

An All-Inclusive Teaching & Learning Framework for Integrating Robotic Play

Steps	Activity / Action
Planning	<ul style="list-style-type: none">• Co-design activities and provocations based on reflective conversations with children's existing schemes (strengths and interests)• Introduce the robots intentionally via play-based demonstrations and allow children to tinker with them freely, but safely.
Emotional Scaffolding through posing problem-based scenarios	<ul style="list-style-type: none">• Through story-telling and empathy-based situations, scaffold children and engage in inquiry-based conversations.• Encourage children to use verbal communication skills to share their ideas. Example, of inquiry starters can be about picking up a problem-based situation using the robot as the central character
Building children's inquiry skills	<ul style="list-style-type: none">• Allow 'wait-think-share' time for children to brainstorm with their peers on how to solve the posed problem.• Generate a social-emotional learning environment where the robot is the central theme in the children's stories.• Support the children to program/code the stories and tasks for the robot to perform or act out/role play.• Enable time for children's understanding of social cues such as turn taking while speaking, and regulating behaviour while communicating with their peers.• Continue the free-flow of children's inquiry using open-ended questioning techniques• Let the children think out loud while proposing solutions to save the robot.

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<p>Adult-child, peer-peer and child-robot interactions</p>	<ul style="list-style-type: none"> • Within the reciprocal and multi-interactions between the adult, children, and the robot (remember the robot can also talk, move, act, smile, laugh etc..). • Consider children's construction of artefacts and drawings as a measure for children developing social emotional skills.
<p>Sharing of children's ideas and representations emerging from robotics play</p>	<ul style="list-style-type: none"> • Allow time for whole-group discussions and children's presentations of their constructed artefacts and drawings.

