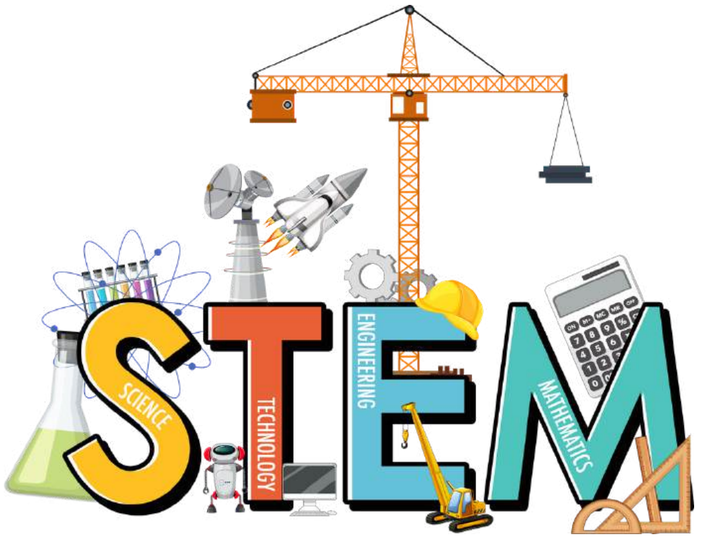
Developing Curiosity in Children

The ingredient for catalysing innovation

David Ogunshola

What is the STEM Teaching Series?



We believe that great STEM teaching is the critical difference between students who end up creative and students who just pass through school.

The STEM Teaching Series is aimed at empowering teachers educators with the skills and tools to raise innovators.


Why curiosity?

Curiosity is the catalyst for innovative thinking and problem-solving.

Curiosity is simply the urge to know more about something

A curious mind doesn’t stop at asking questions but also takes steps to find the answers

Questions children ask fall into two categories

Questions they can figure out themselves

Leads them to exploration

Questions they cannot figure out themselves

Leads them to teachers or parents

When a child is not touching things and not asking “too many” questions, it means that the child has stopped asking themselves questions.

If nothing is done to help them early, they may struggle in today’s workplace

The Global Achievement Gaps

1. Critical Thinking And Problem Solving
2. Collaboration Across Networks
3. Agility And Adaptability
4. Initiative And Entrepreneurship
5. Effective Oral And Written Communication
6. Accessing And Analyzing Information
7. Curiosity And Imagination

Every child was born curious

Some children lose it along the way, and many times it gets killed by either parenting or education

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Killers of Curiosity

Fear

- Fear of failure
- Fear from previous responses to intellectual risk-taking
- Fear of parent's or teacher's reaction
- Fear of what you might discover

Environment

- Sometimes, places that are too organized restrict children from exploring
- The atmosphere in your home or classroom can either inspire or discourage curiosity

Technology

- Having answers at your fingertips
- Too much screen time

Tools for developing curiosity

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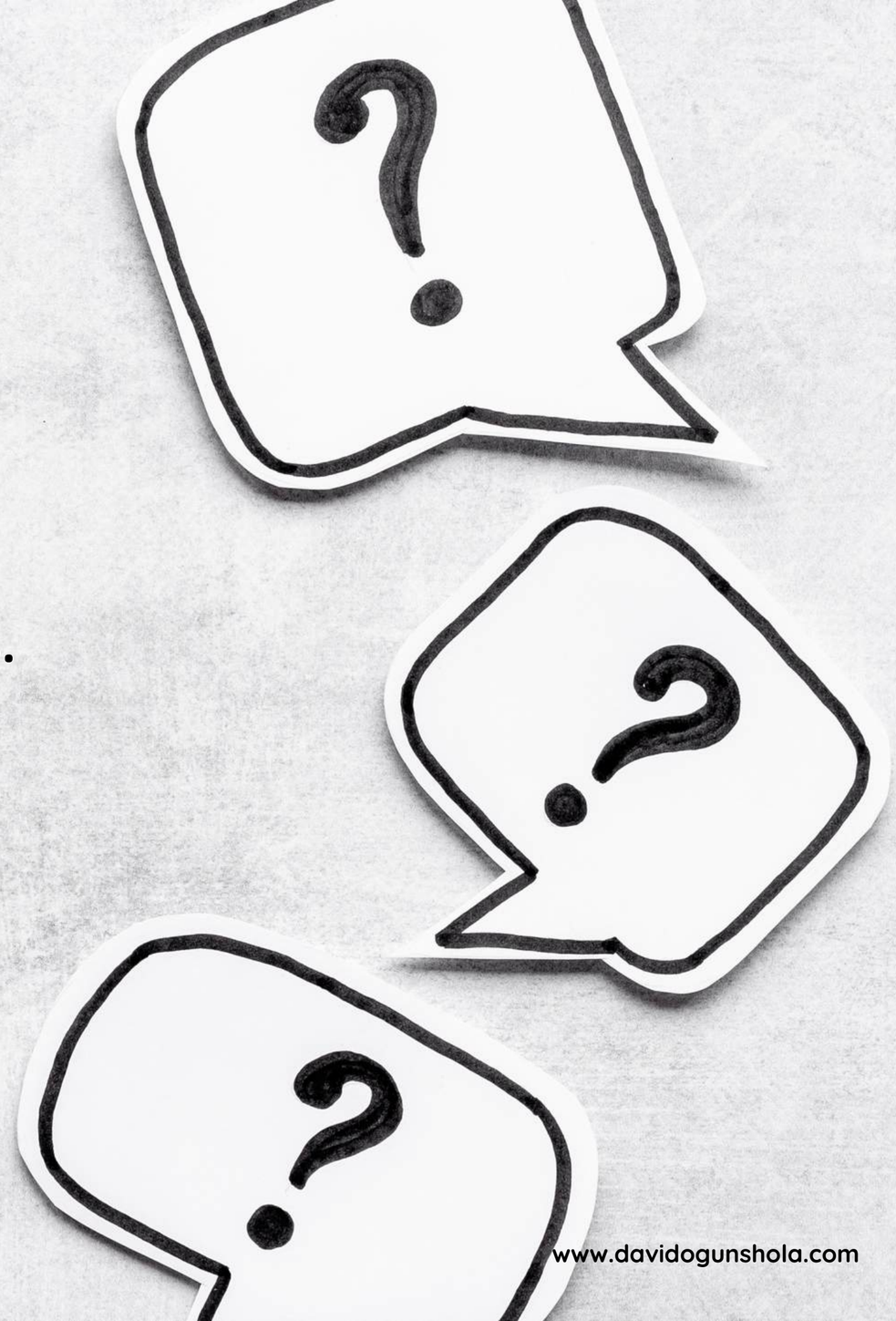
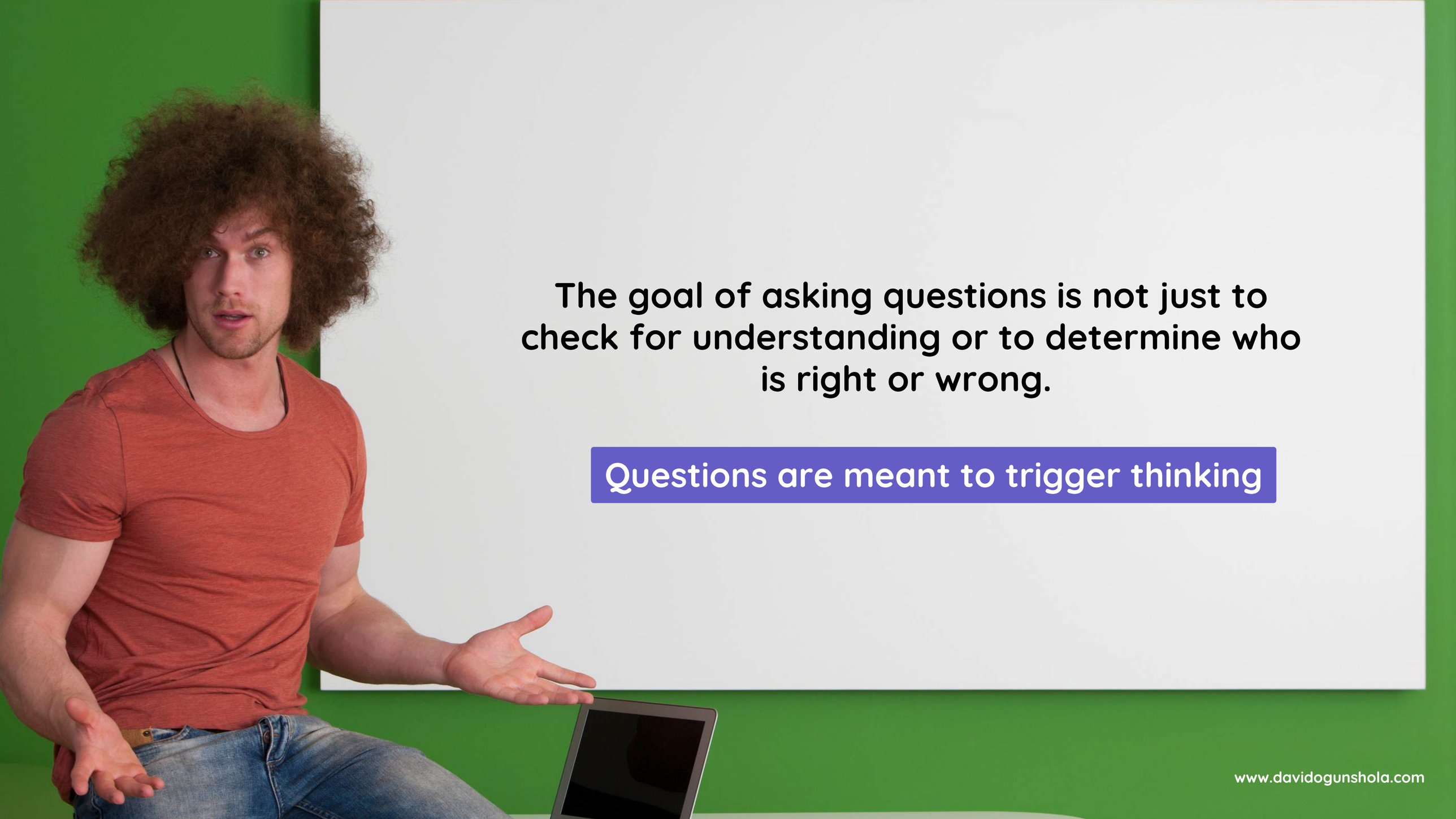
Questions

Curiosity is originally about asking questions.

The way to develop it is to help the mind of the student to get used to asking questions and comfortable around finding answers



Do you recognize these items?



The goal of asking questions is not just to check for understanding or to determine who is right or wrong.

Questions are meant to trigger thinking

There are broadly two types of questions

Investigable Questions

Questions that require students to perform an ‘investigation’ before they can answer it.

The investigation will most times involve experimentation, collection of data, evidence gathered and investigative design

Non-Investigable Questions

Questions that do not create an opportunity for investigation or experimentation.

They can be answered with just theory or explanations.

Is this an investigable question?

Would sugar dissolve faster in hot water or cold water?

Is this an investigable question?

What is the name of the part of a plant responsible for photosynthesis?

There are 3 types of investigations

Descriptive

These investigations focus on counting or describing data from one phenomena.

Sample Investigable Questions

"How many seeds are in an apple?"
"At what time of the day is your shadow longest?"

Comparative

These investigations use data to compare two or more phenomena.

Sample Investigable Questions

"Which of these two paper towels absorbs water the most?"
“Does sugar dissolve faster in cold or hot water?"

Experimental

These investigations use data to compare two or more phenomena.

Sample Investigable Questions

"What amount of water results in the most plant growth?"
“How does the weight of an item affects its response to gravity?”

Some popular mistakes to avoid when you ask students questions

- Calling the first student to raise their hands
- Immediately giving feedback on questions (whether right or wrong)
- Calling the same sets of students repeatedly because you know they will get it right

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Learning Spaces

Make your learning space to be one that trigger questions, spark curiosity and encourage investigation and exploration

Few tweaks you can make to your learning space

- Make play items accessible to students. They shouldn’t have to ask you before they can reach items needed for play and investigation
- Make seating arrangements less monotonous and restrictive and more encouraging of collaboration and exploration
- Factor safety: don’t be too creative at the expense of student safety
- Set guidelines for the use of items. If possible label things and let them know what and when things can be used, even in your absence

If you can’t encourage or develop the curiosity of your students, at least don’t kill it.

Teach Differently

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