

The Power of “Yet”

The title page appears on screen. Bright, colorful shapes overlap and shift. Upbeat music plays in the background throughout the video.

Text on screen: Ontario Science Centre; An Agency of the Government of Ontario

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: The Power of “Yet”

Animated graphics sweep away again to reveal Taiba. She is standing in a craft room. There is a whiteboard on an easel beside her. On the whiteboard is a drawing of a plant, showing it both above and below ground, with the sun shining in one corner and a bee flying towards the plant. On a table in front of Taiba are colourful, snap-together building toys, pipe cleaners, and a maraca.

Overlaid text on screen: Taiba (she/her); Science Educator, Ontario Science Centre.

Taiba: Hello! My name is Taiba, and I am a science educator with the Ontario Science Centre. In our previous video, we explored how STEM—science, technology, engineering and math — and STEM skills are naturally embedded in play. We also touched upon the importance of failure and the growth mindset in these spaces, activities and programs. Now, in this video, we'll share tips on how to cultivate a science-friendly growth mindset in your classroom, along with some sample approaches linked to the kindergarten curriculum.

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: Background

Animated graphics swipe away to reveal Taiba.

Taiba: To start, it's important to remind ourselves of the difference between a fixed mindset and a growth mindset.

With a fixed mindset, a learner believes that their intelligence is static. These learners may be convinced they can't learn anything new or may be reluctant to try because of a fear of failure.

Split screen: Children gather in a semi-circle on child-size chairs. An educator squats on the floor in front of them while she reads a book, and text, as spoken by Taiba.

Taiba: With a fixed mindset, you might hear things like:

“I'm not very good at math”

“I can't figure it out”

“Everyone is better than me at this”

“I hate spelling”

“I'm bad at this”

Split screen: An educator leans in to interact with children sorting brightly coloured shapes at a play table; a child reaches out to her educator while she is seated having a snack with a group of children. The educator interacts with all the children seated at the table, and text, as spoken by Taiba.

Taiba: But with a growth mindset, a learner believes that their intelligence and abilities can grow and expand. In this case, you might hear things like:

“That didn’t work, I’ll try something different”

“I can do hard things”

“I don’t understand; but can you help me”

In a fixed mindset, all the focus is on the outcome: If you don’t achieve your desired goal, you’ve failed and there’s no reason to try again.

Taiba appears full screen.

Taiba: A growth mindset though allows learners to find value in what they are doing, regardless of the outcome. Growth mindsets can also lead to stronger social skills and self-regulation.

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: In the Classroom

Animated graphics swipe away to reveal Taiba full screen.

Taiba: We all have a combination of fixed and growth mindsets.

Screen changes to show an educator demonstrating a toy air-powered car. She blows up a balloon attached to the car as he smiles back at her. She lets the balloon go and the car zooms off the table.

Taiba: Since young children are beginning to form ideas about their abilities and are developing their love of learning, reinforcing the growth mindset should start as early as possible.

For early learners, we can foster a growth mindset in the classroom by modelling it, guiding it and celebrating it.

Animated graphics swipe away to reveal Taiba full screen.

Overlaid text on screen: Modelling

Taiba: [Firstly](#), approach mistakes with fearlessness. When early learners see the adults in their lives making mistakes, learning something new, or pushing themselves out of their comfort zones, they become more inclined to mirror that behavior.

Children sit in a row on the floor in front of their educator. She talks to the children, then tips a box of toy construction materials on the floor.

The children start to assemble the wheels, gears and sticks from the materials provided.

Taiba: [Secondly](#), tell your class when *you* are expanding your knowledge and share your learning process. For example, maybe you’re using an unfamiliar piece of equipment in the classroom. Instead of testing it out or setting it up when the classroom is empty, involve your students or use your own growth mindset language.

Taiba appears full screen.

Taiba: Or if you're writing on a chalk board or whiteboard and make a mistake, share that experience and verbalize how you approach it with flexibility. For instance, "I am always working on my spelling".

Animated graphics swipe away to reveal Taiba full screen.

Overlaid text on screen: Guiding

Taiba: Creating a safe space for mistakes and for trial and error is one of the best ways to guide the growth mindset.

You can do this by encouraging students to say, "I don't know" or "I don't understand."
And leaving room for feelings of frustration.

A diverse group of children thread colourful beads into patterns onto pipe cleaners.

Taiba: You can also build a classroom culture where students are expected to try three times before they ask for help.

An educator joins the children at the table and kneels down to engage with them.

Taiba: This will encourage students to make multiple attempts before giving up or turning to others for solutions.

A child has completed their string of beads and makes it into a bracelet. Another child at the table is almost finished their string of beads.

Taiba: In those subsequent attempts, they might see improvements, solve their problem or become motivated to try for a prolonged period.

Taiba appears full screen.

Taiba: Making multiple attempts before asking others to step in is a mindset a child will carry with them and find useful into adulthood.

Animated graphics swipe away to reveal Taiba full screen.

Overlaid text on screen: Celebrating

Taiba: You can use language that encourages and praises effort over ability and process over product. For instance:

Split screen: Children sit in a semi-circle on the floor and interact with their educator. They raise their hands to participate, and he rewards them with big smiles and encouragement; an educator watches closely as a child threads colourful beads onto a pipe cleaner, and text, as spoken by Taiba.

Taiba: "I really love how you tried different ways"

"You were so persistent!"

"You made so much progress!"

"You should feel proud of yourself"

"We will keep working on it together"

Split screen: An educator points to a frog in a picture book for her students seated on the floor. When the lesson is finished she raises her arm in the air. The children raise their arms enthusiastically, and text, as above, spoken by Taiba.

Taiba: Kindergarten age students are in a period of growing independence. Not being able to achieve goals can lead to frustration, big feelings and dysregulation.

Taiba appears full screen.

Taiba: With patience and consistency, you'll start to see the growth mindset flourishing.

Split screen: Taiba, and text, as spoken by her.

Taiba: How can you identify if it's working? You'll start to hear things like:

"I'll try again tomorrow"

"I think I'll be able to do it"

"I can't do it, yet"

Split screen: Children are making tally marks on paper; they playfully look at each other with magnifying glasses; one girl shows another how to inspect toy dinosaurs with their magnifying glasses, and text, as spoken above, by Taiba.

Taiba: Students will also support one another, collaborating to solve problems, offering their own expertise when they see someone else struggling, and using encouraging language to support their peers.

Taiba appears full screen.

Taiba: Studies have shown that students are more likely to approach STEM subjects with a fixed mindset, partly influenced by stereotypes that paint a narrow picture of innate aptitude and the kind of people likely to have it.

A group of children are making tally marks on paper on the floor of the classroom.

Taiba: This rigid view of who a "science person" is can cause students to count themselves out.

One child works diligently making tally marks on paper, and hands his tally sheet to the educator. She looks it over and gives him feedback on what he's done.

Taiba: By modelling a growth mindset as part of the process, science can become less intimidating. Students may find it easier to picture themselves as a "science person" by virtue of simply trying, regardless of result.

Taiba appears full screen.

Taiba: In this approach—and in reality—anyone can be a "science person."

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: The Power of Yet

Animated graphics swipe away to reveal Taiba.

Taiba: Language can make a significant difference in how we perceive and engage with the world. Making little changes to how we speak about our abilities can have a big impact on our mindsets. Consider the power of the word *yet*.

Split screen: Taiba, and text, as spoken by her.

Taiba: “I can’t do it!”

This is a common feeling we’ve all had at one point or another. It can lead to frustration, deflation, defeat and resistance to trying again.

Now compare that to: “I can’t do it *yet*”

This acknowledges that something might be tricky at this moment, but you are confident that you will be successful in the future.

Taiba appears full screen.

Taiba: I liken the power of *yet* to the little engine that could: “I think I can, I think I can, I think I can.”

A child shows another child how to assemble a toy car from wooden toy building components; children draw on paper with coloured chalk as they lie on the floor.

Taiba: It sparks an image of perseverance and resilience, and it contributes to building a positive self-image. Young kids will see themselves as capable and determined, a mindset that they can carry with them as they grow throughout their educational journey.

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: Curriculum Alignment + Sample Activities

Animated graphics swipe away to reveal Taiba.

Taiba: Nurturing the growth mindset is beneficial in meeting virtually all of the Kindergarten curriculum expectations.

Overlaid text on screen: B12. Scientific Investigation and Engineering Design

Taiba: Here’s an example using Scientific Investigation and Engineering Design.

Animated graphics swipe away to reveal Taiba.

Overlaid text on screen: Example 1

Taiba: You set up an activity where you ask students to build a tower or structure out of materials of their choosing. The tower needs to reach a targeted height and hold a certain weight, say two or three books.

We see children start selecting large blocks of various shapes to build their towers; as the towers are completed, and an educator evaluates each of them for height, load bearing, and stability.

Taiba: Students working on this activity will need to consider what materials have the strength and stability to allow their structure to reach the intended height.

The children continue to work on their towers. They start working as a team and complete a sturdy, tall tower. Some of the children build while others select more blocks suitable to the design of the tower being built.

Overlaid text on screen: B12.3 select materials and tools to carry out investigations and to construct models and structures.

Taiba: In doing so, they are gaining experience with selecting materials and tools to carry out investigations and to construct models and structures.
It may take several attempts and multiple iterations with different materials or building styles to find a structure that reaches the desired outcome.

Split screen: Taiba and text, as spoken by her.

Taiba: This activity also targets components of the engineering design process, such as:
Brainstorming and designing a solution;
Building a model with selected materials;
Testing and checking to see if the solution works;
Improving the design based on observations.

Taiba appears full screen.

Taiba: The components of engineering design mirror the Ontario Science Centre's *Ask, Test, Repeat* model of scientific inquiry, something we'll dive into more deeply in our next video.

The children reach high over their heads to continue their tower. When they can't reach any further, the tower is complete. Another group of students are still working on their tower. An educator comes to check the tower and points out that the base of their tower is too small to stay stable.

Overlaid text on screen: B12.4 draw conclusions and communicate results.

Taiba: Once the activity has been completed, or students have gone as far as they can, they can start to draw conclusions and communicate results by showing or describing the process of building their structure.

Taiba appears full screen.

Taiba: Communicating results and findings is a critical part of the growth mindset, as it focuses on the effort and process of a project, not the result.

The children rectify their tower base and build it as high as they can reach. The tower slowly teeters, then topples over. The children laugh and jump around.

Taiba: In an activity like this one, structures will topple. Heights won't be reached. Weights will cause collapse. And that's okay!

Split screen: The children pick up the fallen foam blocks and start rebuilding. An educator points out that they have started with too small a base. They correct their design and continue to build, and text, as spoken by Taiba.

Taiba: These are great opportunities to ask reflective questions, such as: What would you do differently the next time? What would you do the same? Having students reflect on an activity where they may not have felt successful can ease the transition. By nurturing the growth mindset, you encourage your students to persevere regardless of the outcome.

Animated graphics swipe away to reveal Taiba.

Overlaid text on screen: Example 2

Taiba: Like STEM, the arts are another area where we see a strong emphasis on the product, rather than the process.

For example, you set up an activity where students are asked to invent their own robot by cutting out different coloured pieces of construction paper and glueing them to a black background.

A group of children are seated at a craft table supplied with colourful construction paper, scissors, and glue sticks; one child holds up his completed robot; two children raise their hands for the educator to come and see their robots; all the children hold up their completed robots with pride.

Taiba: The goals are for students to name the robots, describe an activity or job that the robot might do (maybe they help pick up garbage), and to identify the *intended* shapes that comprise the robot's body. Those are the only parameters, leaving students free to use their imagination and creativity!

A close up of the children cutting and glueing during the early stages of robot production; and an educator holds up a child's robot and talks to the child.

Overlaid text on screen: A9. Geometric and Spatial Reasoning

Taiba: In this activity, students will be engaging in *geometric and spatial reasoning* when asked to describe the intended shapes present in their robots.

An educator leans close to a child in the process of naming her robot.

Overlaid text on screen: A1. Oral and Non-Verbal Communication

Taiba: They will also be using *oral and non-verbal communication* to share their robots' jobs, shapes and names.

The children continue to work on their robots by cutting out shapes with scissors and applying the shapes to the background with glue sticks. One child is having some difficulty with the scissors but continues to try.

Taiba: To complete their robots, students will be using scissors and glue sticks, both of which can be tricky for small hands. Often, for early learners, the product of an art project will not match their intended result, which can lead to frustration and fixed mindset language. You might hear things like “I’m bad at art” or “I hate using scissors,” for example.

The children hold up their hands to show that their robots are complete; the educator visits each child to admire and ask details about their robot; an educator watches the children as they create their robots.

Taiba: After they’re done, when you ask students to share their responses to the project goals, like the robot’s name and job, also ask them questions like what they enjoyed about the project, what excited them, what they feel proud of and what they hope to get better at.

Taiba appears full screen.

Taiba: Listen for growth mindset language and guide them along the way.

Animated graphics swipe away to reveal Taiba.

Overlaid text on screen: Example 3

Taiba: The growth mindset doesn’t just apply to academic goals and curriculum expectations, either! We can model, guide and celebrate the growth mindset during everyday endeavours.

A child zips up their own coat. A child’s foot slides into a winter boot; an educator helps a child who is wearing a jacket put on his backpack; an educator checks a child’s gloves on a snowy day; another is helping a child with her mittens.

Taiba: Putting on winter gear is a great example. This can be a daily challenge for students of many ages but particularly for our kindergarteners (and for us, as their teachers!). Getting gloves on the right way can cause a lot of frustration. Did they try more than one way? Did they reflect that even though it feels hard right now, it will get easier? Did they see another classmate having a tough time and offer encouragement or assistance?

Educators hold children’s boots for them and help them slide their feet in; a child ties his boots by himself.

Taiba: Even in daily routines like getting shoes on the correct foot, tying laces and zipping jackets, there are opportunities to nurture the growth mindset,

Taiba appears full screen.

Taiba: while at the same time addressing other priority Kindergarten curriculum areas such as social skills, self-regulation and problem solving.

Animated graphics swipe away to reveal a title card with playful geometric shapes.

Text on screen: Conclusion

Animated graphics swipe away to reveal Taiba.

Taiba: Kindergarten is an exciting, and often challenging time for a child. There are unfamiliar routines, new expectations, different personalities and an abundance of learning.

Children play together on the floor of the classroom. Arrows are being placed on the floor to help a toy dinosaur to find its way through obstacles; two boys assemble their robots with construction paper, glue and scissors. One of the boys has a big laugh; an educator raises his hand, and his students raise theirs also; an educator sits with children who are pouring small plastic beads into cups.

Taiba: In this early stage of students' learning adventures, we don't want them to view intelligence as something they either do or do not possess, to see skills or even learning as something they innately can or can't do. Everyone can learn!
You are one of the most important adults in your students' world. As educators, how we interact with our students shapes their attitudes toward learning throughout their lives.

Taiba appears full screen.

Taiba: Teaching and nurturing the growth mindset in early learners has long-term benefits. By recognizing—and helping students recognize—that their abilities can flourish with work, dedication and, yes, mistakes along the way, you're helping your students build their resilience and self-esteem while nurturing a love of learning. All with a growth mindset.

Animated graphics sweep away to reveal text.

Text on screen: We hope you enjoyed this video, which is part of a series developed to support Ontario's kindergarten teachers in STEM education.

Be sure to check out other videos in this series along with additional classroom-ready resources and professional learning resources at OntarioScienceCentre.ca.

Animated graphics sweep away to reveal text.

Text on screen: Ontario Science Centre; An Agency of the Government of Ontario