
GROWING A KNOWLEDGE BUILDING CULTURE

CULTURE AND CLIMATE

Knowledge Building is fundamentally a social and collaborative process. It requires the whole community to nurture a classroom culture that values wonderment, deep thinking, diverse ideas, inclusivity and equity, perseverance, honesty, and risk-taking. Knowledge Building thrives in a culture of **psychological safety** — a place where students feel that they can contribute their ideas and thoughts without judgment. Knowledge Building is not about getting at the right answer as quickly as possible, but about improving ideas and advancing collective knowledge on problems and questions of value to the community. Knowledge Building focuses on cultivating the types of habits of mind and practice that characterize creative experts and knowledge creating organizations, and engaging students in these processes in the classroom from the earliest Grade levels.

Climate and culture are key to creating a healthy and thriving Knowledge Building community in the classroom. Immersing students in a culture of authentic knowledge creation helps them to develop the capacities, skills, and knowledge they will need as 21st century citizens. It also gives students the opportunity to puzzle and problem solve through issues and ideas that they truly care about, to be connected to a dedicated community, and to flourish as individuals who are all unique, important, and valued contributors to a collective enterprise.

On the pages that follow, we point out the key cultural conditions and community norms that a Knowledge Building classroom needs in order to be successful. Specifically, we discuss the **12 Knowledge Building Principles, the Most Important Elements of a KB Classroom, The Teacher's Role**, as well as some fun **Collaborative Strategies and Practices** to help start building a vibrant KB community. In the end, we want to create a collective mindset and culture based on the belief that ...

WE'RE NOT GOOD UNTIL WE'RE ALL GOOD!



Knowledge Building Gallery / Leading Student Achievement: Networks for Learning

THE 12 KNOWLEDGE BUILDING PRINCIPLES: A FRAMEWORK FOR PRACTICE & CLASSROOM NORMS

The **12 KB principles** are the foundation of Knowledge Building pedagogy (Scardamalia, 2002). The principles describe the key characteristics of effective knowledge creating organizations, framed in a way that is directly applicable to the classroom. You can also think of them as **12 habits of highly creative teams**. Rather than dictate step-by-step procedures for teachers and students to follow, the principles are a framework to help guide and evaluate practice. Creative work with knowledge is a complex process, and so the principles represent flexible ideals that will manifest themselves in a great variety of ways in many different contexts. Indeed, in every highly creative team — be it a Nobel laureate lab, an innovative business, a team of designers, or a KB classroom — you will find these principles operating in one form or another.

 <p>Real Ideas, Authentic Problems Knowledge problems arise from efforts to understand the world. Ideas produced are as real as things touched and felt. Problems are the ones learners care about — usually very different from textbook problems and puzzles.</p>	 <p>Improvable Ideas All ideas are treated as improvable. Students work continuously to improve the quality, coherence and utility of ideas. This requires a culture of psychological safety so that people feel safe taking risks — revealing ignorance, voicing half-baked notions, giving and receiving criticism.</p>	 <p>Idea Diversity Just as biodiversity is crucial to the success of an ecosystem, so is idea diversity to knowledge advancement. To understand an idea is to understand the ideas that surround it — including those that stand in contrast to it.</p>
 <p>Epistemic Agency Students take responsibility for their ideas by determining the learning outcomes, processes, and the accompanying challenges. Students engage in negotiation and dialogue to fit personal ideas with others.</p>	 <p>Democratizing Knowledge The creation of knowledge is not confined to a few. Instead, all are empowered to create and are recognized as valid contributors to advance community knowledge.</p>	 <p>Pervasive Knowledge Building Knowledge Building is not confined to particular occasions or subjects but pervades mental life.</p>
 <p>Rise Above Creative Knowledge Building entails working towards higher-level forms of problems. It means learning to work with diversity, complexity, and messiness. By moving to higher planes of understanding, Knowledge Builders transcend oversimplifications.</p>	 <p>Symmetric Knowledge Advance Expertise is distributed within and between communities; community members understand that <i>“to give knowledge is to get knowledge.”</i></p>	 <p>Knowledge Building Discourse The power is in the discourse — in collaborative interchanges that lead to better solutions, better explanations, and better ways forward.</p>
 <p>Embedded, Concurrent & Transformative Assessment Assessment is part of the effort to advance knowledge — it is used to identify problems as the work proceeds and is embedded in the daily workings of the organization. The community engages in its own internal assessment, which is more fine-tuned and rigorous than external assessment, and serves to ensure that the community’s work will exceed the expectation of external assessors.</p>	 <p>Constructive Use of Authoritative Sources To know a discipline is to be in touch with the present state and growing edge of knowledge in the field. This requires respect and understanding of authoritative sources, combined with a critical stance toward them.</p>	 <p>Community Knowledge, Collective Responsibility Contributions to shared, top-level goals of the organization are prized and rewarded as much as individual achievements. Team members produce ideas of value to others and share responsibility for the overall advancement of knowledge in the community.</p>

Images from Knowledge Building Community. Introduction to Knowledge Building. Retrieved from: www.kbsingapore.org/12-principles-of-kb/

THE 12 KNOWLEDGE BUILDING PRINCIPLES: INDICATORS AND “LISTEN FORS”

KB Principle	What would I hear in the classroom that reflects this KB Principle?
Real Ideas, Authentic Problems	<p>“The real issue, I believe...”</p> <p>“What I’d REALLY like to know...”</p> <p>“Authentic from my point of view would be...”</p>
Improvable Ideas	<p>“Let’s design an experiment”</p> <p>“How does it work, REALLY?”</p> <p>“We used to think..., now we think...”</p>
Idea Diversity	<p>“I never realized there were so many ways to view this!”</p> <p>“That’s a new idea, I never thought of it that way”</p> <p>“Let’s try a different approach...”</p>
Epistemic Agency	<p>“I think we should take this in a different direction altogether,”</p> <p>“How does this address our problem? What’s our goal here?”</p> <p>“Let’s plan next steps now, so we can stay on course”</p>
Democratizing Knowledge	<p>“What can we do to get everyone involved?”</p> <p>“We seem to have lost the interest of several people”</p> <p>“Interesting idea — how can we help?”</p>
Pervasive Knowledge Building	<p>“In a movie I saw this cool demonstration — it worked like this”</p> <p>“I took a picture so I’ll remember”</p> <p>“I thought of this while I was walking in the park on the weekend”</p>
Rise Above	<p>“Let’s take this to a new level...”</p> <p>“How can we move beyond our current thinking?”</p> <p>“It can’t be that simple”</p> <p>“I bet we are missing something important here”</p>
Knowledge Building Discourse	<p>“This doesn’t explain how...”</p> <p>“We’re just grouping ideas together — what’s the big idea?”</p> <p>“That’s just a topic, what’s the real issue?”</p>
Symmetric Knowledge Advance	<p>“Another team discovered...”</p> <p>“What would those who disagree say?”</p> <p>“I’m willing to put this idea out there so others can help advance it”</p>
Embedded, Concurrent, & Transformative Assessment	<p>“Let’s look at our data and see how we’re doing”</p> <p>“We seem to be stuck. How much progress have we made?”</p> <p>“Good we caught this mistake early”</p> <p>“Our best insight so far...”</p> <p>“The idea that really needs work...”</p>
Constructive Use of Authoritative Sources	<p>“How would someone with more knowledge handle this?”</p> <p>“There seems to be agreement among experts that...”</p> <p>“How does this expert’s idea fit with ours?”</p> <p>“Here’s what someone who knows a lot says”</p>
Community Knowledge, Collective Responsibility	<p>“Our ideas don’t fit together”</p> <p>“We need everyone’s ideas on this”</p> <p>“How would you describe our current state of understanding?”</p> <p>“We’re all saying the same thing!”</p>

THE 12 KNOWLEDGE BUILDING PRINCIPLES: SOME GUIDING REFLECTION QUESTIONS

KB Principle	Some Guiding Reflection Questions
Real Ideas, Authentic Problems	<ul style="list-style-type: none"> • Is this a problem that's truly authentic & interesting to students? • What opportunities and activities can I design that can help bring out students natural curiosity and interest?
Improvable Ideas	<ul style="list-style-type: none"> • How can I start to build a culture of idea improvement with my students? (e.g., one of safety, equitable participation, critical friends, idea diversity, etc.) • How can I help students see the trajectory and development of their own ideas and their own learning?
Idea Diversity	<ul style="list-style-type: none"> • How can I support expression of idea diversity from students? • How can I display and make visible students' range of ideas?
Epistemic Agency	<ul style="list-style-type: none"> • How am I already supporting student voice and choice in my practice? • What are some small steps I can take to hand more and more agency over to students? What would represent a big leap? • Do I see growth in my students' capacity for taking on more and more high-level responsibility?
Democratizing Knowledge	<ul style="list-style-type: none"> • How can the classroom setup help facilitate flow of knowledge between students? • Which practices/tools help to ensure exposure and access to everyone's ideas? • Do students feel overly possessive over ideas or advancements? • How can we as a community begin to value group achievements and free exchange of ideas?
Pervasive Knowledge Building	<ul style="list-style-type: none"> • Am I hearing evidence that students are thinking about their ideas and questions outside of the classroom? • Are they making unexpected connections between their KB work with other areas of their lives? • Are parents seeing the engagement and excitement at home?
Rise Above	<ul style="list-style-type: none"> • What evidence do I have that students are arriving at more sophisticated formulations of problems/deeper understandings? • How well do my students understand the idea of Rise Above as a driver for KB?
Knowledge Building Discourse	<ul style="list-style-type: none"> • Are we moving beyond idea-sharing to idea building? • Are students using the KB Scaffolds? (see pgs. 42-44) • Are students given enough time for group discourse?
Symmetric Knowledge Advance	<ul style="list-style-type: none"> • Am I seeing knowledge growth in every student? • Are all students benefiting from community efforts? • Are students showing an appreciation for the notion that exchanging ideas and sharing knowledge will benefit us all?
Embedded, Concurrent, & Transformative Assessment	<ul style="list-style-type: none"> • What assessment tools do I already use that lend themselves to KB work? • What can I use or adapt from this resource? • How can I get my students more involved in self and group assessment during the KB process?
Constructive Use of Authoritative Sources	<ul style="list-style-type: none"> • What do my students (still) have to learn and know about approaching a source critically? • Are my students using authoritative sources as evidence to support or discount their own ideas?
Community Knowledge, Collective Responsibility	<ul style="list-style-type: none"> • What can I/we do to get everyone engaged? • Do we understand the difference between individual and collective knowledge? • Do I get a sense that students are feeling responsible for contributing and building group knowledge, not just their own?



“The KB Principles...convey the dynamics of these powerful communities that can advance knowledge for social good. So, they are components of a complex process, and the really good news is that any single one that you unlock helps to unlock the others. So it's not necessary to do 1, 2, 3, 4, 5, 6 ... any one of these that you start on opens the others for you. So why 12? There are components each one adds that is a bit different. Each one is a different facet — but, I would say focus on whichever one appeals to you.” — *Marlene Scardamalia*



**WHICH OF THE 12 KB PRINCIPLES RESONATE WITH YOU?
WHICH DO YOU ALREADY ENGAGE WITH IN YOUR PRACTICE?
WHICH REPRESENT NEW IDEAS?
HOW CAN YOU DEEPEN YOUR PRACTICE IN ACCORDANCE
WITH THE 12 KB PRINCIPLES?**

THE 12 KNOWLEDGE BUILDING PRINCIPLES: GROUP ACTIVITY



Try bringing the 12 KB Principles — or a smaller subset of the principles (say, 2 to 4) — to your students or to your colleagues in order to build a shared understanding as a community, and to help make the principles become classroom or school-wide norms. Below is one example of the kind of activity that you can do to introduce the KB Principles to your students or colleagues.

- Write each of the 12 principles on separate pieces of chart paper and hang them around the room or place them on tables (1-2 principles per table depending on what is available).
- At each table, include: i) a couple of markers; ii) a pack of sticky notes; iii) handout with description of the 12 principles (photocopy page 20 of this resource).
- Number students or colleagues off so that there are about 2-4 people per group. Assign each group a particular principle or set of principles.
- Each group reads the description(s) of the principle(s) they are assigned. Ask them to interpret the principle(s) (as students, as educators, etc.) and put it into their own words. Ask them to write a brief phrase or statement that summarizes their ideas.

FOR STUDENTS: Do a group share of the ideas generated. As a class, create a student-friendly version of the KB principles. Discussion questions could include: What would these KB Principles look and sound like in our class? When have we already seen this happening in our classroom? What are our next steps to make this happen in our class?”

FOR YOUNGER STUDENTS: Create an age-appropriate adaptation of the 12 principles, or a select sub-set of the principles. Bring these revised principles to the students and have a group discussion with students about their ideas and interpretations of the principles, and what they mean to the classroom community.

FOR COLLEAGUES: Participants think about the principle that resonates with them the most, and move to that principle. Next, ask them what that principle might look, feel and sound like in the classroom. What strategies and activities do they already practise that reflect this principle? Participants share their ideas on sticky notes and chart paper. Encourage thoughts on the question: *Are there ways to build upon or deepen these practices that are in alignment with the KB principles?* Write ideas on stickies and add to the chart paper. Share as a group.

- Participants think about the principle they still need to understand. They write questions and wonderings on sticky notes and place them on the chart paper. Share as a group.
- Revisit this activity once colleagues have had time to work with this resource and put some ideas into practice to see how thoughts and understandings about the principles have grown.

THE 12 KB PRINCIPLES AND INDICATORS

On the next page, the 12 Knowledge Building Principles are listed in the left column. The middle and right columns articulate two ends of a spectrum of practices corresponding to each principle. The right hand column indicates evidence of deep Knowledge Building practice.

KB Principle	Common Standards	Knowledge Building Value Added
Community Knowledge, Collective Responsibility	Participants collaborate on the production of a finished product that demonstrates individual or small-group learning.	Participants take responsibility for the overall advancement of knowledge in the community.
Constructive Uses of Authoritative Sources	Participants critically evaluate information sources and recognize that even the best are fallible.	Participants use authoritative sources, along with other information sources, as data for their own Knowledge Building and idea-improving processes.
Embedded, and Transformative Assessment	Externally defined assessment is taken seriously but does not dominate knowledge work.	The community engages in its own internal assessment, which is both more fine-tuned and rigorous than external assessment, and serves to ensure that the community's work will exceed the expectations of external assessors.
Democratizing Knowledge	Everyone's work is recognized and praised; participants help each other find needed information.	All participants are legitimate contributors to the shared goals; all have a sense of ownership of knowledge advances achieved by the group.
Epistemic Agency	Participants demonstrate a personal sense of direction, power, motivation, and responsibility.	Participants mobilize personal strengths to set forth their ideas and to negotiate a fit between personal ideas and ideas of others, using contrasts to spark and sustain knowledge advancement rather than depending on others to chart that course for them.
Idea Diversity	Different ideas or opinions are brainstormed, and then grouped into categories, and finally arguments are carried out to resolve differences.	Different ideas create a dynamic environment in which contrasts, competition, and complementarity of ideas is evident, creating a rich environment for ideas to evolve into new and more refined forms.
Improvable Ideas	Ideas are accepted or rejected on the basis of logical argument and evidence.	All ideas are treated as improvable; participants aim to mirror the work of great thinkers in gathering and weighing evidence, and ensuring that explanations cohere with all available evidence.
Pervasive Knowledge Building	Special time is set aside for creative work with ideas after basic work is done; special technologies and supports encourage creative work.	Creative work with ideas is integral to all knowledge work.
Real Ideas, Authentic Problems	Project-based learning replaces short-term tasks with more complex, ill-defined tasks.	Real knowledge problems arise from efforts to understand the world; creative work with ideas supports faster and more reliable learning, whereas learning alone seldom leads to knowledge innovation.
Rise Above	Teacher or leader takes responsibility for synthesizing diverse ideas, identifying common ground, and presenting new challenges.	The conditions to which people adapt change as a result of the successes of other people in the environment. Adapting means adapting to a progressive set of conditions that keeps raising standards.
Knowledge Building Discourse	Discourse allows participants to express and gain feedback on their ideas, defend different points of view, arrive at conclusions.	Discourse serves to identify shared problems and gaps in understanding and to advance understanding beyond the level of the most knowledgeable individual.
Symmetric Knowledge Advancement	Groups carry out inquiries independently and then publicize their findings for the benefit and response of other groups.	Interleaved communities provide successively more demanding contexts for knowledge work, and set into motion inner/outer community dynamics that serve to embed ideas in a broader social context.

Scardamalia, M. (2003). Knowledge building principles and indicators.
Retrieved from <http://ikit.org/SummerInstitute2003/posters/kbindicators.html>

WHY KB CAN REACH EACH AND EVERY LEARNER

Complementary to the 12 principles, there is some exciting new research that helps describe specific qualities that characterize especially innovative organizations and teams of people working in any domain — say, for example, the most successful and creative design teams at Google (see Gloor & Fronzetti, 2015; Pentland, 2014). Fascinatingly, many of these qualities revolve around the *way groups work together* rather than the *individual expertise that each person brings to the table*. As this research tells us, three of the most powerful qualities that describe the way creative and innovative groups work together are:

1. THEY NURTURE A CULTURE OF PSYCHOLOGICAL SAFETY
2. THEY ARE 'BRAVE AND KIND' WITH ONE ANOTHER
3. MEMBERS ENSURE THAT EVERYONE CONTRIBUTES EQUALLY IN CONVERSATION

This research is exciting because it reinforces the fundamental KB tenet that in any KB community, **every single member is a valid and critical contributor**. A diversity of skills, ability levels, talents and interests can be supported through collective efforts to improve ideas and puzzle through authentic problems, and can result in high levels of creativity, innovative capacity, and success for all — given these important group dynamics and conditions are present.



“When we have asked students to compare Knowledge Building with other school experiences, they speak about the pleasure of working together, finding new information that helps advance an idea, seeing their theory taken up by someone else, discovering that the more you know, the more you know what you don’t know, understanding that learning is not so much a matter of the right answer as putting the pieces together in a way that makes sense, and viewing the knowledge advances they have made as team successes” (Bereiter & Scardamalia, 2014, p. 46).



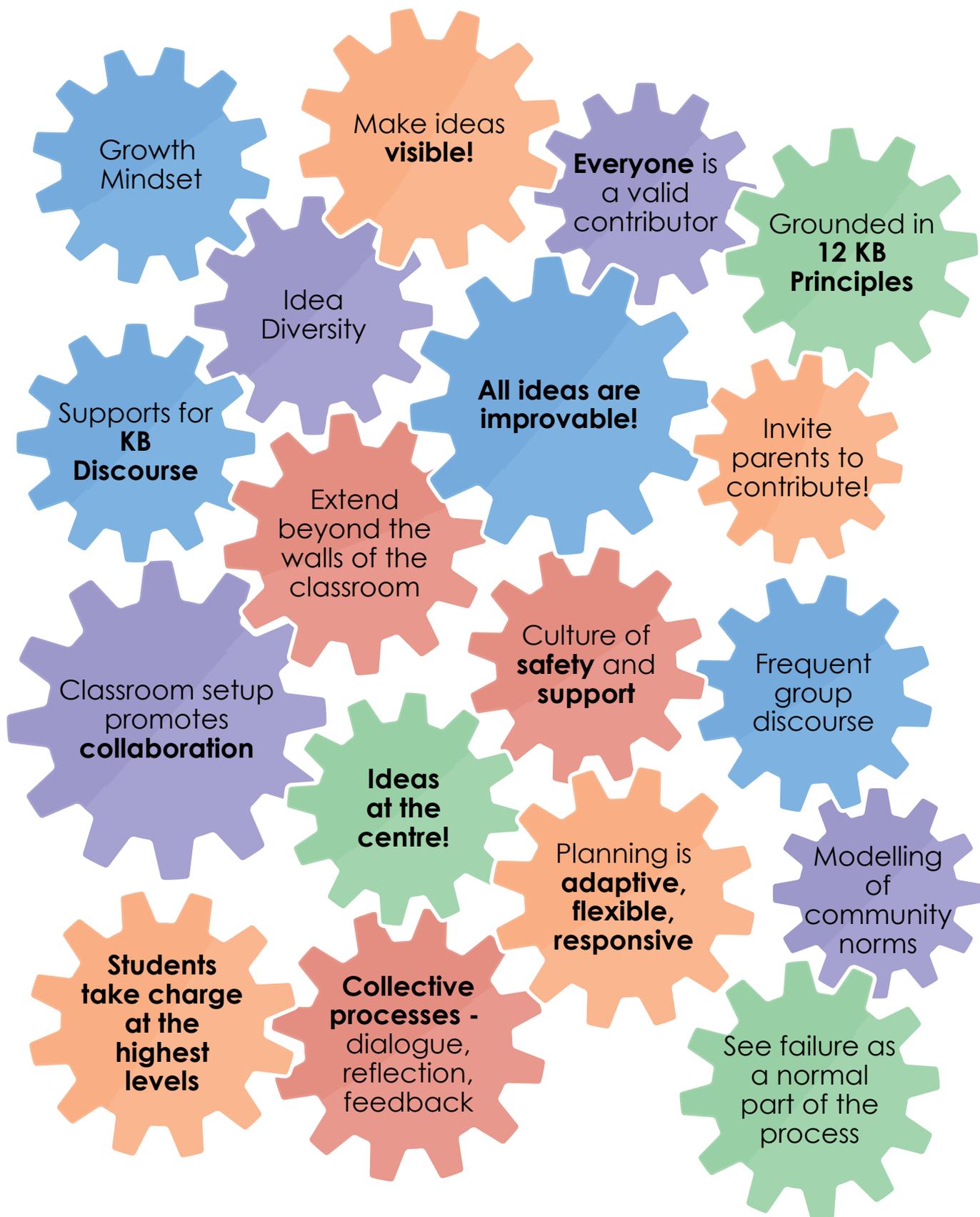
WHAT DOES A KB COMMUNITY LOOK LIKE IN THE CLASSROOM?

The qualities that describe highly effective, innovative groups that operate out in the world are the same that are fostered through meaningful participation in a KB community. For example, a culture of safety and respect is critical. Students must understand import modes of behaviour:

Respectful listening	Paraphrasing to ensure understanding
Making eye contact while conversing	Asking questions for clarification
Waiting turns to talk	Accepting diverse ideas

The qualities highlighted in the image on the following page are elements of classroom life and culture that KB teachers have identified as important to make explicit and focus on in the effort of growing an effective KB community in a classroom. Finding ways to effectively engage these traits and explore how to put these ideas into action in ways that make sense for you and your students can help bring the 12 principles to life and translate them from theoretical ideas to effective practice, strategies, and tactics.

THE MOST IMPORTANT ELEMENTS OF A KB CLASSROOM



THE TEACHER'S ROLE IN A KB CLASSROOM

Idea improvement, innovation, and creative problem solving aren't linear or fixed processes. Often, they are messy, challenging, and unpredictable. However, their organic and emergent nature does not mean they are uncontrollable or chaotic — they still need to be guided by goals and objectives, and demand the

right kinds of conditions to thrive. **The key element needed for a KB community to grow is a teacher who believes in the process, is dedicated to nurturing it in their classroom, and who has faith that their students can take on the challenge.**

“It's not easy! One of the hardest things is not to “rescue” the kids but to let them problem solve, work through puzzlement, and come to the ideas and solutions themselves. Try prompting them to dig deeper rather than giving them the answer or labeling an idea as right or wrong” — *Grade 1 KB teacher*

While Knowledge Building is goal-directed, the path to that goal is unknown and must be discovered by the students themselves — KB teachers support their students in this process. KB requires the gradual transfer of epistemic agency and high-level responsibilities over to students. Epistemic literally means “related to knowledge or knowing” – therefore, the principle of epistemic agency calls for students to have power over how they come to build knowledge and chart the course of their own learning. What this means is that, in a KB community, duties that were traditionally reserved only for the teacher, such as creating and setting knowledge goals, identifying setbacks and challenges, assessing knowledge progress, revising questions and strategies, ensuring equality of opportunity, and so on, need to be handed over to the students as much as possible (Bereiter & Scardamalia, 2014, p. 39). Marlene Scardamalia likes to say, **“hand over as much agency to your students as you possibly can, then hand over some more!”** In this way, students acquire leadership skills, confidence, and the ability to persevere through challenges. KB research from around the world shows that students from diverse backgrounds and achievement levels exceed expectations time and again when teachers take the leap of faith and hand more and more agency over to the kids (Scardamalia & Egnatoff, 2010). The Teacher Talk prompts support teachers in this effort.

KB TEACHER TALK

Can you tell me more about your idea?

Have you considered other people's ideas?

How do you/we know that?

How could you/we find out more?

What could you/we do next?

What do you/we notice?

What is our best understanding so far?

Why don't we bring that question to the group or next KB circle?

What do you/we think might happen if?

Why do you/we think that happens?

How do you/we think that happens?

What might you/we be stuck on?

What can you/we do to help get “unstuck”?

What do we still need to understand?

It is critical to note that KB teachers are not simply “letting go.” On the contrary, teachers are deeply immersed in community work — monitoring, assessing, supporting, modeling, designing, planning, and teaching “just in time.” **Teachers help to ensure the classroom conditions allow for knowledge to grow and emerge organically.** They respond to student needs and nurture students’ idea growth by prompting them to dig deeper, elaborate on their ideas, consider problem areas they may have overlooked, think about useful next steps, and so on. The teacher also must be responsive to the community’s ideas, misconceptions, and knowledge gaps, designing mini-lessons or experiments “just in time” that will help students move their thinking forward. Likewise, the teacher also models a “KB stance” to students — this includes not being afraid to say “I don’t know the answer!” or “I made a mistake!” An overview of the key characteristics of a KB teacher is summarized below (adapted from *Natural Curiosity*, 2011, pg. 18).

“This is one of the things that Knowledge Building teachers do that is so understated. It’s not ‘guide-on-the-side’, it’s not facilitation, it’s finding and cultivating the sparks, it’s literally believing you will, as a community, come up with something new, and you have the wherewithal to do that”
— *Marlene Scardamalia*

- Makes establishing a culture of psychological safety a priority
- Is a co-learner with the students
- Truly believes that all students are able to contribute to and benefit from the process
- Watches for teachable moments arising from student conversations (online, face-to-face)
- Focuses on Big Ideas/major expectations/key concepts rather than specific expectations
- Guides students’ access to resources, people, experiences, etc., to help them with their work
- Plans mini-lessons when needed to address misconceptions or knowledge gaps
- Records and reflects on students’ contributions, questions, ideas, etc.
- Provides students with opportunities to express and develop ideas in multiple modes
- Gives opportunities for frequent KB Discourse
- Models inquiry-based thinking processes
- Encourages students to work in “design mode” to help them to learn how to explore ideas
- Is adaptive, responsive, plans in a flexible way
- Designs experiences (discussion, experiments, field trips) to expose students to new ideas and to help students dig deeper into their ideas

KEY ELEMENT: If a safe and respectful learning environment doesn’t exist in the classroom, then it will be a great challenge to develop a thriving KB community.

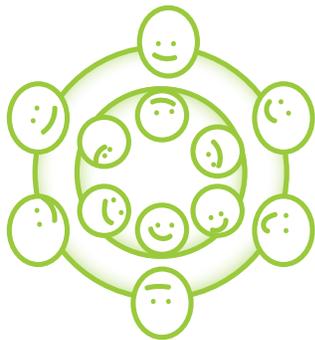
“It’s like going on a trip with your family. I have a family of kids here. And I can say to them, “we’re taking a holiday and we’re going here and this is what bus we’re going on and this is how we’re going to get there and this is the route and all that stuff. And yes, some of the kids might love to do that. But the way we have it now where they choose — I think of it this way. They’re choosing the destination that they go for the holiday, they choose what mode of transport we’re going to use to get there. They choose what stops we’re going to make along the way, where we go for burgers or fries, where we stop for the bathroom. Maybe they see something on the side that’s interesting and they want to switch, and we never get to that original destination. But I think if you presented that to kids and said, “where do you want to go on holiday, and you have carte blanche,” will they be engaged and will they want to plan it out? Absolutely. And I see that analogy as how we’re doing this inquiry. And at the end of the day, they’re still learning how to plan, and book the hotel, and research the destination, and ultimately enjoy the destination. But it’s their choice, not mine, and I’m just there to make sure they don’t get lost”
— *James Lim, Intermediate teacher.*

COLLABORATING AS A KB COMMUNITY: STRATEGIES FOR THE CLASSROOM

The activities and techniques described on the following pages were used by Elaine Heaver, former KB teacher and Inquiry Coach for the HWDSB. These activities can be used from the onset of the school year to help build the kinds of collaborative culture and community dynamics that are needed for Knowledge Building work to thrive. The more students get comfortable sharing and building on one another's ideas, the more they interact as kind and respectful risk-takers. And the more they get accustomed to working as a team, the healthier the KB community will be, and the greater the student achievement.

INSIDE-OUTSIDE CIRCLE

An outer student circle faces an inner student circle. After the student pair facing each other shares/reflects/discusses, the outer circle rotates to make new pairings. After several rotations, the whole class can discuss connections, ideas that surfaced frequently, contradictions, etc.



STANCE LINE

Students form a single line based on how they feel about an issue (e.g., one end of the line represents 'strongly agree' and the other end is 'strongly disagree'). After determining where on the line they stand, have the first half of the line walk down the line so they are facing the second half of the line. Students defend/discuss their stance with the person they are now facing.

THOUGHT TUNNEL

Students stand in one of two lines facing each other. Each line represents an opposing point of view about an issue. Students who are

undecided or "fence sitting" take turns (one at a time) slowly walking through the space between the two lines. As the walker moves forward, the students in the line give reasons why their side (point of view) is correct. Once the walker has reached the end of the line, he/she decides which side to join and identifies which point(s) affected his/her decision. (*Idea:* the students in line only speak when the walker is within arm's reach to avoid too many students talking over top of one another).

MOCK NEWSCAST

Behind a table or standing with a microphone 'on location,' students share their findings like a breaking news story. Groups can share as a news 'team' (e.g. a news reporter interviewing an expert in the field for a documentary).

MAPS

Students make a map to reflect their findings (e.g., showing human migration, locating an event or species, representing populations). Students can create their maps individually, collaboratively in small groups, or create a whole class map in order to make connections, find patterns, or get the 'big picture.'

TIMELINE

Students place events on a timeline to see where they fit in, and how they are connected

to or influenced by other events. Timelines can be created individually, collaboratively in small groups, or as one whole-class timeline. Discuss, compare, and reflect on the timeline(s) to find patterns, trends, relationships, causes, and consequences.

OOH-AAH METER

5 students stand at the front to share a 'cool fact' about their topics. The seated students react to each fact — e.g. "Ooh" or "Aah." The student who receives the most enthusiastic response stays standing and is joined by four new students. The process is repeated, with the goal being to stay up front as long as possible. (*Advantage:* Students are motivated to dig deeper for interesting facts) (*Option:* Students can get another try at the front if they can make a solid connection between seemingly unrelated facts shared by two separate students).

HOT SEAT

An individual (or a small group of students) enters the room in character (e.g., expert in the field, stakeholder of an issue, historical or contemporary person). He/she sits in a chair facing the class. The class asks questions to learn about the 'visitor's' experiences, thoughts, expertise...

TABLEAU

A group of students form a tableau to convey their understanding about their topic. A student from the 'audience' approaches the tableau and taps one student from the tableau on the shoulder. This tap on the shoulder 'brings the character to life.' The student from the audience asks the character questions to learn who/what they are, what they are doing, why they are doing it, etc. That character then rejoins the tableau. Students in the audience take turns 'bringing characters to life' and asking questions. Together, the audience tries to make inferences, find out if their inferences

are correct, and piece the information gathered together to get a 'big picture' of the situation being represented by the tableau.

GRAFFITI

Provide mural paper, butcher paper, or chart paper and coloured markers around the room. Place a question, topic, statement, or picture in the centre of each large paper. Silently, students treat the blank space as a 'graffiti wall' where they show their thoughts/ideas/understanding through pictures, words, phrases, symbols, etc. Students can stay at one paper that is related to their own focus, or students can move around the room to different papers and add contributions to some or all of the graffiti walls. When finished, the class views the completed graffiti walls like a gallery and offers reflections, observations, asks questions, etc.

ARTISTIC REPRESENTATION

Students represent their knowledge in an artistic or graphic form (e.g., sketches, labelled diagrams, webs, collages). Students display their artistic representation around the room. (gallery style) viewing the different works. *Options:* Artists briefly summarize their work. Each stands by their work as students have a Q&A time (e.g. Can you tell me more about your...? Is it significant that you mostly used the colour red?). Students find similarities in their work and another student's work and discuss the significance.

CAUSAL MODEL

In the centre of a large piece of paper, write an event, situation, or fact (e.g., There are only three Northern White Rhinos known to be left on earth). Students determine various causes of the event (e.g., People hunted rhinos for sport; poachers collect rhino horns, etc.) Each cause is recorded around the event with an arrow from the cause to the event (to show the causal relationship). Students then determine causes

for each of the causes (again, with an arrow from the cause pointing to the effect). Students keep working to determine the cause of each new thing they record. (Sometimes, a cause might link to more than one other causal factor). When students reach the end of a “branch,” this helps determine where their knowledge ends and indicates where they could dig deeper. Identifying causes of problems helps students determine solutions to problems.

FISHBOWL

The class forms a large circle. A small group of students sit in the middle of the circle (inside the ‘fishbowl’).

To share information:

The small group in the middle discusses or debates the topic, issue, or event that they have been researching. The students in the outside circle listen to the discussion and record key points. When the small group’s discussion or debate is complete, the outside circle reflects on what they heard/learned and its implications. At this point, the outer circle may ask questions of the small group to clarify or gain more information. Students in the fishbowl may receive feedback from the outer circle on things like their understanding of the topic, and their ability to support their comments (with facts, valid reasoning, expert sources, etc.).

To target students’ collaborative discourse skills:

The small group in the middle debates or discusses an issue. The students in the outside circle listen to the discussion and record their observations related to how the students in the fishbowl demonstrate identified skills, such as:

- Acknowledging others’ ideas
- Respectfully disagreeing
- Asking questions to clarify or extend
- Thinking

When the small group’s discussion/debate is done, the students in the fishbowl receive feedback from the outer circle on the collaborative discourse skills they demonstrated.

PLACEMAT

Students independently and silently write their thoughts/ideas/new learnings in their own section of the placement. Then, in the same groups of 4, students share and discuss what is written in each of the four sections. The middle “pool” section is for the group to record connections they make, patterns they see, big ideas, etc. As a whole class, the middle “pool” from each group can be compared and discussed.

