



## Breaking the cycle: Education – A project brief

#### "Exploration is the driving force behind mankind." - Kate Leeming

Welcome to the Breaking the Cycle: Education Project! We are excited to see you here. This project is inspired by and the brainchild of <u>Dr. Kate Leeming</u> who's a motivating adventurer. She has cycled the equivalent distance of twice around the world at the Equator; including the entire continent of Africa from West to East, Antarctica, and Siberia; released an amazing movie called <u>Njinga</u>; and, written a couple of books. She's all set to take on an awe-inspiring project of being the first person to cycle across Antarctica via the South Pole.

The Breaking the Cycle: Education project will bring together students from across the world to utilize Kate's journey as a source of innovation and creativity. Our goal is that the project will support students to lead their schools, communities, countries and the world in making change.

To help make the project a reality, Kate has formed a partnership with experiential education experts, JUMP! Foundation. JUMP! envisions a world in which young people are inspired, empowered and engaged through experiential education so that future generations are better equipped and motivated to contribute to a just and sustainable world.

We have developed two key modules - one focusing on upper primary and the other on lower secondary age groups. There are multiple focus areas such as Civics and Citizenship, Critical and Creative Thinking, Global Issues, and Designing for Innovation. The modules are highly flexible allowing for teachers and students to pick and choose elements that would work best for their classroom. There are opportunities for students to connect directly with Kate on her journeys via video calling. The United Nations Global Goals for Sustainable Development are embedded in the program enabling all students to be inventors, innovators, and campaigners. The students will be challenged to create projects that address key global issues around them and put into action their classroom explorations of following the expedition.



Breaking the Cycle - Education project is about taking action and inspiring others – leaders and change makers, of this generation and the next – to explore and find their passion and to aim high to achieve it. The project will serve to build on Kate's commitment to contribute towards ending extreme poverty and education for all.





# Breaking the cycle using Design Thinking

Un	nit Name:	Design your Thinking to change the world inspired by Dr Kate	Year Level:	YEAR 8 OR 9
		Leeming		
De	eveloped By:	Aditi Agrawal @ JUMP! Foundation	Time Frame:	8-10 WEEKS

#### **Context:** Why are we doing this?

The Breaking the Cycle Education project will bring together students from across the world to utilize Kate's journey as a source of innovation and creativity. Our goal is that the project will support students to lead their schools, communities, countries and the world in making change. The unit hopes to inculcate a can-do attitude in students following from Kate's stories of resilience and grit. The unit will allow educators and students to pose real life questions, working together to generate scenarios and calls to actions that can change the world.

#### **STAGE 1: DESIRED RESULTS**

**Transfer:** What are the long-term accomplishments that students should be able to do with knowledge and skill, on their own?

To engage students in real-world projects, which gives them the opportunity to develop key skills such as critical thinking, self-directed learning, creativity, problem solving, communication and collaboration using Design Thinking frameworks and inspired from Kate Leeming's Journeys.

Key Understandings: Students will understand that	Essential Questions:	Cross Curricular Bridges
<ul><li>U1. Grit, planning, and resilience can go a long way towards achieving our goals by feeling inspired from Kate's journeys.</li><li>U2. Design thinking is a useful framework to create change for global issues and achieve our Global Goals</li></ul>	EQ1. Who is Kate Leeming? Why do we need to know about her? What can we learn from her journeys? EQ2. What is Design Thinking? How can we use the DT process to move the world forward? EQ3. What are the Global Goals? What can we do to help?	<ul> <li>Sustainability</li> <li>Design Thinking</li> <li>Exploration</li> </ul>
Knowledge: Students will know	Skills: Students will be able to	Global Citizenship Lens:
K1. the different parts of the design thinking process K2. the components of Kate's journey	<ul> <li>S1. work together in groups and develop projects that solve a problem in their life/communities</li> <li>S2. use design thinking tools</li> <li>S3. talk about Kate Leeming and her journeys</li> </ul>	<ul> <li>Personal Growth &amp; Identity</li> <li>Inquiry &amp; Action Mindset</li> <li>Community Impact &amp; Social Enterprise</li> </ul>





What sequence of teaching and learning experiences will equip students to engage with and develop their understanding of the unit?

BLOCK 1: Introduction to unit & Kate	BLOCK 1: Introduction to unit & Kate Leeming					
-	INTENTION: Students get introduced to Dr Kate Leeming and her exploration of the world. GUIDING QUESTIONS: Who is Kate Leeming? Why do we need to know about her? What can we learn from her?					
ACTIVITY	TIME	PURPOSE/STRUCTURE	MATERIALS REQUIRED			
Introduction	5	Students are introduced to the purpose of the unit				
Kate Leeming Presentation - Overall story	45	Students watch Dr Kate Leeming introduce herself and her presentation (Teachers can reach out to Dr Kate Leeming to request for a school presentation for their class using the <u>Breaking the cycle: education website</u> )	Kate Leeming Introduction Video and Powerpoint (http://www.breakingthecycl e.education/resources/)			
Debrief on Kate Leeming	15	<ul> <li>Use sticky notes to get students to write a bit about what did they feel/think as they watched Kate in action.</li> <li>Take 4 sticky notes and write down answers for these questions (<i>suggested – teachers can modify them</i>) <ul> <li>What surprised you?</li> <li>What are you curious about?</li> <li>Why do you think she wants to explore or go on these adventures?</li> <li>What drives us to explore? What does she inspire you to do?</li> </ul> </li> <li>(Students can share a list of these questions and answers on Breaking the cycle: education website)</li> </ul>	Sticky Notes Pens			
Closing	5	Next week we will be focusing on thinking of what we feel passionate about and what inspires us!				





## **BLOCK 2: Global Goals and Issues exploration**

TIME: 90 Mins

**INTENTION:** Exploration of challenges and perspectives in the community. This exploration of the community challenges will set up students to learn about community needs.

GUIDING QUESTIONS: What are the Global Goals? Why do they matter? What are some issues I care about?

ACTIVITY	ТІМЕ	PURPOSE/STRUCTURE	MATERIALS REQUIRED
Global Issues Sticky Storm and Intro Video to Global Goals	15	<ul> <li>Pass out sticky notes and have each student jot down current world issues (one on each sticky note). After they've come up with some, have them place sticky notes on the whiteboard/flipchart.</li> <li>Debrief: <ul> <li>How was that experience for you?</li> <li>Easy or difficult?</li> <li>What global issues did you come up with?</li> </ul> </li> <li>We are going to learn a bit more about the Global Goals through an introductory animation/video. Watch the World's Largest Lesson Global Goals intro video <ul> <li>https://vimeo.com/138852758</li> </ul> </li> <li>Debrief on the main goals of the Global Goals (protect the planet, fight inequality, and end extreme poverty)</li> </ul>	Sticky Notes Markers Flipchart Intro Video to Global Goals (https://vimeo.com/1388527 58)
Global Goals Priority Diamond	20	Spread out print outs of global goals and split students into small groups. Tell each group that they must now prioritize and arrange the goals in a diamond shape ranking them on their importance. Participants should end up realizing how interconnected the goals are and that all goals are important.	Print of Global Goals ( <u>Download Global Goals</u> <u>from here</u> )
Sticky Storm on Community Issues	15	<ul> <li>All participants spend some time reflecting on community issues that they feel passionate about, especially the ones around the school and/or the neighbourhood →</li> <li>Tell participants to write down these issues on post-its (they can write multiple per post it)</li> <li>Allow for 3 mins</li> <li>Put all the post its together on a flip chart and allow for 5 minutes for students to broadly read all the post its</li> </ul>	Sticky Notes Markers Flipchart





		<ul> <li>Now ask students to pick up "1" issue that they feel most passionately about</li> </ul>
1-2-4 Group Share	35	<ul> <li>This will enable students to pick the top issues that they care about as a group →</li> <li>Students are starting with their issue from the sticky storm. The number represents the number of people who are writing down and sharing the community issues</li> <li>Invite the participants to find a partner and share their community challenges. <ul> <li>Allow 3 minutes for discussion</li> <li>Choose between the two issues or find a way to combine them</li> <li>The pair is left with one issue again</li> </ul> </li> <li>Now invite all the pairs to find another pair to form a group of 4 people, share their community challenges <ul> <li>Allow 5 minutes for discussion</li> <li>Again narrow down to one issue</li> </ul> </li> <li>Write have each group write down the issues that they have decided on A4 paper. One issue per paper. Include descriptions so others know what the issue is about. Students should think about how this issue relates to a global goal</li> <li>Share have each group go around and share their #1 issue (<i>All students can make a big map of issues to share them with other schools participating in the Breaking the cycle: Education</i>)</li> </ul>
Project Group Formation	10	Now based on the key issues that have been discussed - ask students to go to the issues that they most care about. In any team allow for maximum 4 people, if there are 5 people ask to split into two groups of threes.





BLOCK 3: Exploring and Introduction	BLOCK 3: Exploring and Introduction to Design Thinking				
<b>INTENTION:</b> To help the new teams adopt a designer's mindset and practice the entire design process as they complete their first design challenge. This is also a good way to practice presenting and giving and receiving project feedback. GUIDING QUESTIONS: What is Design Thinking? Why and how is it human centred?					
ACTIVITY	CTIVITY TIME PURPOSE/STRUCTURE				
Intro to Human-Centred Design	10	<ul> <li>Purpose: Expose participants to the Human-Centred Design framework in order to prepare them for the Wallet Design activity</li> <li>1. Show introduction video</li> <li>2. Explain the Human-Centred Design Framework</li> <li>3. Tell participants we will now do an exercise that takes them through a process</li> </ul>	https://www.youtube.com/w atch?v=a7sEoEvT8l8 Flipchart with the Design Thinking Process steps		
Wallet Design Project	80	Purpose: Experience the design process quickly and recognize the importance for talking to the people who are affected by the problem and who we are designing for collaborators. The Wallet Project is an immersive activity meant to give participants a full cycle through the design thinking process in as short a time as possible. The project itself gives teachers the opportunity to touch on the fundamental values of the design thinking —human-centred, a bias towards action, and a culture of iteration and rapid prototyping—without attempting to communicate all of the methods and activities that the term "design thinking" encompasses. Follow Facilitation Guide and print out copies of Participant Guide for each of the students	Facilitator Guide (1) Participant Guide (1 for each student)		
Reflect back to Kate Leeming's adventures	30	As an explorer, can you think about how Kate would be designing her adventure of cycling across Antarctica? In pairs of 2, can you brainstorm about the challenges that she'd need to solve for? Examples - food, bicycle design, funds for the project, etc. What questions do you still have? Make a list as a class and get them to Dr Kate for her inputs and ideas! (Students can share the list on <u>Breaking the cycle: education website</u> and ask for Dr Kate to respond to some of the big ones!)	Flipcharts Markers		





## **BLOCK 4: Design Thinking - Empathise**

TIME: 150 Mins

**INTENTION:** Participants will share challenges that they are working on and start to develop a deeper understanding of these problems with problem trees and stakeholder maps. In their projects groups around a problem, students will develop interview questions and work on strategies for their needs assessment. **GUIDING QUESTIONS:** How can we understand the roots of a problem? Who holds the power to affect a problem? How do we ask "good" questions? What can we learn from our community?

ACTIVITY	TIME	PURPOSE/STRUCTURE	MATERIALS REQUIRED
ACTIVITY Problem Tree	<b>TIME</b> 60	<ul> <li>Purpose: Begin exploring one problem in the community deeper, explore potential causes and consequences, discover what we don't know and assumptions that need to be tested.</li> <li>Step 1: Help students do this with a simple example. Begin at the centre of the tree with the problem.</li> <li>Problem: The issue that is being examined. Because it is not as obvious as the effects, the core problem sometimes takes longer to identify.</li> <li>Roots: Causes. Prompt exploration of causes by asking, "WHY does the problem exist?" Encourage participants to think about the "causes of</li> </ul>	Flipcharts Markers
		<ul> <li>causes" — the multiple layers of factors that contribute to a problem.</li> <li>Leaves: Consequences. As with causes, encourage participants to explore "consequences of consequences." At first, this part of the issue may seem easy to solve, but without addressing the root cause, only addressing the consequences is like trimming leaves and branches — they grow back quickly. Participants should always ask: "then what happens?" The more participants drill into the effects, the more they will deepen their critical thinking and analysis</li> <li>Step 2: After you have led students in a sample, ask them to take the next 20 minutes to create their own problem trees.</li> <li>Step 3: Do a big group share at the end, with each group receiving 3 minutes to share their trees.</li> </ul>	art-1- Activity_ProblemTree_May2 71.pdf





		(Students can take a photo with their problem trees and share them on <u>Breaking the</u> cycle: education website)	
Stakeholder Map	30	<ul> <li>Purpose: Teams consider who might be affected by their future community impact projects so they can prioritize who they need to talk to during the needs assessment.</li> <li>1. List stakeholders using these prompts: <ul> <li>a. Whom does this issue affect?</li> <li>b. Who is already working on this issue?</li> <li>c. Who has the ability to make decisions that could affect this issue?</li> <li>d. Who could help with this issue?</li> <li>e. Who is making it difficult to address this issue?</li> </ul> </li> <li>2. Create a map of these people by writing the challenge or issue in a circle in the center and draw lines out to each stakeholder to show how they are connected to the issue.</li> <li>3. Use a tool to prioritize which stakeholders are most important to contact - example an influence versus interest matrix</li> <li>4. This can this be used to decide who to talk during the design process</li> </ul> <li>Step 1: Help students do this with a simple example. Begin at the center of the problem.</li>	<section-header></section-header>
		<ul> <li>minutes to create their own stakeholder maps.</li> <li>Step 3: Do a big group share at the end, with each group receiving 3 minutes to share their maps.</li> <li>(Students can take a photo with their stakeholder maps and share them on Breaking the cycle: education website)</li> </ul>	
Interview Questions	30	Now that you know who to talk to, in the groups design questions that you can ask you stakeholders. This is the Empathy step in Design Thinking - "The whole project is based on the challenges the school/community faces, the needs assessment is a chance to explore the root causes of the challenges. If you find what you're really	None





		<ul> <li>interested in is changing as you conduct interviews and connect with community members that are OK. This means gaining insights and new information. This is design thinking."</li> <li>Step 1: Create a List of People (following from the Stakeholder Mapping - Choose two important stakeholders)</li> <li>Step 2: Make questions for each people identified - Think about these interview tips -</li> <li>Ask why and encourage stories</li> <li>Be specific- "Tell me about the last time you"</li> <li>Look for inconsistencies in their stories</li> <li>Pay attention to nonverbal cues</li> <li>Allow for silence</li> <li>Don't suggest answers to your questions</li> <li>Ask open and neutral questions</li> <li>Make question short</li> <li>Ask one question at a time</li> <li>Be prepared to record answers (ask for permission)</li> <li>Manage sensitive information</li> </ul>	
Interview Practice	30	<ul> <li>Teachers can introduce open and closed questions</li> <li>Ask students to do some role play activities in their groups so as to practice their interview skills</li> <li>Bad/Good Interview role play</li> <li>Ask open ended questions</li> <li>Ask closed questions</li> </ul>	None





TIME: Interview+ 90 Mins

## **BLOCK 5: Design Thinking - Empathise and Define**

**INTENTION:** Student groups will go out into their community to gather information about needs that affect the school community or their neighbourhood. The information gathered will be used to design problem statements and proposals for their impact projects.

GUIDING QUESTIONS: What can we learn from our communit	y? What is the problem that we need to solve? What is the	e difference between insights and observations?

ACTIVITY	ТІМЕ	PURPOSE/STRUCTURE	MATERIALS REQUIRED
Conduct Needs Assessment	As much time as groups need	Students go out in the school and interview key stakeholders - Remember to ask them to take notes, record conversations, and bring back their ideas and suggestions You can also ask students to do some of the interviews as homework if possible/required	Recorder ( <i>if needed</i> ) A4 paper Pens
Debrief in teams	10	Students organise their notes and get on the same page in their teams about the feedback they have received on the problem from all their different interviews	Flipcharts Markers
Introduction to Revising Problem Statement	20	Step 1: Moving from Observations to Insights – 6min 20 sec (https://www.coursera.org/learn/leadership-design- innovation/lecture/Yjlos/observations-to-insights) Step 2: Generating How Might We (HMW) Questions from Insights – 3 min 40 sec (https://www.coursera.org/learn/leadership-design- innovation/lecture/JMRYd/generating-how-might-we-hmw-questions-from-insights) Use Dr Kate Leeming as an example for how she might have redefined the problem based on her different expeditions. What would change?	Videos and Projector
Organize Learning from Needs Assessment	60	Students organize learning from their needs assessment day on a flip chart insights and HMW Questions ( <i>Teachers can share the big "How Might We" Questions on <u>Breaking the cycle:</u> <u>education website</u>)</i>	Flipcharts, Markers Resource for students - <u>http://crowdresearch.stanfor</u> <u>d.edu/w/img_auth.php/f/ff/H</u> <u>ow_might_we.pdf</u>





## **BLOCK 6: Design Thinking - Ideation**

TIME: 60 Mins

**INTENTION:** Teams begin to think about crazy ideas that might help solve their big, hairy problems. Encourage students to be create, innovative, and challenge the norms.

GUIDING QUESTIONS: How might we solve these big, hairy challenges? What gets our creativity flowing?

ACTIVITY	TIME	PURPOSE/STRUCTURE	MATERIALS REQUIRED
Yes, BUT vs. Yes, AND	15	<ul> <li>Enable students to start brainstorming without any boundaries!</li> <li>Have students form pairs or small groups (3-4) and tell them they are going to plan a trip to Antarctica (a trip, a party). The first round, every time someone proposes an idea, someone else should answer with "Yes, BUT(reason why that is not going to work)".</li> <li>On the second round, the response should be "Yes, AND (add something that builds on the first idea)".</li> <li>Debrief about the group energy and what kind of ideas came out in each round.</li> </ul>	None
Forced Connections	15	<ul> <li>This exercise involves bringing together ideas that serve very different needs or interests to form a new concept.</li> <li>Each person writes down 2 objects on 2 sticky notes, and put it in a bag. (Example - banana, pen, bottle, chair, etc.)</li> <li>In 5 minutes, ask team members to pick two items (Example: pen and bottle) and explore different ways they can be connected. (Example: A bottle should always come with a pen so that you can write your name on the bottle and declare that it's yours! This will prevent thefts.)</li> <li>This technique can produce some silly results, but it's ultimately a helpful way of getting your team out of a creative rut.</li> <li>(Teachers and students can share some funny forced connections on Breaking the cycle: education website)</li> </ul>	Sticky Notes Pens
Distribute 7	30	Help students think of creative and best ideas in their project teams. Give all students the prompt - How can we solve the big problems we are working on in our	Sticky Notes Pens





Refle How	<ul> <li>ps?</li> <li>1: Write down your 3+ best ideas on your own</li> <li>ection Questions: How will your ideas involve the whole school or community?</li> <li>will it address the needs of the users? How will you use your insights?</li> <li>2: In your groups</li> <li>First round: After reflecting, put all your ideas in the box and pick up someone else's idea</li> <li>Share that idea with a partner and together allot 7 points to the idea. Do another round. Add the points and arrange them in descending order on the ground</li> <li>Pick up another idea from the box and repeat Round 1</li> <li>After three rounds, take the top two points cards and discuss them in your group and finally, pick one idea that will solve the problem!</li> </ul>	
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BLOCK 7: Design Thinking ·	- Rapid Prototyping a	Ind Testing	TIME: 270 Mins	
INTENTION: Teams begin to refine their ideas into prototype solutions in a process of designing, presenting, getting feedback and redesigning GUIDING QUESTIONS: What do we need to change in our idea so as to make it better suited to the needs of our community? What feedback can our peers provide us?				
ACTIVITY	TIME	PURPOSE/STRUCTURE	MATERIALS REQUIRED	
Design Time	90	Purpose: To think through the idea through their idea using SMART. Specific: • What do I want to accomplish? • Why is this goal important? • Who is involved? • Where is it located? • Which resources or limits are involved? Measurable: • How much? • How many? • How will I know when it is accomplished? Achievable: • How can I accomplish this goal? • How realistic is the goal, based on other constraints, such as financial factors? Relevant: • Does this seem worthwhile? • Is this the right time? • Does this match our other efforts/needs? • Am I the right person to reach this goal? Timely: • When? • When? • When can I do six months from now? • What can I do six weeks from now? • What can I do today? Students then fill out -	Markers Flipcharts Pens	





		<ul> <li>Project Name:</li> <li>Team Members:</li> <li>Short summary of project:</li> <li>Needs:</li> <li>Project Objectives:</li> <li>Project Plan and Timeline:</li> <li>Budget:</li> </ul>	
Solicit Community Feedback	60	Each team contact their stakeholders again regarding their rough solution and revise their project based on feedback	Notebooks Pens
Re-Design Time	60	Students revise projects and consider possible solutions after the community has given input - Where do we need to focus our energy now? What needs to be done for a successful project? Encourage students to actually BUILD something that will help them showcase their idea to the community ( <i>Teachers can share student prototypes on Breaking the cycle: education website</i> )	Flipcharts Sticky Notes Markers
Marketplace	60	<ul> <li>Purpose: To provide participants with another opportunity to practice pitching their ideas to the community to improve their solution and presentation</li> <li>Groups set up "stalls" in the "marketplace." Each group has 2 people who stay at their station and tell others about their project. Everyone else walks around, visits different projects, ask questions, and give feedback.</li> <li>Halfway through, have 2 other people from each group to stay so that the 2 people who were staying in the group can now go around and look at different projects.</li> </ul>	Flipcharts Sticky Notes Markers





BLOCK 8: Design Thinking - Final Prototyping and Testing			TIME: 240 Mins		
INTENTION: Teams finalise their solutions and present it to the class GUIDING QUESTIONS: What have we learnt from the process? What feedback can our peers provide us?					
ACTIVITY	TIME	PURPOSE/STRUCTURE	MATERIALS REQUIRED		
Design Time	90	Final revisions to project plans and prototypes			
Presentations	120	Purpose: To share the prototype solutions with the community and pitch their projects to the panel. Each group will have 10 minutes to present their proposed solutions and there will be 10 minutes of questions from the audience ( <i>Teachers can video the presentations and share them on Breaking the cycle:</i> <i>education website</i> )			
Reflect on the Project	30	<ul> <li>Teachers are encouraged to use the tool of I like, I wish, I wonder with their students to have them reflect on the entire project. You can provide some of these questions as a starting point.</li> <li>What skills have we learnt from the design process?</li> <li>Did Dr Kate Leeming inspire us?</li> <li>What are we still curious about?</li> <li>What else can we do to learn more about Global Issues?</li> <li>What actions can we take?</li> </ul> (Teachers can share student reflections on Breaking the cycle: education website) I LIKE I WISH I WONDER	https://dschool- old.stanford.edu/wp- content/themes/dschool/me thod-cards/i-like-i-wish- what-if.pdf		