Cambourne's Conditions of Learning

Saturation in the knowledge/skill to be learned.

Multiple opportunities to witness actions/artifacts/models of knowledge/skill to be learned.

Expectations of those to whom learners are bonded are powerful coercers of learners' behaviors. "We achieve what we expect to achieve; we fail if we expect to fail; we are more likely to engage with demonstrations of those whom we regard as significant and who hold high expectations for us.

Learners need to be able to make their own decisions about what they'll engage with and/or ignore.

Learners need time and opportunity to use, employ, and practice their developing control in functional, realistic, and non-artificial ways.

Freedom to take risk and "make mistakes" is essential if effective learning is to occur.

Learners must receive feedback from exchanges with more knowledgeable others. Response must be relevant, appropriate, timely, readily available, and non-threatening.

Immersion

Demonstration

Expectation

Responsibility

Use

Approximation

Response

Engagement occurs when the learner is convinced that:
1. I am a potential doer of this skill or knowledge
2. Engaging with these demonstrations will further the purposes of my life
3. I can engage and try to emulate without fear of physical or psychological harm if my attempt is not "correct"

Adapted From:
- https://www.facebook.com/CambourneSConditionsOfLearning/
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Learners need time, opportunity to use/employ evolving skill/knowledge

Learners need feedback from the knowledgeable others

Multiple opportunities to witness actions/artifacts/models of knowledge/skill to be learned

Learners achieve what they expect to achieve

Saturation in the knowledge/skill to be learned

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Learners need to be able to make their own decisions about what they’ll engage with and/or ignore
<table>
<thead>
<tr>
<th><strong>THINK:</strong></th>
<th><strong>DO:</strong></th>
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| **NOTICE** | What my child/student noticing?  
What am I noticing?  
What is math-y about this?  
How many?  
Same or different?  
Which one doesn’t belong? |  
• Make note of what the learner is noticing  
• Make note of what you notice  
• Consider size, capacity, quantity, shape, position, proximity…  
• Consider patterns and relationships |
| **ENGAGE** | Do I notice an attempt to count, quantify, estimate, compare, sort, measure, order, describe shape, solve, reason, justify …?  
What am I curious about? What do I want to hear more about? What doesn’t yet make sense to me?  
Does the child/learner want to talk/think more about this? |  
• Invite ideas and perspectives  
• Accept approximations!  
• Respond in a way that encourages more of the above  
• Be curious  
• Position yourself as a mathematical playmate  
• Allow the learner to choose when/how to engage  
• Emphasize idea-sharing over “answer-getting” |
| **PROMPT** | What can be counted?  
What can be quantified?  
What can be measured?  
What can be compared?  
What can be sorted or ordered?  
What patterns/relationships are visible? |  
• Keep prompts open-ended and/or open-middle  
• Aim for routine and replicable  
• Create time for talking and listening  
• Create space for reasoning and justification  
• Emphasize idea-sharing over “answer-getting”  

**PLAY!**

Try…
• How Many?  
• Which one doesn’t belong?  
• Same or different?  
• Find quantities, sizes, shapes…  
• Explore position, proximity…

@mathanywhere