A CLEVER FACILITATOR’S GUIDE TO ALL THINGS STEM: WHAT YOU CAN DO!
HELLO!

LET’S DO AN HONEST TAKE ON EDUCATION.

Conventional education is known to focus on academic achievement and tends to turn learning into work, (boohoo)!

At Clever Play, we believe learning should be self-directed and enjoyable!

At Clever Play, we believe that learning is a creative process, is curiosity-driven, is joyful and should be self-directed.

Did you know that children learn valuable and applied skills as they play?

Coding robots, building structures, or mixing substances can all introduce children to basic principles of science, engineering, and math.

STEM and STEAM education are sure to be hot topics in 2020 and beyond, but what do these terms really mean and how do they apply to your child’s future?

LET’S FIND OUT.
WHAT DOES STEM STAND FOR?

STEM is a popular acronym embodying a philosophy of education that stands **integrates the applications** of Science, Technology, Engineering and Math.

STEM and STEAM are about teaching these skills and subjects in a way that applies to real life.

...AND WHAT ABOUT STEAM?

STEAM (Science, Technology, Engineering, Arts and Math) is about incorporating applied arts and creative thinking **into any work situation**.

The extra A teaches children about empathy, ethics and citizenship in an engaging way by raising important questions and starting **discussions on best and most human-uplifting practices**.

For instance, creating new ways to solve a problem or integrating principles of design into practical dilemmas.

The practice and principles of the two terms are highly similar, but it’s a matter of personal preference which acronym you choose to use.
The Drive to Harness Children’s Natural Ways of Learning

**OUR LEARNING FRAMEWORK**

At Clever Play, we emphasize the playful state of mind.

**Curiosity:**
The Drive to Explore & Understand

**Playfulness:**
The Drive to Make & Create

**Self-Direction:**
The Drive to Harness Children’s Natural Ways of Learning
Clever Kids have a set of skills required for thriving in the age of digital change and uncertainty. They are:

**Creative**
able to look at familiar things with fresh eyes.
Experimenting, exploring, and tinkering.

**Compassionate**
caring about others and behaving toward them with affection, generosity, and concern.

**Collaborative**
Share information and ideas with their peers.
STEM based learning is a brilliant way for children to explore their curiosity in a natural way.

Educators are always looking for effective and meaningful approaches to engage with young children and a STEM focused curriculum provides space to do so.

Children love to have fun, so play is a wonderful opportunity to pick up skills and knowledge at the same time.

In the years ahead, jobs in the STEM fields are projected to grow about twice as fast as those in other industries. What's more, many of these careers are among the highest paying. But getting a good job isn’t the only reason you should help your students to develop a solid grounding in STEM. In an age of smartphones, the internet, remote health care and computes, your students need to master basic STEM skills to thrive in today’s world. A little bit of engineering and computer science can go a long way no matter one’s future career. They key is to get kids excited about science at an early age and find ways to help them keep learning it!
Studies say that 4 year-old kids, on average, ask around 300 questions a day. Mostly why’s or why nots. At times how’s. Kids wonder so much that parents, even teachers may have had to sternly put them on “curious chatter break” just to escape their relentless asking. Then they stay attending school and before long, books start answering their questions and relentlessly load them with so much information – what we call curriculum content (ideas, theories) – that it seems their searching minds are being systematically quieted. Conventional classrooms are quick to launch answers before kids’ interest could take off, and possibly lead to unchartered pathways of discovery.

Easy to see how that is a waste of great opportunity to discover something beyond what is already known. If you feel as strongly as we do, then we have the collective job not to squander this natural capacity for innovation within each child. We should have them chasing mysteries and missing links just to keep the mind searching.
If your conventional practices have failed to keep sparking curiosity, this is your chance to re-ignite the curious minds of your learners.

Basic fact: A curious mind asks questions. You will hear someone inquire about practical things or reason why certain procedures are done the way they are. If you see the puzzled look in your students, that’s your chance to let curiosity break free and spread around.

But what sparks intellectual curiosity?
- a break in pattern
- an unexpected turn or outcome
- a chance to transform an old idea
- a challenge to apply a new method
- unstructured play and tinkering
- A FREE ZONE TO ASK QUESTIONS

Do parents think it’s worthwhile? In a study done by Wakefield Research in 2018, they found that 94% of parents actually believe that the more curious children are, the more likely they are to be successful as adults. This, of course is supported by research that recognize the power of asking questions to produce great work. All signs point to the fact that being curious is the starting point to being creative, learning new things and thinking critically.
CURIOSITY HACKS TO HONE IN YOUR CLASSROOM

1. Curiosity Check – have students list down the things (anything!) that they want to learn more about, are intrigued by, or excited to explore more. This will give you a clue how to connect subject content to their interests and real world scenarios, making it relevant and meaningful to them.

2. Question Bank – allocate a box or jar or any container where they will drop random questions about anything under the sun and within the known universe. You may even throw in there musings about the unknown part of the universe. Why not? Nothing off limits! Let’s get their imagination to climb beyond visible ladders. It is one thing to have them recite answers from a book. But it is much more enriching to have them think up quality questions developed through critical thinking.

3. Curious Channels - Scout for activities that encourage discovery or exploration. Make it a team work. For any given topic, there is likely an unknown, lesser known or often misunderstood idea. Use that to fuel their wondering.
CULTIVATING THE RIGHT STEM MINDSET

Children are magical and it is their genuine spirit that makes our STEM world go round. At Clever Play, we take each child as an opportunity to serve. Children carry our STEMtastic mission forward.

Being teachers, YOU are the chosen ones! Your STEaMazing energy will pave the STEM path. In your hands lies the destiny of countless of kids and essentially the task of raising a generation. You are the gurus and truly in the driving seat and can shape and empower these little scholars. Like Henry Adams once said: “A teacher affects eternity; he can never tell where his influence stops.”

From tiny tots in kindergarten to grade-schoolers you will cover the whole-range and we begin it by tapping the brilliant human mind. Or simply put, by cultivating the right STEM mindset.
**THE ABC MODEL OF STEM**

**Affinity not apathy:** To keep the STEMomentum, we must consciously use vocabulary, design our classes, lesson plans and most of all give psychological permission to the pupils to do things by trial & error. There should be no shaming and in fact, perhaps reward for perseverance. Such small but meaningful and concrete steps will help us give the students a love and not indifference towards learning.

**Tip:** Conduct a class on the process on ‘Photosynthesis’ in a botanical garden instead of the classroom and see the children blossom!

**Collaboration not competition:**
We all enjoy a healthy competition but always encourage your students to have eyes on the prize. There’s a time to collaborate and there’s a time to compete. If someone is coming up with a decent piece of work, and needs a helping hand your students should be the first one to help.

**Tip:** Send a written note to the most active helper in your class.

**Bridge not barrier:** In a class there will be children who will academically more gifted. But there will be others who will be more skilled. While it is imperative that we give credit where it due. It is equally important to recognize the skilled child too. Build a bridge between the two critical skill sets and see the duo progress.

**Tip:** In your technology class, combine the two talents. One can let’s say take care of hardcore stuff like coding, the other can take care of designing and creativity.

**Discussion not debate:** You are likely surrounded by little Newtons and Marie Curies. They are invested in their work and at times so involved that, they find it hard to imagine (let alone believe) that they are wrong. I can feel you; I really do! But no point in debating with your student. Let him or her try his method of doing thing. If he comes back, dejected. Calmly discuss and do not debate. If he comes back successful, congrats teacher! You taught a genius.

**Tip:** We must be very mindful of our words and tone with students. Our praise or harsh comments can make or mar the learning journey.
WE THINK STEM IS STEMtastic!

Ultimately, for future generations critical thinking and problem solving are necessary skills that are honed and developed with age and experience.

In a technology driven society, STEM based education provides a blended learning experience for your students to get the start in life they deserve.

Fortunately, you can be your students’ best advocates for STEM, no matter what your own educational background is!
MESSAGE TO OUR TEACHERS

Teachers wear many hats: they are guides, facilitators, instructors, mentors, and caregivers. They play many roles, too.

Regardless of how quickly technology is advancing, one thing is certain: human teachers are not going away.

In fact, at Clever Play, we believe that teachers are needed now more than ever. But their role MUST change to keep up with children’s educational needs and the world in which they belong.

At Clever Play, we elevate the teacher status to a WHOLE NEW role.

The empowerer gives children permission to apply their interests and passions in real world projects, all while stretching their capabilities and letting children be drivers of their own learning journey.

The world today needs EMPOWERED children, not INSTRUCTED or WELL-MANAGED children.

And the change starts with you, Empowerer.
MESSAGE TO OUR TEACHERS

I am a STEMtastic hero and can fuse Science anywhere & everywhere.
I am an active integrator of Technology.
I have an Engineering mind and I look for solutions to problems of the world.
I am inspired by Math and cannot wait to explore it’s wonders.

STEM is my superpower. And I will change the world with STEM!
If you’re interested in integrating our unique Clever Play early childhood STEAM program in your pre-school or school, follow the simple steps below!

**STEP 1:** Schedule a Call With a Friendly Clever Play Representative

**STEP 2:** Sign Agreement

**STEP 3:** Onboard & Training

**STEP 4:** Launch in Your School

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**Stay Connected**

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