

1. Using mathematical concepts and processes

<p>Structured use</p> <ul style="list-style-type: none"> • The task requires a single outcome and usually only one way is accepted to achieve it • The teacher has structured the task for learner to use and practice a particular process or concept • The children complete the task requirement(s) and do not deviate from set goal(s). • Children are not challenged to go beyond the single outcome or level achieved • Traditional media used (pencil, paper) 	<p>Open-ended use</p> <ul style="list-style-type: none"> • The task allows for problem solving and problem posing opportunities in open ended investigations • The children share strategies and have input into the direction of their learning • Children are motivated and inspired to investigate and trial ideas • There are opportunities for the children to experience challenges • The children and teacher integrate various media, including ICT
--	---

2. Applying mathematical knowledge

<p>Focused application</p> <ul style="list-style-type: none"> • Specific mathematical concepts and processes are introduced via structured tasks • The application/ use is not integrated with other knowledge • There are few connections made between the task and the children’s prior understandings 	<p>Extended application</p> <ul style="list-style-type: none"> • A range of mathematical concepts and processes are applied by the children • Application of knowledge is integrated • Connections are made and encouraged between the task and the children’s prior understandings • The children use their own initiative and draw on a broad range of knowledge and processes to complete the task
--	--

3. Opportunities for exploration

<p>Minimal opportunities</p> <ul style="list-style-type: none"> • Children are mostly taught in large groups (whole class instruction) • The task is mostly teacher directed and completed individually • The children are encouraged not to deviate from predetermined instructional plan • Children respond with yes/no answers or closed/ fixed answers • The child mainly learns process/ concept in isolation • The children may not show interest in the task if the concept is already known and the solution is mechanical application of skill 	<p>Multiple opportunities</p> <ul style="list-style-type: none"> • Children have ample time in large and small groups and on their own to conceptualize, plan and reflect • The children engage and lead discussion about their learning • Tasks are initiated and/or extended by the child • The structure of the session is flexible • Children can approach the task in different ways • The children can learn additional and complementary processes and mathematical concepts in task solution • Collaborative and cooperative learning is encouraged • The children find the task meaningful and are interested
--	---

4. Learning outcomes

<p>Limited learning outcome(s)</p> <ul style="list-style-type: none"> • The children’s work looks the same • The learning processes are specific to the task • There are right and wrong answers and particular processes to follow • Opportunity to use initiative is limited • The children’s own interpretations and learning extensions are not recognized as valid • Communication of findings is not valued as a learning outcome 	<p>Varied learning outcomes</p> <ul style="list-style-type: none"> • The children choose different media to represent and communicate their ideas and knowledge • The children’s learning processes are varied • There are multiple solutions and outcome levels • The children develop confidence in their own learning initiatives • The children’s additional learning is recognized as valid or important • The children communicate their findings to others
--	--

Figure 14.1 Mathematical Tasks Continuum

