

Learning Experiences			
Inquiry phases	Design Thinking	Suggested teaching and learning experiences	Assessment
Open	Empathize	<ol style="list-style-type: none"> <li>Learning Hook – Where do we learn best away from school? Do: Individual mind map – stimulate prior knowledge Do: Visible Thinking: Y chart – preferred learning environment sounds, looks, feels - Use post-it notes so they can be used later</li> <li>Introduce essential question - Are our school learning environments conducive to learning? Do: Visible Thinking: Y chart – preferred learning environment sounds, looks, feels - Use post it notes so they can be used later</li> <li>Compare different learning environments Do: Venn diagram using post its from previous activities</li> </ol>	<p>Brainstorming mind map in inquiry journal</p> <p>Photo/copy of Venn diagram to be included in inquiry journals</p>
Immerse		<ol style="list-style-type: none"> <li>How can we use STEM skills to find out the answer? Do: Think, Puzzle, Explore Whole class – What do you think you know? Small groups – What puzzles you? Discuss as group and choose most interesting to record on blank 'puzzle' pieces to come back to later in the inquiry. Small groups – How can we explore these puzzles? Whole class discussion (take note of ideas).</li> <li>Prompt statement - We can use Science and Maths to observe and describe our learning environments Do: <a href="#">Question Formulation Technique</a> – Produce, Improve, Prioritize only Produce – form as many questions as possible Improve – ensure they are all questions. Label as Open or Closed. Change each to be the opposite (so left with open and closed versions of each question). Individual students Prioritize and choose 3 questions for possible further exploration.</li> <li>Analysing existing data Do: Look at the <a href="#">Bureau of Meteorology</a> website as example of an organisation that collects data on the weather. Do: Students take notes/make sketches in Inquiry journal. Ask probing questions, e.g. How do BOM collect and organise their data? What times of day? What tools? How often? What unit of measurement do they use?</li> <li>Zone of Intervention Do: Student Learning through Inquiry Measure Reflection 1</li> </ol>	<p>Record 3 chosen questions in journal (open and closed form)</p> <p>Notes about BOM site in inquiry journal</p> <p>SLIM Reflection Task 1 to be submitted to teacher (to guide teacher intervention)</p>

Explore		<p>8. Library Re-search - What are the optimal conditions for learning? Do: Generic Information Literacy – library and internet searching – bookmark useful sources</p> <p>9. <a href="#">5W's Website evaluation</a> task of various '<a href="#">Scientific sites</a>' about research on temperature and learning Do: students given websites to evaluate. They must record evaluation of an example of good and less desirable source from the list.</p>	Record 5Ws evaluation of two source in journal – one good, one bad
Identify		<p>10. Re-search findings Do: Students choose how they would like to present their findings. Allow students to share findings with each other. How were they similar? What differences were there?</p> <p>10. Revisit Question Formulation Technique. Do: Students Re-prioritise questions (if necessary) and move to Next steps: putting questions into action.</p> <p>11. Mapping current understandings Do: <a href="#">Generate-Sort-Connect-Elaborate Concept Map</a> that organises prior knowledge and new knowledge to identify connections. Generate – list of words, ideas, aspects, etc. Sort – central ideas near centre and other ideas to outside Connect – Draw lines between connected ideas – write connection on line Elaborate – Pick a few central ideas and elaborate on them; create subcategories that break ideas into parts</p>	<p>Photo of presentation/method for journal</p> <p>Students to complete concept map in journal</p>
Gather	Define, Ideate	<p>12. Science Experiment – collecting data about learning environments (focus on light, sound or temperature) (Conducted over a one or two week period) Do: Collect data using tools such as: <a href="#">Light Meter (Android)</a> (scale reading required) <a href="#">Lux Meter (Android)</a> <a href="#">Galactica Luxmeter (iOS)</a> <a href="#">Decibel Meter (iOS)</a> Do: Address Essential question: What would make our learning environments better?</p> <p>13. Student and Teacher Survey – quantitative research into students' and teachers' preferred learning environments. Addressing Essential question: What are the needs and preferences of all learners in the classroom? Do: Maths – Create, administer, analyse and present survey findings using online survey tool such as <a href="#">Survey monkey</a></p> <p>14. Further library research on chosen topics/questions Do: Students continue with addressing questions formed from earlier stages (student-led)</p> <p>15. Reflection Task Do: Student Learning through Inquiry Measure Reflection 2</p>	<p>Continue recording findings and new ideas in Inquiry journal.</p> <p><b>Summative Maths assessment</b> Survey design and results</p> <p><b>Summative Science assessment</b> – - Scientific report of experiment</p> <p><b>Summative Science and Design and Technologies assessment</b> – video explanation of how a circuit works (using Littlebits)</p> <p>SLIM Reflection Task 2 to be submitted to teacher</p>

		<p>16. Learning <a href="#">LittleBits</a> – explore Littlebits iPad app and Littlebits kits. Do: Create a short video/tutorial demonstrating how a circuit works using Littlebits (assessment) using an iPad app of choice. Share videos with peers. Make note of any questions. Do: make as many ‘working LittleBits’ creations as possible in a specified timeframe</p> <p>17. Introduction to Ideation addressing Essential question: What digital solutions can we design to improve our learning environments? Do: Students brainstorm as many ideas as possible using framework of ‘What if?’ Do: Visible thinking technique: Bodystorming – physically acting out situations</p>	
Create	Ideate, Prototype, Test	<p>18. Rapid Prototyping of digital solutions to improve learning environment. Do: Students make quick prototypes with Littlebits and test them through roleplays and storyboards Do: Instructions for using <a href="#">light sensor</a>, <a href="#">sound trigger</a> and <a href="#">temperature sensor</a> available on Littlebits website</p> <p>19. Shortlist design ideas Do: Ideas shortlisted through ‘Crowdstorm’ plus more ideas <a href="#">here</a></p> <p>20. Create final prototype of digital solution using Littlebits (student-led) Do: Take photo and annotate with labels explaining function, etc.</p> <p>21. Create presentation of learning journey through entire inquiry Do: Presentation guided by inquiry journal (student choice of method)</p>	<p><b>Summative Technologies assessment</b> - Create a working prototype of digital solution using Littlebits</p> <p>Inquiry journal – Labelled and annotated photo/diagram of prototype</p>
Share		<p>22. Pitch your Littlebits design Do: Students create criteria/rubric for judgement of success of pitch Do: Students create a ‘pitch’ (to principal and P and C?) to get the device put in classrooms to enhance learning environments Do: Self/Peer evaluation using student created rubric</p>	<p><b>Self Evaluation</b> of presentation using rubric included in inquiry journal</p>
Evaluate		<p>23. Guided Reflection on learning journey Do: Student Learning through Inquiry Measure (SLIM) Reflection Task 3</p>	<p>SLIM Tasks 1 and 2 returned to student. All three included in Inquiry Journal</p>