software like padlet. Children can also use technology to make connections with the local and wider community using apps such as Zoom (for examples from Irish settings see Venkat and O'Reilly, 2022)

There is a growing understanding of the importance of establishing STEM identity early in a child's life. This is particularly important for girls and children from minority backgrounds (Hachey, 2020) and is reflected in multiple DOE policy documents since 2016. In a similar vein,

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maths anxiety, self-efficacy and identity are established in EC and have an impact on children's later achievement in all areas of learning. Maths ability entering compulsory education is the greatest predictor of children's later achievement regardless of gender or economic status of the child and has been found to be more important than IQ and children's social and emotional skills (Duncan et al., 2007). EC environments can hinder or facilitate the development of science identity which is closely linked to science achievement gaps; these begin very early, persist and can be explained by modifiable factors (Morgan et al, 2016).

Theme: Communicating

Include digital technology as one of the many ways that children can develop their communication and digital literacy skills. For example, children using voice recorders to capture their explanations/descriptions etc. Also, using tablets and a variety of carefully selected appropriate apps to communicate with people in their community or form connections with children in other settings in Ireland and abroad. We are happy to assist in curating a list of apps suitable for young children

There is also plenty of research to suggest that using e-books positively impacts children's developing literacy and communication skills, and engagement (Lee, 2017, 2020; Korat & Shamir, 2012; Richter & Courage, 2017)

Specific reference should be made to children and adults communicating through Maths talk (as per Dooley et al., 2014 published by NCCA) and using scientific language within the Aims, to make valuing of STEM within the curriculum framework more explicit. Numeracy is only touched on once in the communication section yet is widely recognised as a means of children communicating their understanding of the world in EC settings (Worthington and van Oers, 2016).

Maths talk is a core pedagogical component of the new primary school curriculum (NCCA, 2023). Continuity and consistency of approach is advised. Suggest definition of maths talk be included in the glossary (it is defined in the PSCM).

The importance of children's representations of their thinking and knowledge for STEM which contributes to their metacognitive skills and can also support the Arts and creativity in a whole variety of ways.

Theme: Exploring and Thinking

The removal of the explicit list of mathematical concepts from the learning goals is problematic -in terms of the use of Aistear as a guide to curriculum content in early childhood education. The removal of this list may suggest that a broad range of mathematical activity is neither important nor relevant in early childhood settings. It is critical that the 'Big Ideas' of mathematics be included in the content of Aistear (O'Neill, Gillic & Kingston, 2023).

The lack of "STEM" or "STEAM" as acronyms, as opposed to naming individual disciplines, again reduces its visibility and importance as reflected in policy documents. The importance of

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integrated STEM and the value of its approach within early childhood pedagogical practice (innovation, problem solving, exploring) could be lost . STEM concepts and skills are mentioned but neither processes or practices are mentioned at all, both of which are hugely important to Science and Engineering as well as Maths learning.

Suggest highlighting children having more control over their own learning here through planning and preparing the environment with children rather than for them.

Feedback in relation to specific aims
- Aim 1 - Here STEM experiences are given equal footing with geography and history but we have received no guidance on those areas and based on emphasis on STEM in Government policy, they do not have an equal footing in terms of importance.
- Aim 2 LG 1 - change 'theories' to ' their working theories'
- Aim 3 - These learning goals are really good. However, why have we not mentioned the words Science or Maths here? It seems a glaring omission considering the content.

In your reading of the proposals, are the Principles of *Aistear* interwoven and visible throughout *Aistear*'s Themes?

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Please insert any additional feedback that you would like to share with us about the proposals here:

As the EC STEAM network, our aim is to promote and support an understanding of EC STEAM in play-based settings, using pedagogy, approaches and resources that respect ECEC traditions.

Our members would like to see a more explicit mention of STEM within Aistear. ECEC is included in the STEM Implementation Plan to 2026 (DOE, 2022), and Digital Literacy has been added to the title of the updated literacy and numeracy plan. In addition, EC settings are being inspected using criteria that relate to STEM/ STEAM (DOE Inspectorate, 2022). For consistency across government departments and documents, we recommend that the term STEM/ STEAM explicitly appear in Aistear.

Recent research shows that while educators are interested in STEM, a tiny percentage have participated in any PD in relation to STEM (or its constituent parts) and it is rarely covered in initial education (see O'Neill, Gillic and O'Reilly, 2023). The DOE Inspectorate have also labelled understanding and practice in relation to STEM in EC as inadequate. We propose that naming STEM in Aistear is a crucial step in helping ECEC educators to perceive this as part of their role.

We urge the NCCA to consider the following:
- include the term STEM/ STEAMin Aistear
- include a definition of STEM/ STEAM in the glossary. Definitions from AistearSíolta.ie would be perfect
- Update the glossary's definition of numeracy to reflect the changes in understanding in relation to EC mathematics. We recommend a more all-encompassing definition. For example, "Numeracy is the knowledge, skills, behaviours and dispositions that students need in order to use mathematics in a wide range of situations. It involves recognising and understanding the role of mathematics in the world and having the dispositions and capacities to use mathematical knowledge and skills purposefully" (State of Victoria Department of Education and Training, 2018, p.6)
- Add a definition for funds of knowledge and sustained shared thinking to the glossary
- A connection between the slow pedagogy of educators and STEM can be made. STEM is about solving real world problems; revisiting ideas over and over again, slowing down, discussing, coming up with ideas together, trying to understand, and exploring children's thinking and misconceptions. These are all STEM approaches that can be easily linked to content already present in the proposal document

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Supporting Aistear

Part 1: Guidance for Good Practice

Pages 27 to 33 describe the Guidance for Good Practice. The Guidance for Good Practice expands on some of the important ideas introduced in the Principles and Themes. It also reflects other important messages, or big ideas, from Phase 1 of the consultation to update Aistear, as well as from research and wider societal and policy changes. The big ideas are organised according to Aistear's original Guidelines for Good Practice.

- *Partnerships between Parents and Practitioners*
- *Learning and Developing through Interactions*
- *Learning and Developing through Play*
- *Supporting Learning and Development through Assessment*.

It is proposed that these will be extended and supplemented through resources developed for the online *Aistear* Toolkit. Sample resources are available in Appendix 1 of the draft proposals.

Please give your overall feedback in relation to the Guidance for Good Practice.

- The removal of the role of the adult in principles requires that this important position be clarified elsewhere. The adult role in play, planning and curriculum development needs to be underscored within the guidelines.

Partnership with parents and practitioners -

- Adults in EC settings play a role in supporting parents to understand children's STEM learning. We should advocate for the intentional and best use of technology and identify children's fundamental science, maths and engineering learning.
- Partnership should reflect the cultural aspects of a child's learning and how this may impact funds of knowledge, working theories and interests. Provide examples for babies, toddler, young children.

Learning and development through interactions

- Pedagogical approaches could be a key focus in this section.
  - Challenging children's thinking through the use of provocations.

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- ○ Encouraging practices such as questioning, predicting and hypothesising as children seek to 'figure out' their immediate environment,
  - ○ Using failure as an opportunity for deeper learning and understanding - what do we now know? (Problem-solving)
  - ○ Encouraging creative thinking - thinking in possibilities, being flexible and playful and thinking new connections/ combinations.
- Open ended questions; What if...? So you think that...?What is the same about these things...? What do you think will happen if...? Do you think this is the only way...? Can you tell me how...?
- The importance of open ended questions, thinking aloud, 'I wonder?' questions provocations, sustained shared thinking, justification, maths talk.
- Concrete examples of STEAM provocations in the guidelines are required with examples of appropriate questions to extend and support children's thinking
- Again, maths talk and its relevance for EC should be included here.

Learning and developing through play

- Illustrate how play is supported, and challenged. Role of the adult is key in encouraging investigation, thinking and justification. Providing frameworks for children to plan and carry out their investigations e.g. NASA BEST engineering model
- Resourcing the play environment- descriptions should include suitable analogue and digital devices. For example, light tables, digital microscopes, overhead projectors, green screens, programmable screenless robots, digital and analogue scales, tape measures, thermometers, digital camera, digital frames, and loose parts to support the use of these devices.
- Post digital play to be included in the list of types of play. Include an explanation of the term post-digital era. For example, where digital technology is so deeply embedded in our lives and society that it becomes less of a distinct, transformative force and more of an integral and often unnoticed part of our daily lives.
- Environment as the third teacher - environments of inquiry, exploration and investigation.
- The interconnectedness of all learning so STEAM is not separated into its individual components but intertwined in many high quality play experiences. Examples to demonstrate what does STEAM play look like in an early years setting? How can STEAM learning be part of every day practice.

Assessment

- Reflect that children may document their own learning using digital devices (e.g. digital cameras). These same devices can enable parents to provide feedback which can help

extend children's interests and allow adults to understand children's funds of knowledge/
working theories

Part 2: Supporting Educators

Please provide feedback on how early childhood educators can be supported in working with the curriculum framework. For example, what resources would be helpful to include in the Guidance for Good Practice?

- STEM and its constituent parts are a relatively new idea in EC education in Ireland. The public rightly refer to Aistear for guidance around practice. Having examples of how STEM can be supported using everyday routine, materials and experiences would alleviate the introduction of formal practices as educators try to enact STEM. Specific examples of STEM indoors and outdoors is advised.

- Include explicit examples of early 'Scientific', 'technological', 'engineering' and 'mathematical' concepts in guidelines for good practice. These should be provided for babies, toddlers and young children. See Worth, 2019 for a list of everyday science practices that can be supported in EC settings.

- Include explicit examples of STEM processes. STEM also refers to ways of approaching problems, discussing ideas, justifying, and overcoming issues encountered in play. It is not limited to STEM subject content and this point should be reflected in Aistear

- A strong focus on links between children's funds of knowledge, working theories, sustained shared thinking and an emergent and enquiry-based curriculum. These ideas are present in contemporary literature in relation to children's metacognition and their identity and belonging.

- The use of provocations to introduce new and exciting ideas to children including outings and visitors-the importance of using Discovery Centres like SFI ones (the Zoo, the Reptile Museum, etc.) in their locality and also using outings in their own community to connect to experts should be illustrated

- Suggest that a range of mathematical concepts be listed and explained for educators. The proposal to remove the lists of mathematical concepts from the learning goals in Exploring and thinking is a step backward. This is important as not every pre-service course includes mathematics in its content, therefore educators still need the framework to guide children's mathematical development.

- To support educators' understanding of these ideas and to challenge *all* educators to engage with new concepts we suggest that the glossary is updated to include definitions of the following terms. Where possible, add hyperlinks in the updated document to terms in the glossary. We are happy to work with you to devise these definitions

    - STEM/ STEAM
    - STEM identity/ maths identity/ science identity
    - Maths Talk

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- Funds of knowledge
- Post-digital/ digital play
- Sustained shared thinking
- Working theories
- Provocations
- Technology including unplugged technology and screenless devices

Consider adding video to the practice guide from those with EC STEM expertise
- Examples from Irish Practice - network members happy to contribute -less conceptual and more relatable examples
- Herb Ginsburg (Math)
- Camilla Bjorklund (Math)
- Lorna Arnott (Technology)
- Marilyn Fleer (Science/ STEM)
- Liz Wood (Intentional teaching and the role of EC in supporting children's concept development)
- Helen Hedges (Intentional teaching, concept development, working theories)
- Liz Chesworth (funds of knowledge)
- Chip Donohoe (technology)

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