

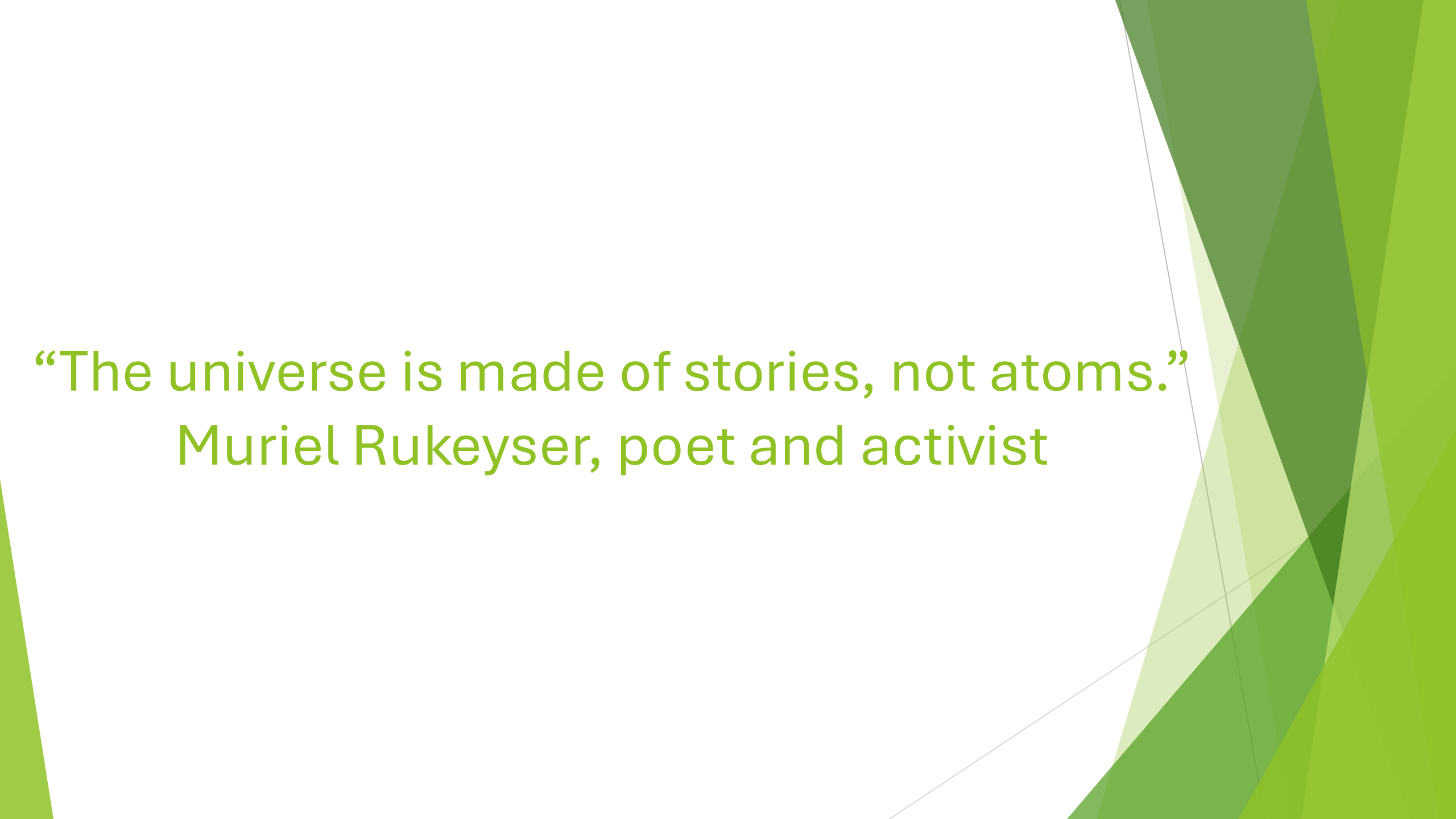
Inquiry on Inquiry: Questions for Formative Assessment

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The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The overall composition is clean and modern, with the text centered on a white background.

“The universe is made of stories, not atoms.”
Muriel Rukeyser, poet and activist

"What's the bravest
thing you've ever said?"



"Help" said the horse

The Boy, the Mole, the Fox, and the Horse
by Charlie Mackesy

GOALS FOR THIS HOUR

Build Collegiality. Foster curiosity.

Let's have an authentic conversation about teaching with people with whom we don't usually have a chance to engage like this.

Let's be co-responsible for attending to equity of contribution, inclusion of all participants, and respect for diversity.



GOALS FOR THIS HOUR

Participate in a Question Formulation Technique (QFT) Activity.

Express what topic(s) in your course(s) are not well-understood by students, and pick some statements on which students could generate questions that would help you and your students mitigate barriers to correct conception.

GOALS FOR THIS HOUR



Debrief and Connect the activity to formative assessment in our own classrooms.

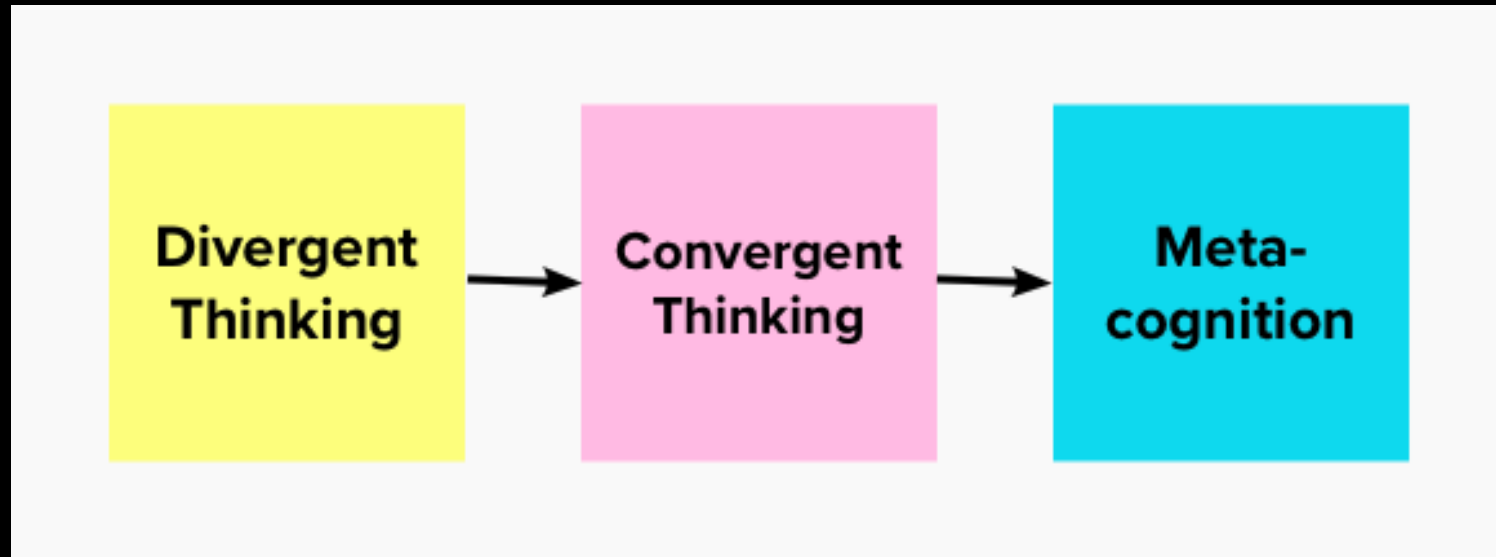


Reflect on how we can use the questions and themes we generated to inform our teaching.

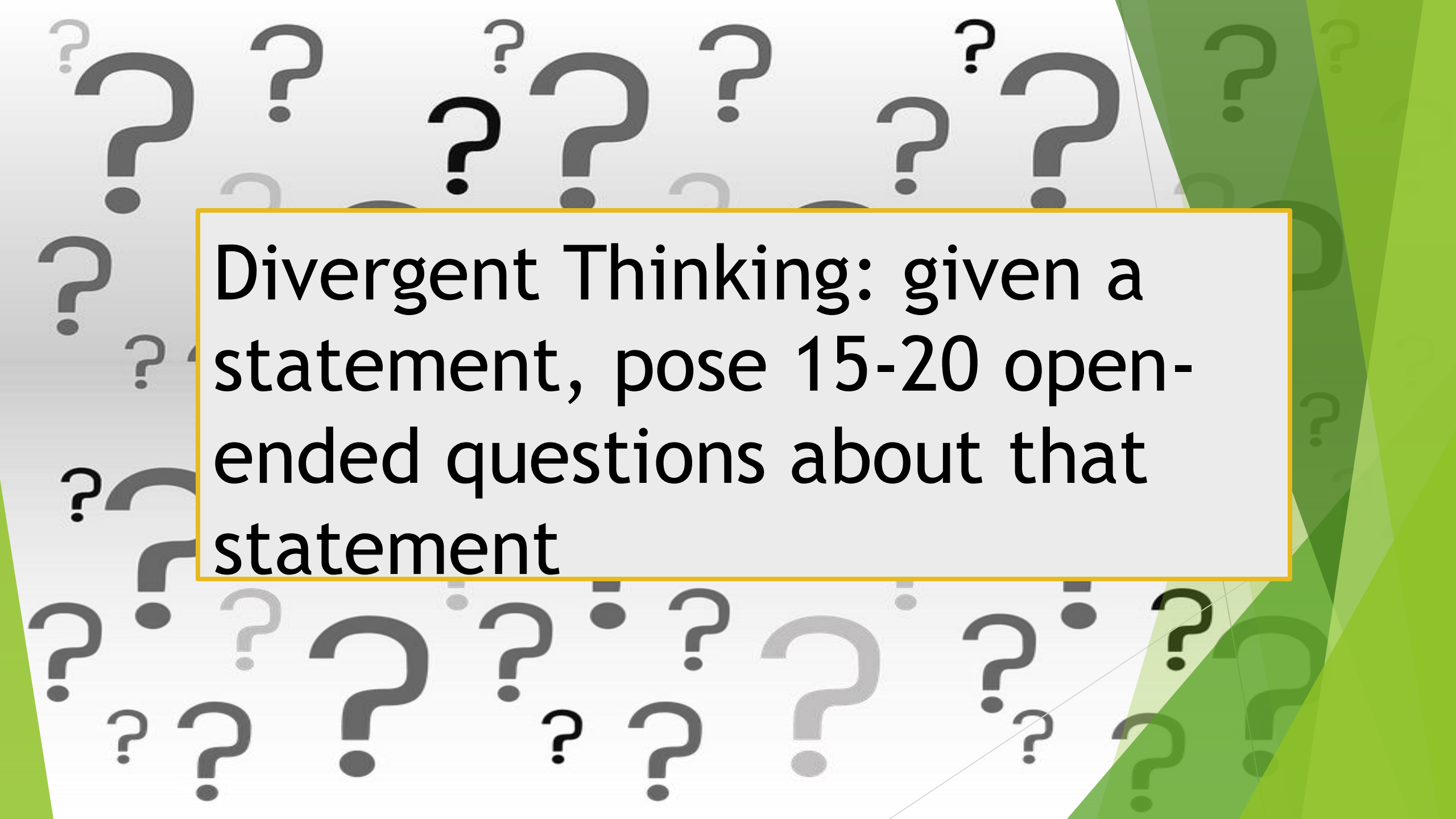


Reflect on what our questions and themes tell us about our methods of highlighting student thinking.

Question Formulation Technique*



**Make Just One Change: Teach Students to Ask Their Own Questions*, by Dan Rothstein and Luz Santana
Right Question Institute: <https://rightquestion.org>

The background features a light gray gradient with numerous question marks of varying sizes and opacities scattered across it. On the right side, there are several overlapping, semi-transparent green geometric shapes, including triangles and polygons, creating a modern, abstract design.

Divergent Thinking: given a statement, pose 15-20 open-ended questions about that statement

We value student thinking and understanding.

Please generate **15-20** questions about this statement.

Please do so **individually**, writing **each question in a separate text box**.

Do not discuss or judge your questions. **Be Curious**.

Your questions should be **open-ended**, not yes/no answers.

Your questions must be *actual questions*, not statements.

ROUND-ROBIN GROUP WORK

1. Person with the next birthday starts: Pick a **question** or **theme** that emerges from your own list and share with the group.
2. Person with the next birthday builds on that theme with another question or introduces a new theme and question.
3. Once everyone has shared a few times, refine the themes by group discussion.
4. Be prepared to share with the whole group.

What are some common themes from among our groups?

- ↴ What does **your** group **notice** about the themes you came up with and the questions that fall into each theme?
- ↴ What do these noticings tell you about the challenges you anticipate facing as an educator?
- ↴ What do you **wonder** about how to succeed as an educator, and what supports might you need?

How does this play out in an undergraduate classroom?

MTH 401A Real Analysis, Spring 2020, Day 1

Prompt: We understand calculus well.

Major Themes:

- ↵ The Nature of Understanding
- ↵ The Nature of “Well”
- ↵ Application of Knowledge
- ↵ Who is “WE?”
- ↵ Affective Domain Concerns

What do these themes tell me about my students' stories?

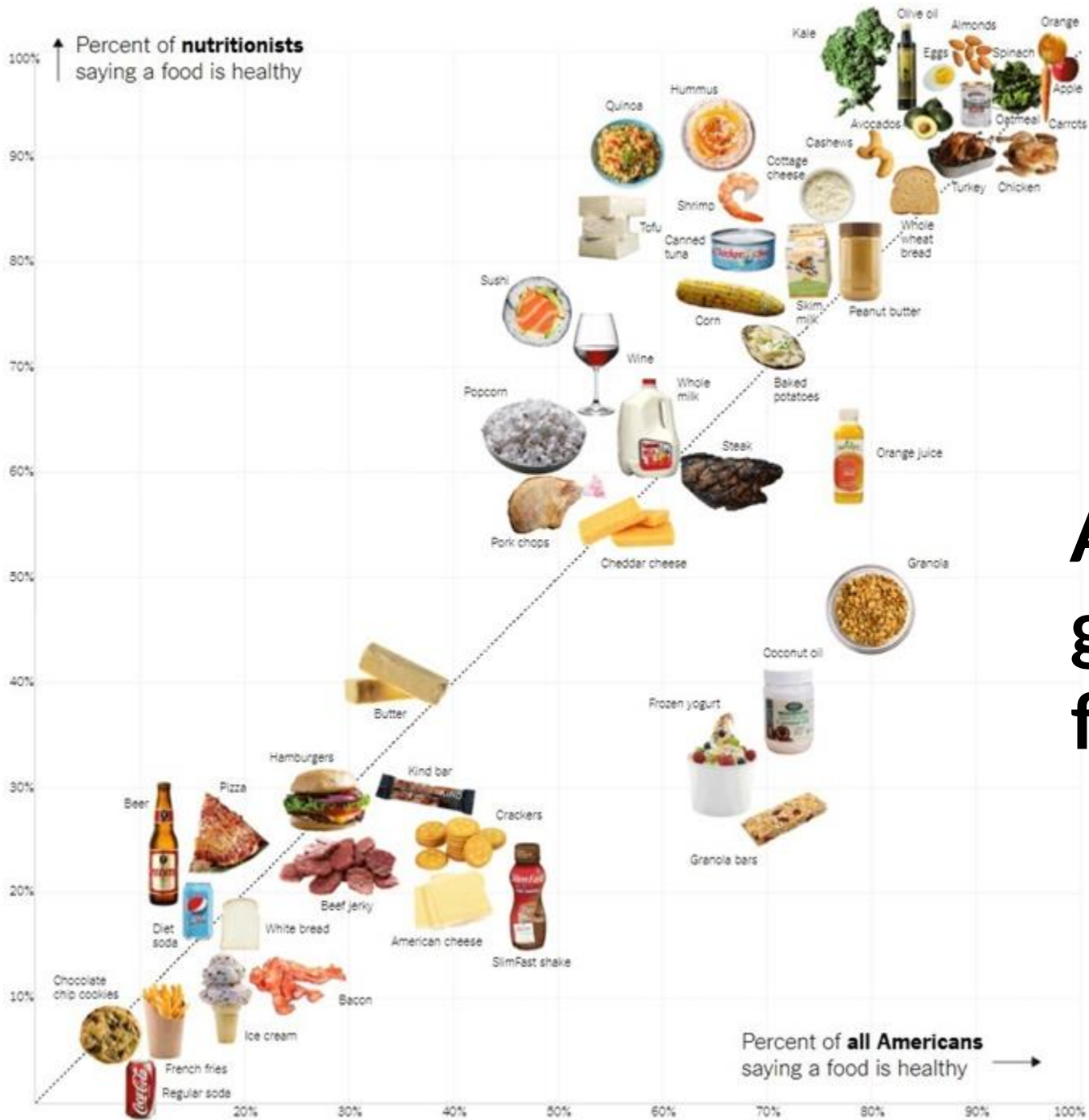
What do these themes tell me about my students' stories?

↓ And how does this impact my facilitation of their learning?

Grounded in simple claims:

- ↵ “The skill of being able to generate a wide range of questions and strategize about how to use them effectively is rarely, if ever, taught.”
- ↵ There is no one set of “right questions.”
- ↵ “The rigorous process of learning the develop and ask questions offers students the invaluable opportunity to become independent thinkers and self-directed learners.”

What examples can we think of
for prompts that would generate
questions?



Americans have a good sense of what food is healthy.

Image from [New York Times data visualization site](#).

Multiple Thinking Abilities

- ↳ **Divergent Thinking:** generation of many ideas, conjectures, and possibilities
- ↳ **Convergent Thinking:** synthesis of many ideas, making sense, organizing, and summarizing thoughts
- ↳ **Metacognition:** thinking about thinking and learning as a process, and leveraging one's strengths to improve transfer and application of learning

FORMATIVE ASSESSMENT is...

...an ongoing, in-process procedure that gives students feedback about their understanding, conception, and learning needs, and that gives educators information about what modifications need to be made in order to improve student learning.

How might we use a QFT for formative assessment?

- ↴ Common themes = Common concerns
- ↴ Centers student curiosity and inquiry, and gives students space to ask the questions they have about content or big ideas
- ↴ Allows for opportunity for students to discern what questions they have without judgement, which in turn leads them to ask more questions and seek answers



How might we use a QFT
to engage students in
▶ telling their stories?

"I'm so small," said
the mole.



"Yes," said
the boy.
"but you
make a huge
difference."

Thank you!

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