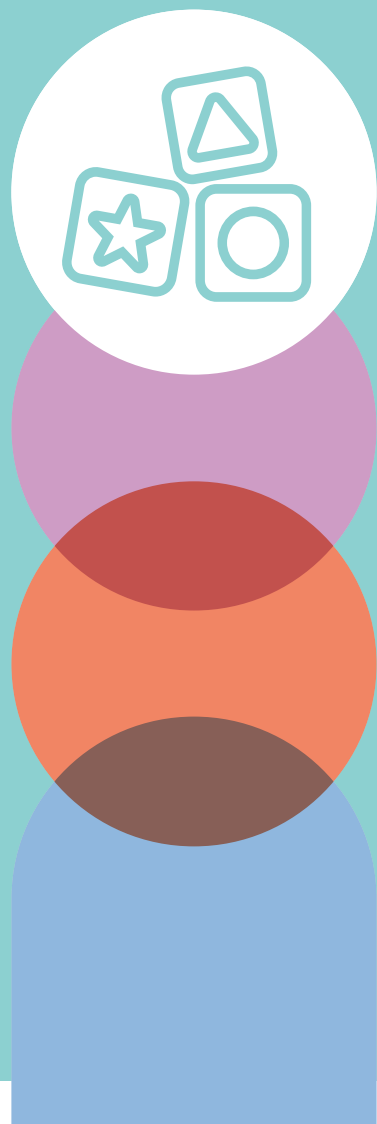
PART 4

Play and pedagogy

Young children have opportunities for play and pedagogy in digital contexts. Play and pedagogy involves children and educators using a range of digital devices for exploration, meaning-making, collaboration and problem-solving. Educators engage in active decision-making about the use and non-use of digital technologies for learning.

The guiding principle for Play and pedagogy is: Play and pedagogy promotes young children's exploration, social interaction, collaboration and learning in digital contexts.



4.1 Digital play

Play is an established part of early childhood education. Educators understand that children's play provides opportunities for children to explore ideas, experiment with materials and engage with other people for learning (Arnott, 2023). Both indoor and outdoor play are important for young children's learning and development. Through play, children build language, engage in social interactions, develop concepts about the world, and experience physical and cognitive challenges. Educators engage with children during play using strategies such as modelling, questioning, demonstrating and discussing to build their knowledge, skills and capabilities (Grieshaber et al., 2021).

Digital play involves children in many combinations of activities using non-digital and digital resources, either by themselves or in collaboration with others. For example, children may create and share digital content using apps, make their own videos or explore the physical world using digital microscopes. Digital play can also foster opportunities for physical activity, such as children using digital timekeepers in running races or obstacle courses, accessing apps for physically active games and downloading music for singing and dancing. Digital play also includes children's interactions with AI embedded in toys, games, apps or personalised learning systems.

Sometimes young children are described as 'digital natives' with a natural ability to use digital technologies. However, research suggests digital learning is a social process (Mertala et al., 2024). Children learn to use digital technologies in the same way they learn in other areas of the curriculum, such as language and literacy, science and mathematics. Exploratory play, observations of adults using digital technologies, and interactions with peers and educators help build children's knowledge and expertise in using digital technologies (Undheim, 2022).

Exploratory play is how children learn the properties of materials. When using traditional materials, this is how children become familiar with the texture, function, surface and colour of resources such as paint, paper, clay, sand, markers and glue. In digital contexts, exploratory play involves children becoming familiar with how the different functions of digital technologies operate (Leung et al., 2020). For example, video and audio recording; taking digital photographs; storing, retrieving and sending data; 2D and 3D printing; interacting with social robots; and co-creating prompts for AI with educators. When children repeatedly press buttons, engage with voice-activated devices or repeat their interactions with robots, they are engaging in exploration that helps them learn how digital technologies operate. For example, it is difficult for a child to create a digital film when they have not yet learned how to start and stop the 'record' button. Shared attention, modelling and scaffolding between children and educators when using digital technologies is important in this learning (Chu et al., 2024).

In early childhood settings, children also learn to use digital technologies by playing with objects that represent digital technologies, such as blocks used as pretend phones or cardboard boxes made into touchscreen tablets (Vogt & Hollenstein, 2021). Educators can use multiple materials for this type of play. Some may be purpose-designed pretend digital technologies. Often children will use simpler materials, creating their own devices from blocks, paper, cardboard, or even using their hands as pretend devices. Educators may observe children using their pretend devices to send a text message to a friend, search for information online or watch digital content (Delfin & Wang, 2023). Educators can join in this play by responding to children's messages, asking about their information searches or co-viewing children's pretend content. Pretend digital play builds opportunities for children and educators to understand the social uses of digital technologies (Bird, 2020) and can provide an important context for discussing and modelling online safety (Edwards et al., 2025).

4.2 Digital technologies in play and learning

Young children engage with a range of technologies, such as touchscreens, voice activation technologies and digital toys. These technologies are accessed by children through hands-on interactions, visual icons and audio input and output (Wang et al., 2022; Arnott & Yelland, 2021). Children's interactions with objects and people in their world influence how their brains develop and what they learn. It is not yet clear from research evidence if high levels of screen use influences children's brain development (Hutton et al., 2020), thinking (Mallawaarachchi et al., 2022; Lakicevic et al., 2025; Kracht et al., 2023) and language learning (Mallawaarachchi et al., 2022; Gath et al., 2025). Some adults are concerned that exposure to electromagnetic fields when using digital technologies can impact children's brain development. However, the available evidence does not support this concern (Bodewein, 2022). Meanwhile, the current advice suggests that screen use by children aged two years and under should be minimal. For children aged two to five years, the *Australian 24-Hour Movement Guidelines for the Early Years* suggests a limit of one hour of sedentary screen time per day (Australian Government Department of Health, Disability and Ageing, 2017). Children require a balance of activities throughout the day, including opportunities for fine motor and gross motor physical activity (Whiting et al., 2021) and social interactions with peers, older children and adults (Undheim, 2022). Educators can make informed judgements about how, when and why young children use digital technologies for play and learning.

Preschool-aged children in early childhood education and care settings can benefit from touchscreen technologies that involve careful use of apps. Apps have various levels of quality and educational design. Educators can consider how different apps meet the play interests of children in their classrooms or create new opportunities for children to mix and match multiple modes of communication, such as video, audio, images and text. This is important for sustaining the quality of children's in-app digital play (Oakley et al., 2018). Quality apps and digital content can support learning through well-structured narratives and activities that promote problem-solving and reasoning (Meyer et al., 2021). Appropriate apps and digital content for children should be pro-social, non-violent, promote gender and cultural diversity, and have very little advertising (Colliver et al., 2020). Content that is too fast-paced for young children can negatively influence executive function (Swider-Cios et al., 2023).

'Educators can make informed judgements about how, when and why young children use digital technologies for play and learning.'

Young children's learning using digital technologies can be maximised by adults through joint engagement (Archer et al., 2021). Joint engagement involves children, peers and adults participating in digital activities together, for example, playing with internet-connected toys or robots, interacting with an app, co-viewing media or playing games. When children participate in joint engagement they can ask questions, put forward ideas and receive feedback from adults and other children in relation to a shared activity. This helps build opportunities for language development, fosters collaborative learning and helps children develop digital skills (Scott et al., 2023). Joint engagement reminds educators that young children do not just use technologies to consume digital content or play games. Young children also use digital technologies in collaboration with adults at home, in the community, and in their services to participate in daily activities such as ordering food or shopping online, contacting family and friends, or signing in and out of their educational setting. Through joint engagement, adults can help children transition between using and not using technologies, for example when enjoying digital content, noting that an episode is nearly finished, and that the next activity will involve preparing a meal or playing outside.

Beyond touchscreens, voice-activated devices and digital toys, the range of digital technologies used by young children is extensive. Research shows that young children use desktop and laptop computers, game consoles, augmented and virtual reality, robots, 3D printers, coding toys, wearables and AI (Kewalramani et al., 2021; Scott et al., 2023). Children themselves describe digital technology use in active terms, using words such as 'learn', 'make', 'build', 'paint', 'write', 'watch' and 'feel' to explain what they do with them (Mertala, 2016). This active positioning connects with the idea that digital play in early childhood provides children with opportunities to explore and experiment with digital technologies. For example, children and educators might take apart and reassemble discarded technologies to see how they operate. Children can enjoy recreating their own technologies using combinations of traditional materials and parts from non-working technologies (Li et al., 2024). Programmable robots are often used by children and educators as hands-on digital technology experiences. Children can touch and observe this technology responding to the coding they create. When the robot responds to the coding in an unexpected way, an educator and child can problem-solve together—why does the robot appear to be turning the wrong way? This promotes computational thinking, which involves identifying problems, and proposing and testing solutions to those problems (Su et al., 2023).

Augmented reality introduces digital content or images into the classroom or playground environment using a handheld touchscreen or wall screen. In early childhood education and care settings, augmented reality can provide engaging learning experiences for children beyond the classroom, such as interacting with digital dinosaurs, experiencing planets or geographical locations from around the world. Educators can combine hands-on materials with augmented reality for rich play experiences with children (Berson & Berson, 2023).

Digital media enjoyed by young children, including popular culture through television programs or on-demand apps, movies, games or online content, can inform complex play narratives enacted by children (Petterson & Ehret, 2024). These narratives may involve children in high-level physical activity, such as running, climbing, chasing, jumping and leaping when playing superheroes. Digital media also provides opportunities for children to create their own play resources, such as 2D or 3D print-outs of popular-culture characters, drawing, photographing or painting background landscapes, designing and fashioning costumes, or digitally recording themselves in-character. These opportunities help build children's media literacy through content creation, meaning making, and sharing and communicating their ideas with other people (Pires Pereira et al., 2023).

4.3 Digital pedagogy

A hallmark of being an early childhood educator is the capacity to make informed decisions that are in the best interests of young children. Early childhood educators are equipped with professional knowledge about how young children play, learn and develop. Educators understand the importance of social engagement and building strong relationships with children. They can apply this knowledge and understanding to provide play opportunities and experiences that support children in the achievement of Learning Outcomes aligned with the EYLF 2.0, including having a strong sense of identity; being connected with and contributing to their world; having a strong sense of wellbeing; being confident and involved learners; and effective communicators (AGDE, 2022). When educators support children in these Learning Outcomes, they make pedagogical decisions about how and why children engage in different play experiences.

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Digital pedagogy involves active decision-making by educators about using digital technologies with, by and for young children. For example, it is important that young children have opportunities to experience outdoor play without digital technologies. It is also appropriate that children engage in experiences such as painting, drawing, storytelling, book-reading, singing, dancing or sharing cultural activities without using digital technologies. Time spent without technologies is valuable for children and their adults. At other times, educators might decide to use digital technologies with children because they can help children to develop and communicate an idea, access information required to progress play, develop an inquiry-based project or explore how AI works.

Decision-making about digital technology use in early childhood settings promotes inclusion for all children (Rizk & Hillier, 2022). For example, children with social or language delay can benefit from engaging with social robots (Syriopoulou-Delli & GkioInta, 2020), while translation apps in digital books can support children from culturally and linguistically diverse backgrounds to participate in shared play activities and build peer relationships (Nilsen, 2024). Culturally responsive digital technology use can maximise digital learning opportunities for Aboriginal and Torres Strait Islander children, families and communities (Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2024).

Play and pedagogy

Principle: Play and pedagogy promotes young children's exploration, social interaction, collaboration and learning in digital contexts

Practice advice:

01 Provide opportunities for children to explore and experiment with a diverse range of digital technologies alongside adult modelling, questioning, demonstrating and discussion of digital technology use.

02 Promote play involving children in digital technology use with combinations of non-digital and digital materials to build knowledge about the safe use of technologies for communicating and collaborating with other people, and generating, seeking, evaluating and sharing information.

03 Invite and listen to young children's perspectives about the role and use of digital technologies and media in their own lives, play and learning.

04 Recognise children's digital and media interests as a provocation for intentional learning experiences and an opportunity for connection between peers.

05 Engage in deliberate decision-making regarding digital technology use with, by and for young children that recognises opportunities for inclusion and promotes equity and access to digital learning.