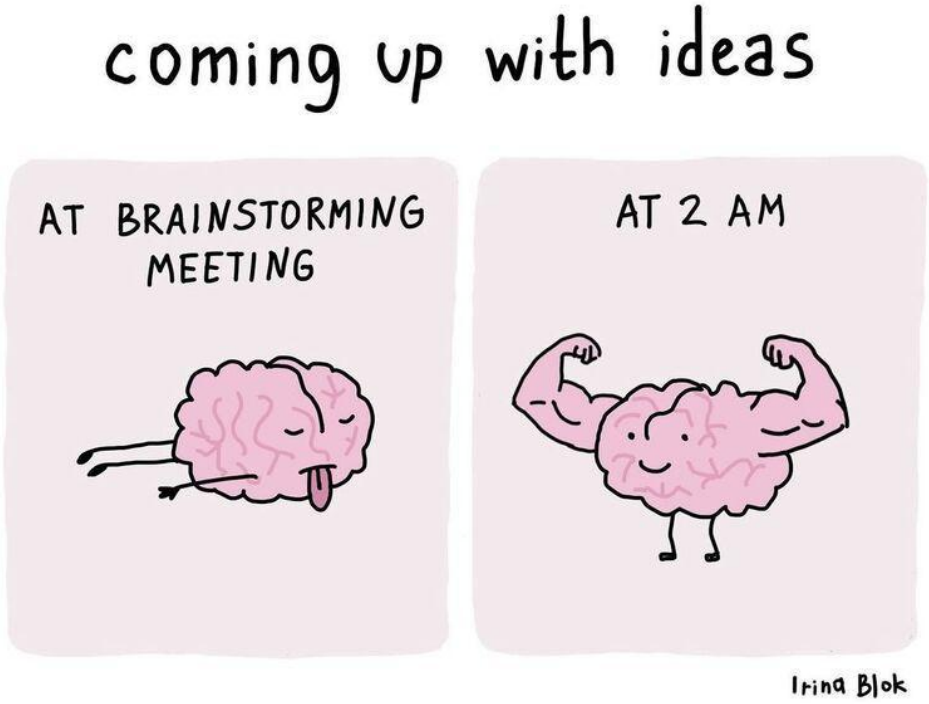
Brainstorming ☺

FAST 2025

True Sigmas Always Brainstorm

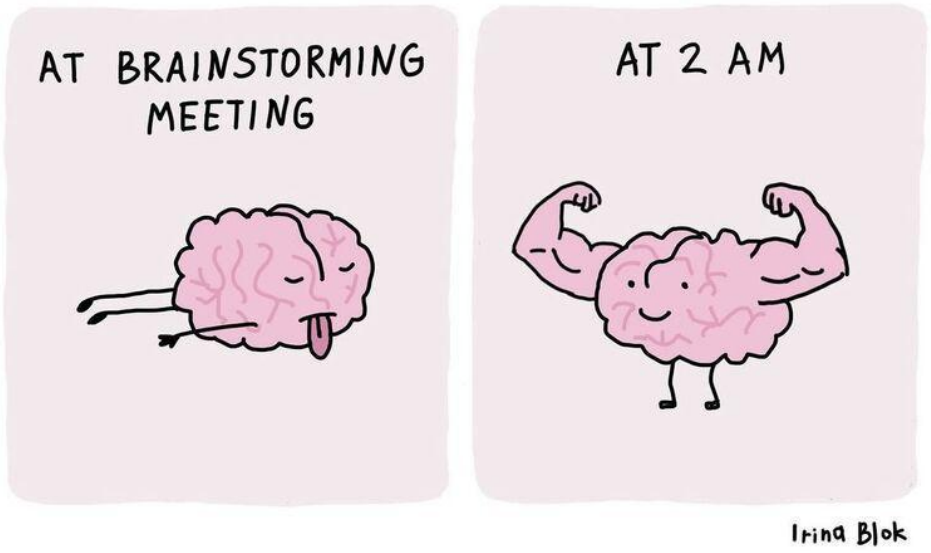
What is brainstorming?

What is brainstorming?

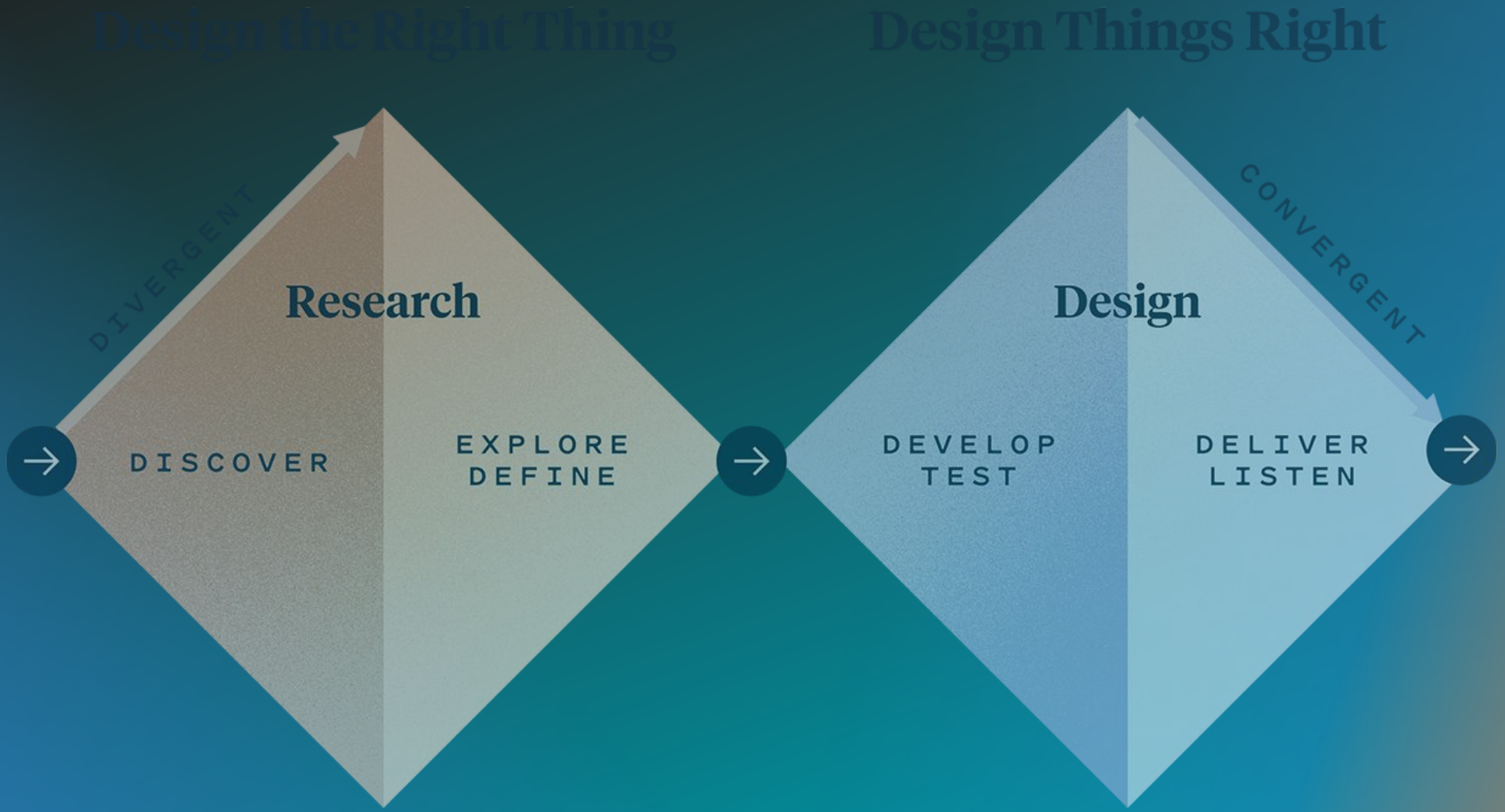


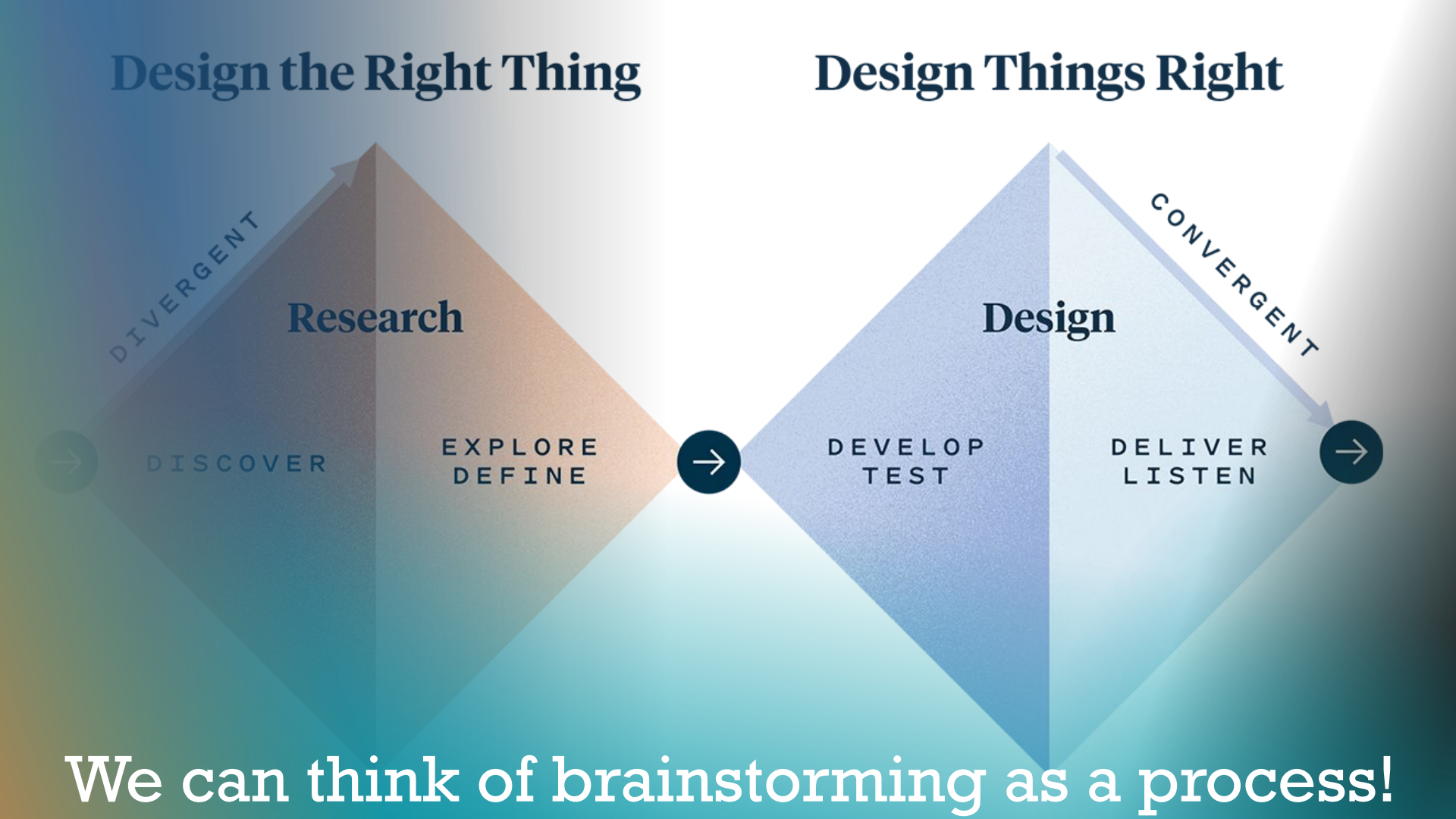
What is brainstorming?

Brainstorming is also more than just coming up with ideas

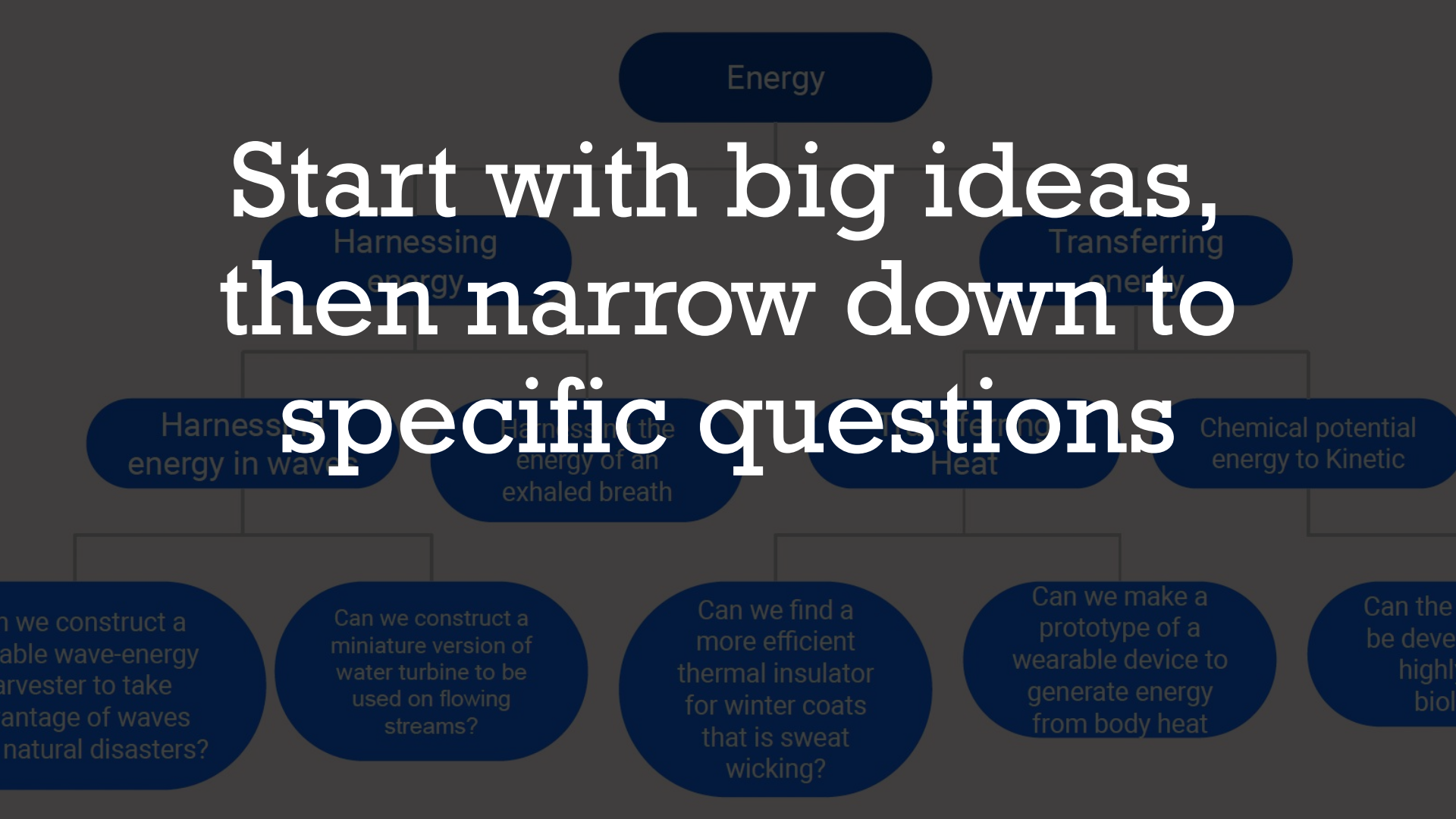


maestro


Design the Right Thing
Design Things Right
DIVERGENT
Research
DISCOVER
EXPLORE
DEFINE
Design
DEVELOP
TEST
DELIVER
LISTEN
CONVERGENT

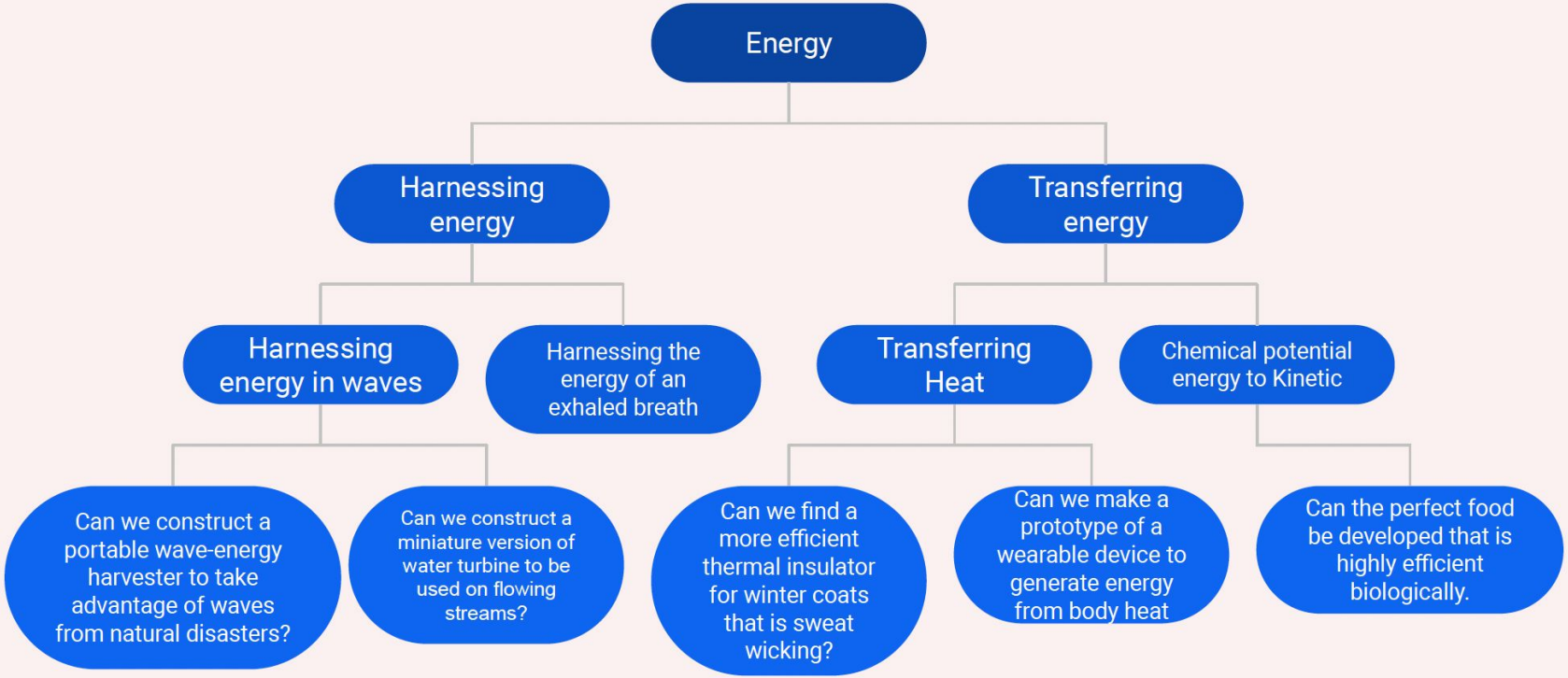


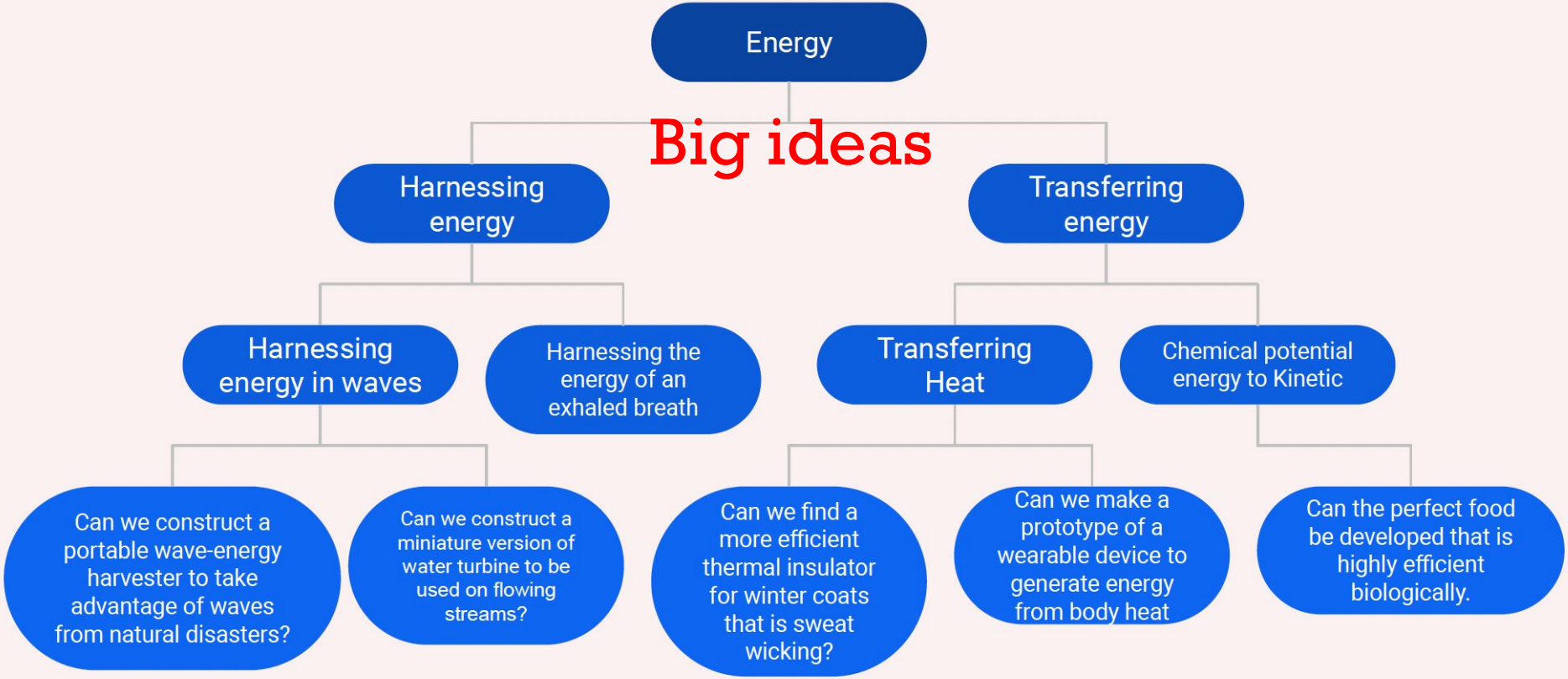
We can think of brainstorming as a process!

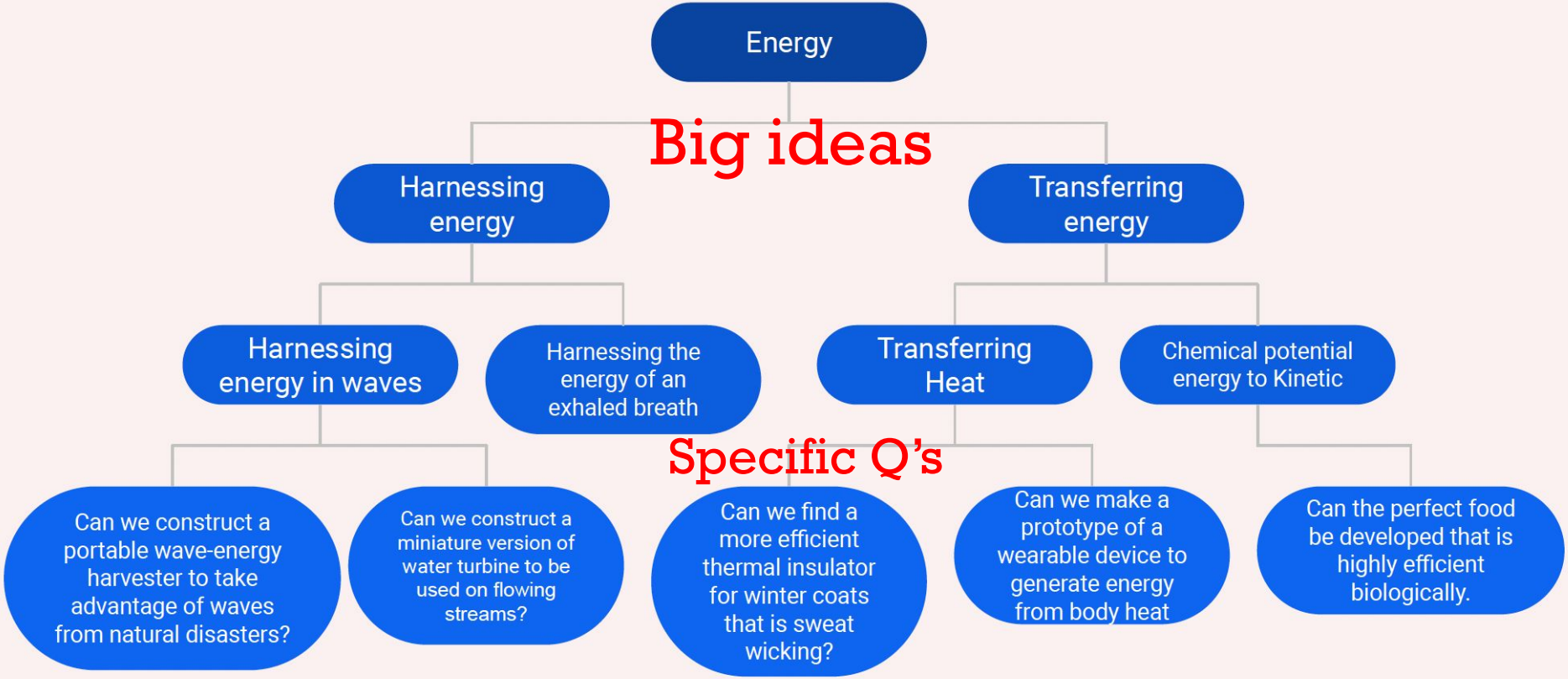


Start with big ideas, then narrow down to specific questions

What does this look like in FAST?




Energy
Big ideas
Harnessing energy
Transferring energy
Harnessing energy in waves
Harnessing the energy of an exhaled breath
Transferring Heat
Chemical potential energy to Kinetic
Can we construct a portable wave-energy harvester to take advantage of waves from natural disasters?
Can we construct a miniature version of water turbine to be used on flowing streams?
Can we find a more efficient thermal insulator for winter coats that is sweat wicking?
Can we make a prototype of a wearable device to generate energy from body heat
Can the perfect food be developed that is highly efficient biologically.


Energy
Big ideas
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Transferring Heat
Chemical potential energy to Kinetic
Specific Q's
Can we construct a portable wave-energy harvester to take advantage of waves from natural disasters?
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Can the perfect food be developed that is highly efficient biologically.

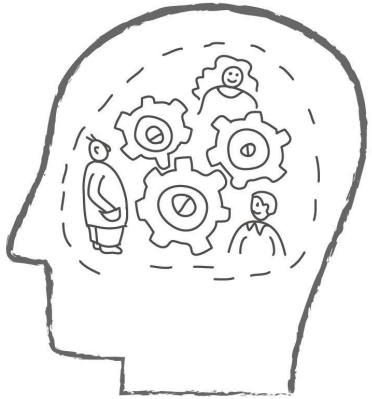
Let's practice

Think of an interesting topic

Share one idea with the group

Can a different person add a related thought?

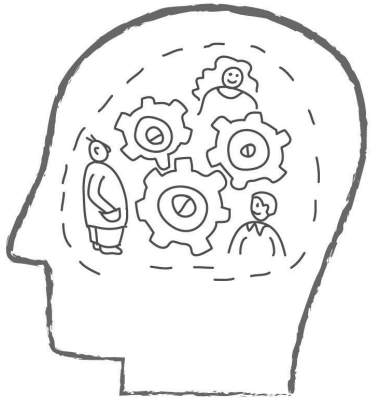
MY BRAIN VS. GROUPTHINK



MY CREATIVE
BRAIN WHEN
LEFT ALONE

MY CREATIVE
BRAIN DURING
GROUPTHINK

MY BRAIN VS. GROUPTHINK



MY CREATIVE BRAIN WHEN LEFT ALONE

MY CREATIVE BRAIN DURING GROUPTHINK

Try your best in our group activity!

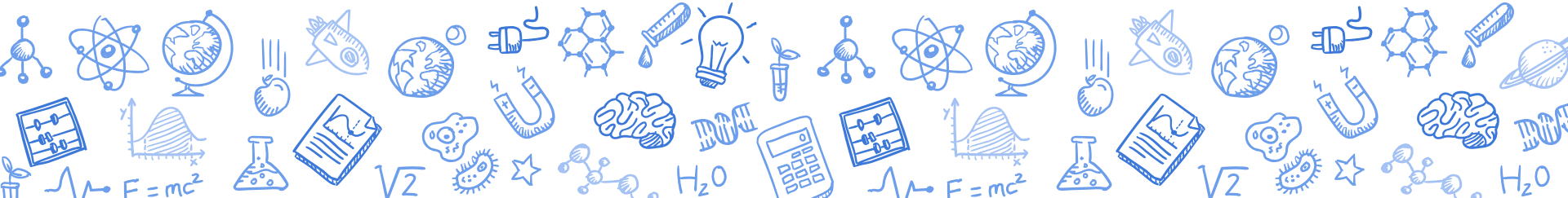
Tips

- Start with a respectful and inclusive environment
- Avoid planning a solution from the start
- Don’t put too much pressure on finding the best idea right away
- No need to shoot down ideas at this stage

Brainstorming Activity

- Get into small groups - mix of students and mentors
- Write down all things you are interested in (hobbies, interests, side projects, extracurriculars)
- Try “webbing” out more specific topics within those things that spark interest
- After ~5-10 minutes, share your concept map with the group
    - Try to ask leading questions to the sharer to help them think about possible ideas

GOAL: Think about possible areas you could work on for your FAST project!



Science Fair Intro!

Overview

- What is Science Fair?? 🥽 🧠
- Why you should participate 🔬 🧪
- Examples from previous years 👩‍🔬🧑‍🔬👨‍🔬
- Timeline and sign up! 📅

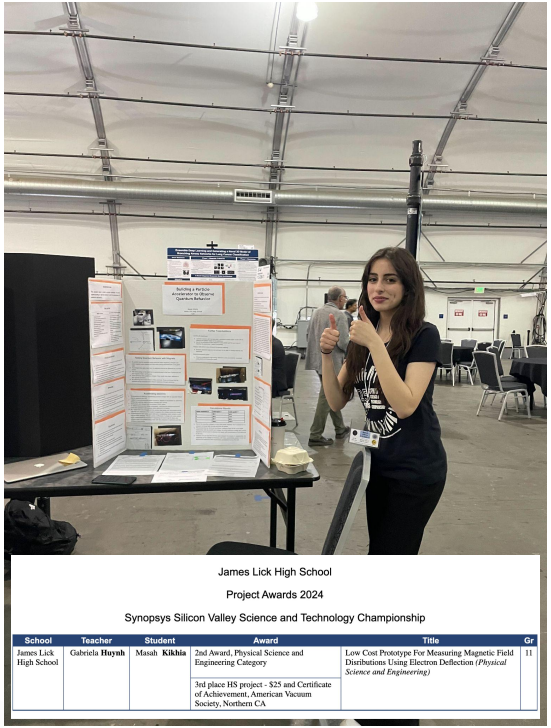
What is Science Fair?

- The Synopsys Science Fair showcases the research projects of high school students from Santa Clara County
- Students who register will work on projects over the school year (**same as FAST!**) and present at the science fair in March
- **All students are welcome**! Anyone grades 9-12, you don't need to already have an idea to participate!
- Chances to win big awards, money, and a trip to the International or California Science Fair (**great for college apps!**)
-

Why you should join?

- **Everyone is welcome**! All grades, no prior experience needed!
- Almost exact same thing as your FAST project! **No additional work needed**, just submit your FAST project to them!
- Chances to win **big awards, money**, scholarships, recognition from companies, money, and trips to ISEF/CSEF 👀 (college apps!)
- Great experience presenting your research outside of FAST! There may be professors, company researchers, important people 👀

Examples from previous years!

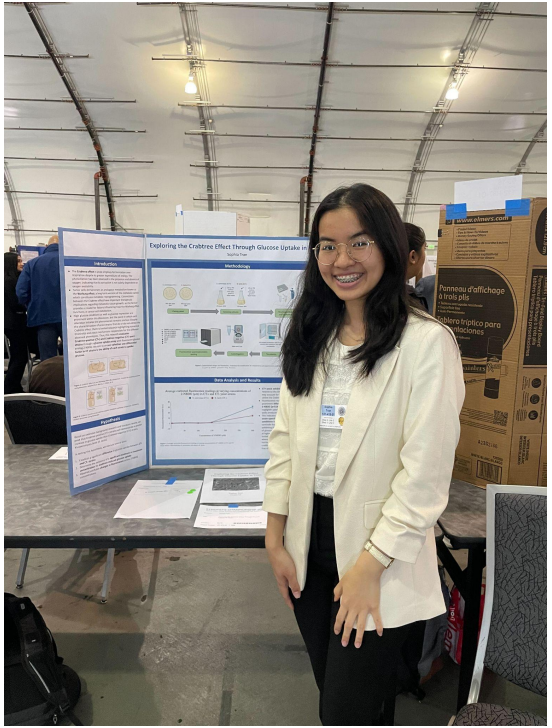


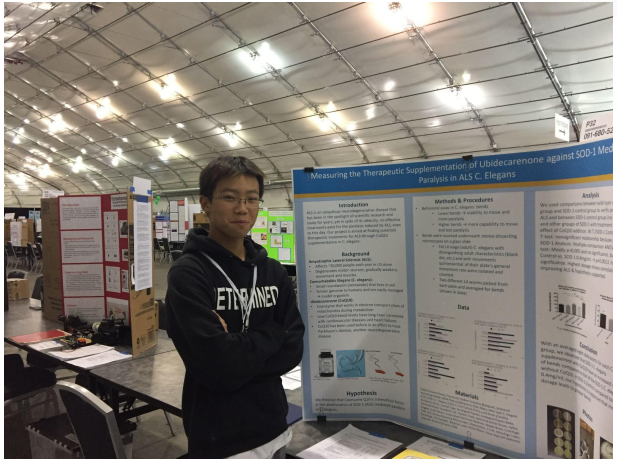
James Lick High School

Project Awards 2024

Synopsys Silicon Valley Science and Technology Championship

School	Teacher	Student	Award	Title	Gr
James Lick High School	Gabriela **Huynh**	Masah **Kikhia**	2nd Award, Physical Science and Engineering Category	Low Cost Prototype For Measuring Magnetic Field Distributions Using Electron Deflection *(Physical Science and Engineering)*	11
			3rd place HS project - $25 and Certificate of Achievement, American Vacuum Society, Northern CA		





(Luke in 2019, one of the Andrew Hill mentors)

[Melanie]

Timeline: Synopsys Science Fair

9/27 — TODAY

Mentor matching! Intro to science fair! Decide if you want to do science fair.

10/25 — Next Session

Come up with project ideas and start working on filling out forms for project submission!

11/1 — Next Next Session

Finish up project forms and submit to Synopsys. Last session to get help from mentors before the deadline!

11/14 — Pre-approval Deadline

Deadline for all projects that require pre-approval! More information about what this means at next meeting!

1/12 — Final Deadline

Deadline for all projects, including non pre-approval ones.

Join science fair!

Fill out this QR code if you're interested at all!

https://tinyurl.com/fastsciencefair