

Prelude

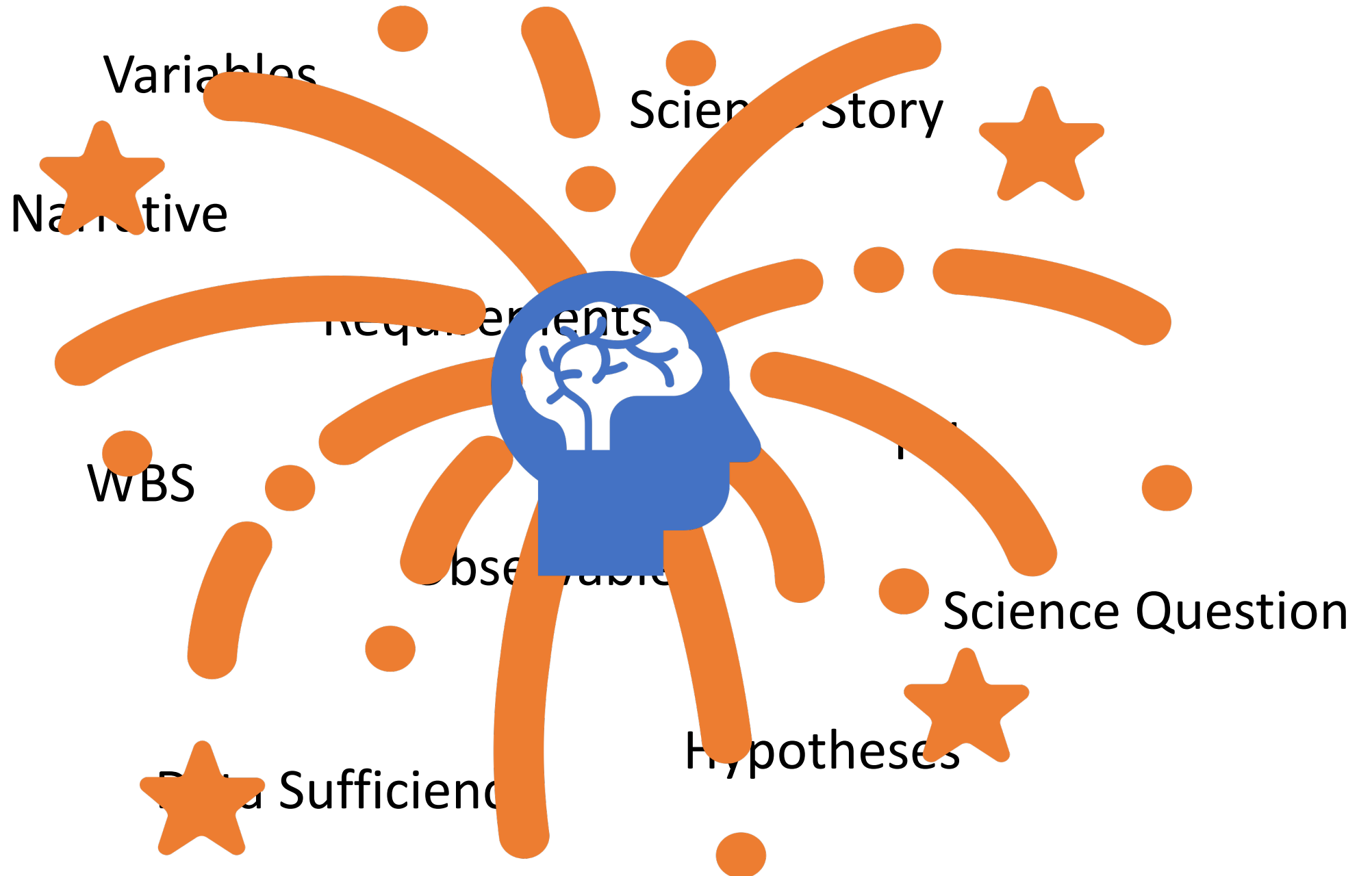


to the Science Traceability Matrix (STM)

*(and really, to a lot of the things you'll learn during
the next two weeks...)*

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NASA Goddard Space Flight Center
PI Launchpad 2021
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Variables

Science Story

Narrative

Requirements

OR...

WBS

Obs

Science Question

Hypotheses

Data Sufficiency

Variable

Narrative

Data Sufficiency

Research Story

Research Question

TRI

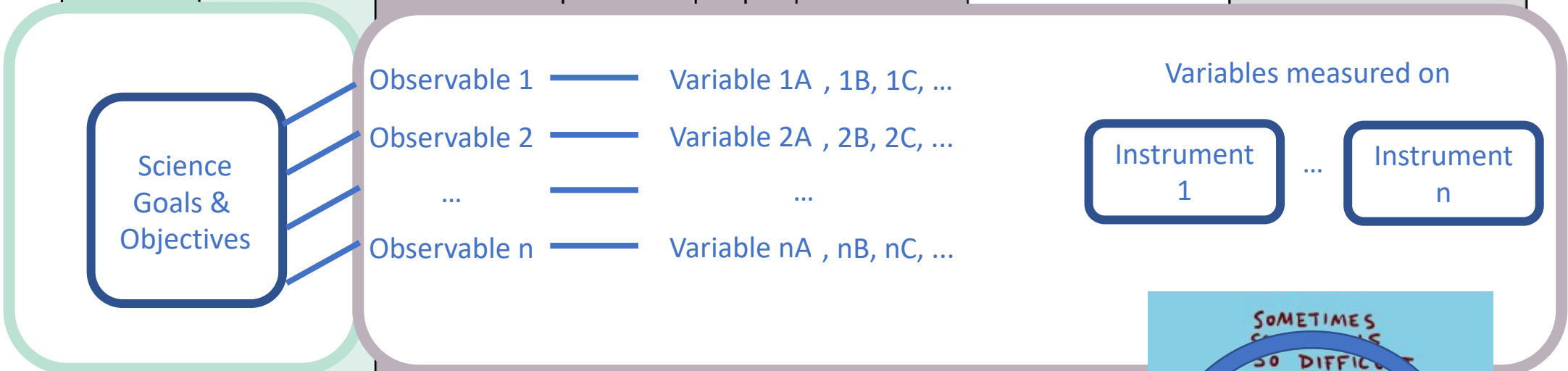
Science Traceability Matrix

Hypotheses

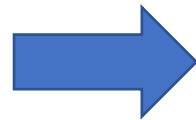




1. Science Goals	2. Science Objectives (SO #.#)	Scientific Measurement Requirements		Instrument Requirements			8. Top-Level Mission Functional Req's
		3. Physical Parameters	4. Observables	5. Category	6. Threshold Mission	7. Baseline Mission Requirement	

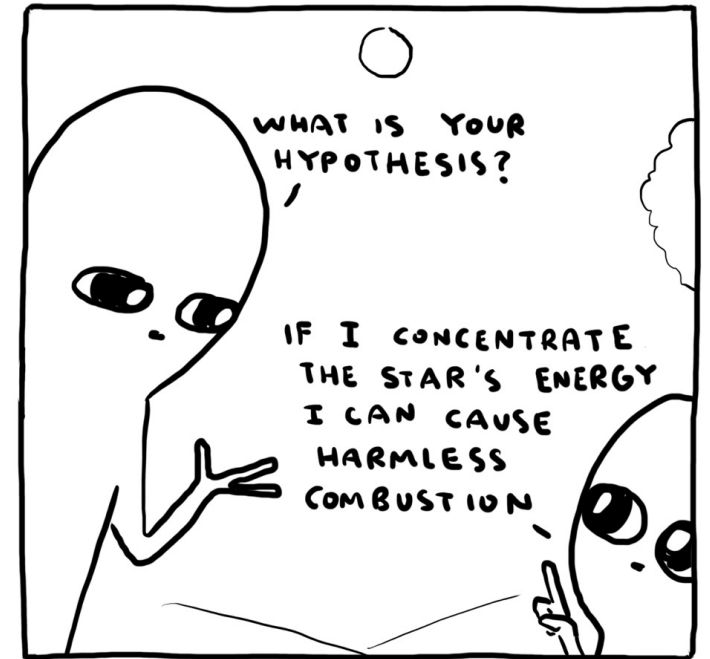
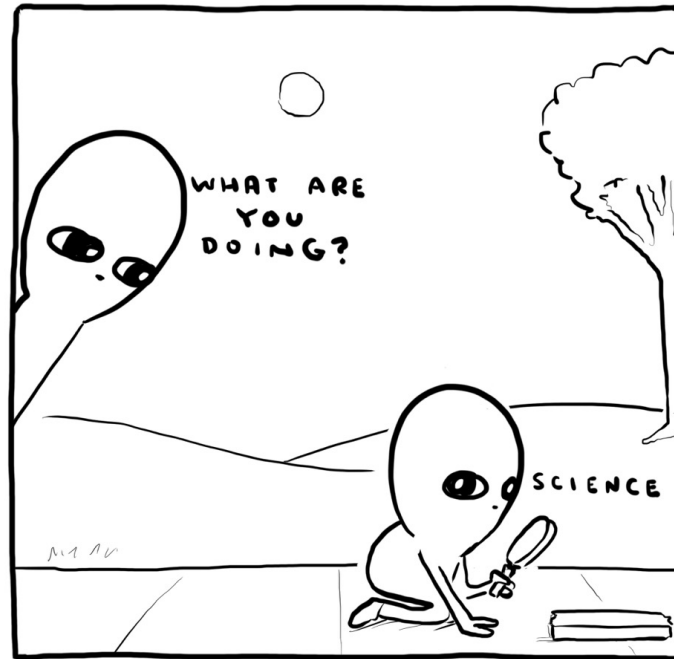
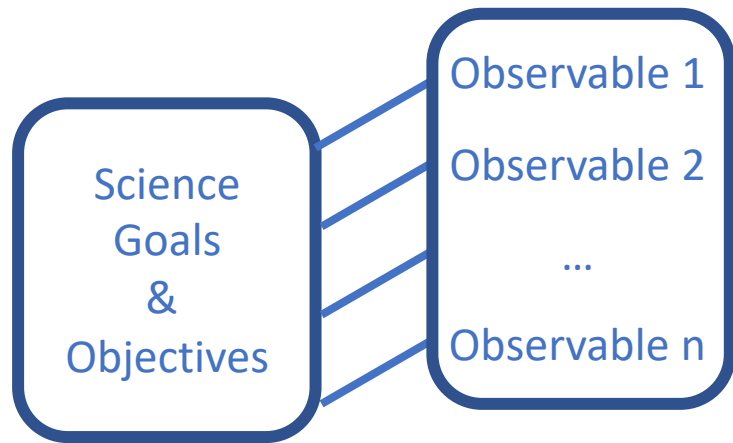


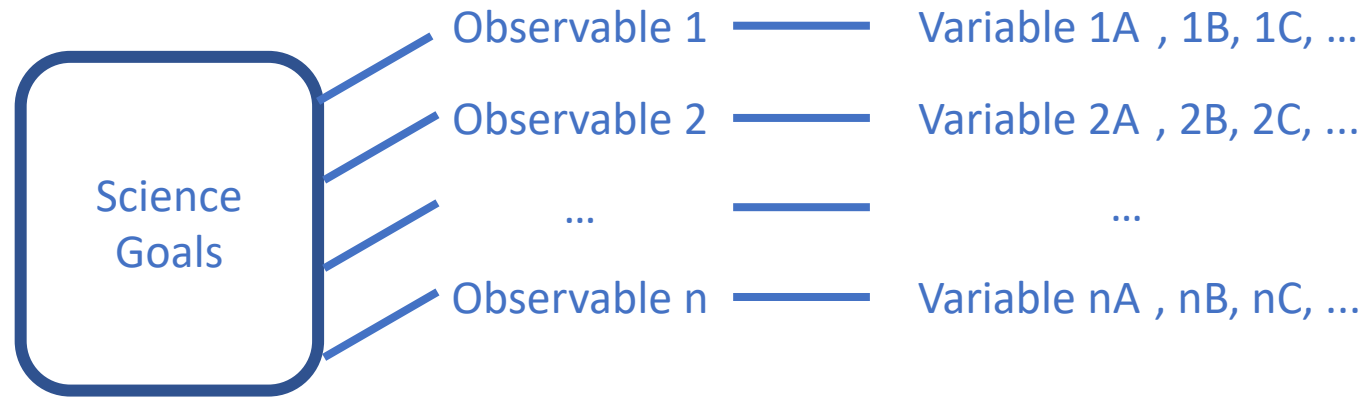
Science
Question

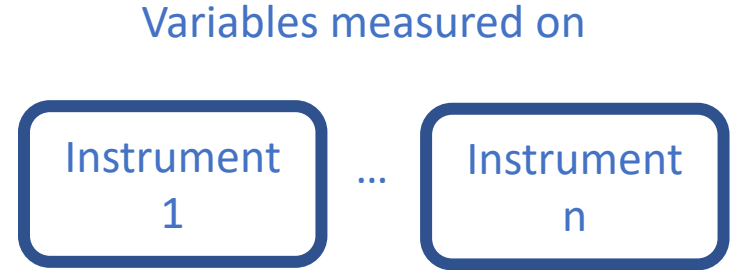
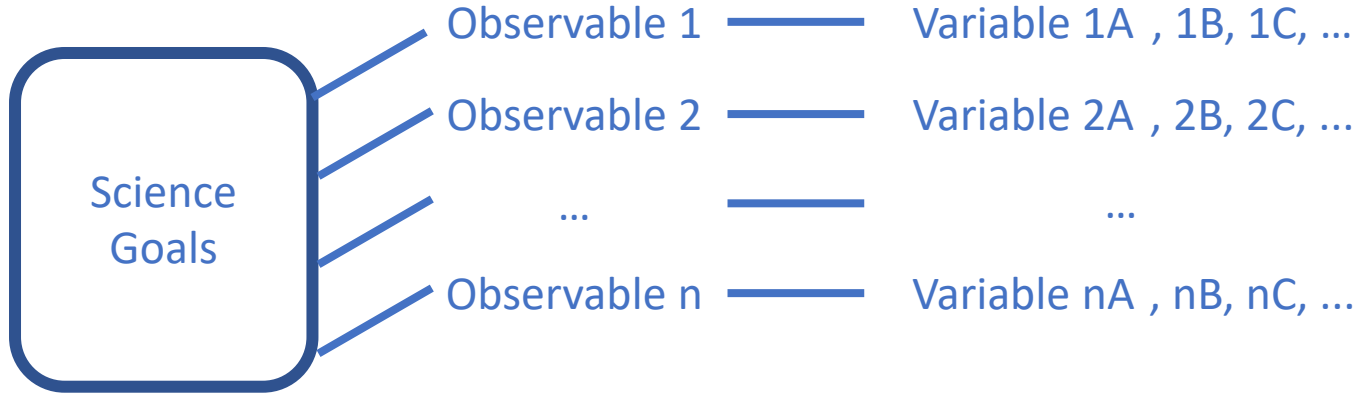


Science
Goals
&
Objectives





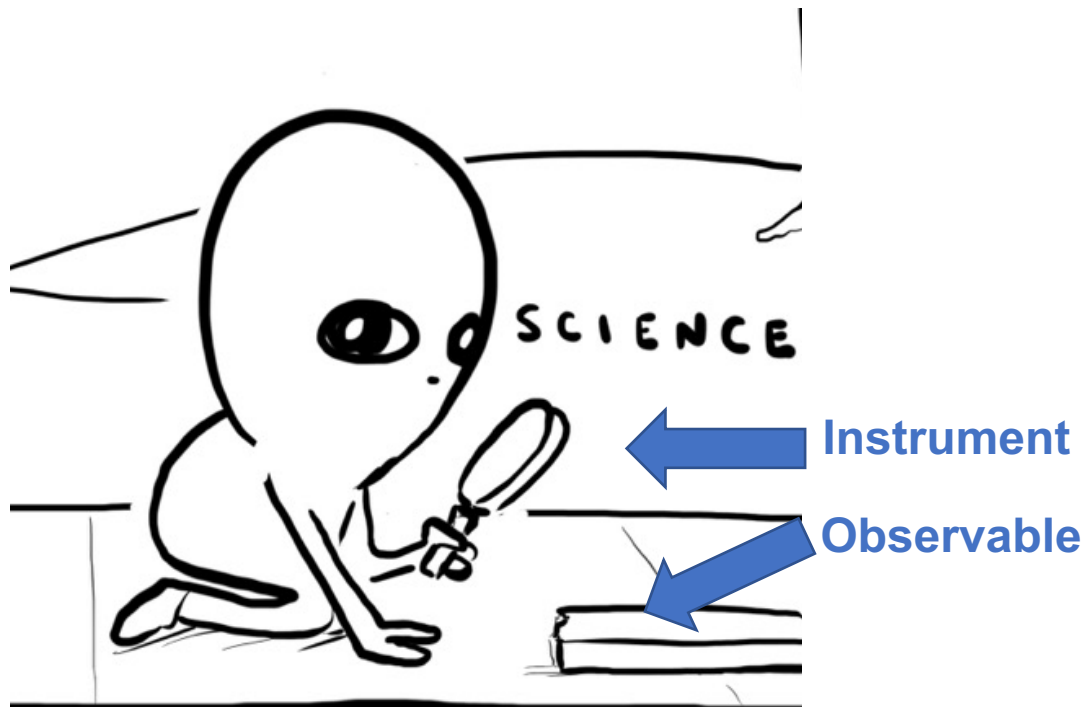


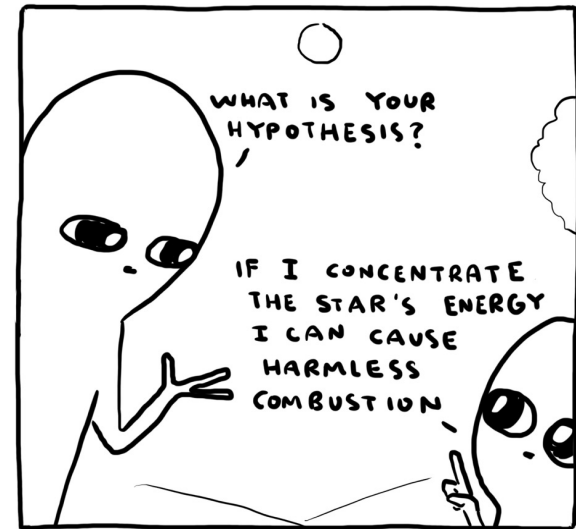
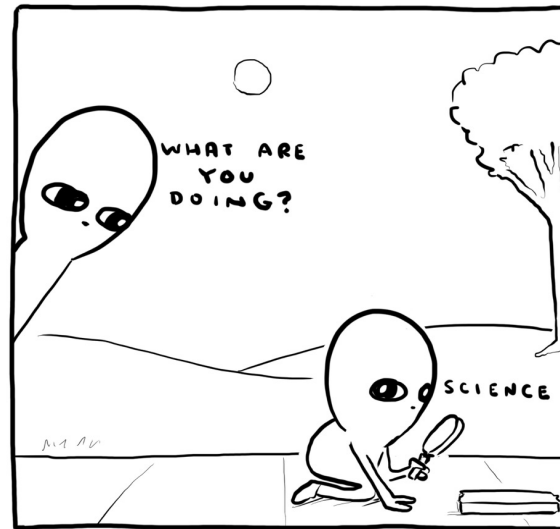
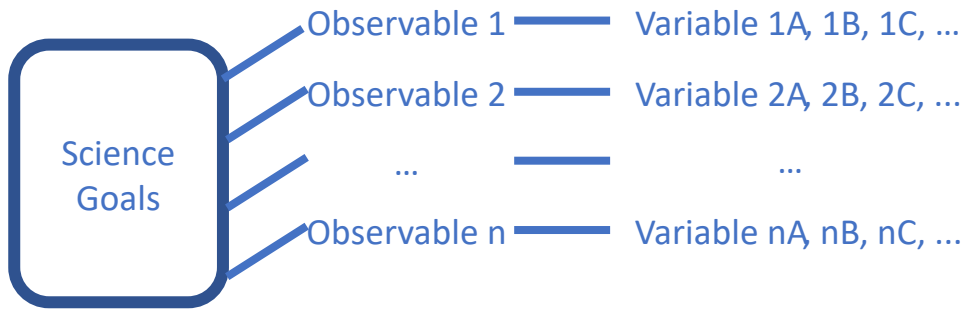


Technology Development & Technology Readiness Levels (TRL)

Data Sufficiency

Risk





Variables measured on



Technology Development & Technology Readiness Levels (TRL)

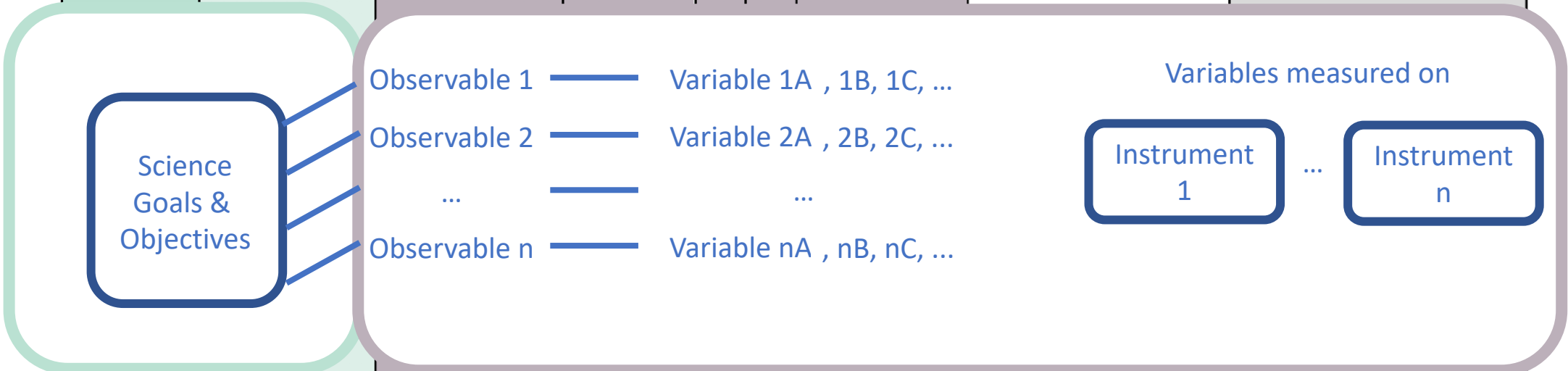


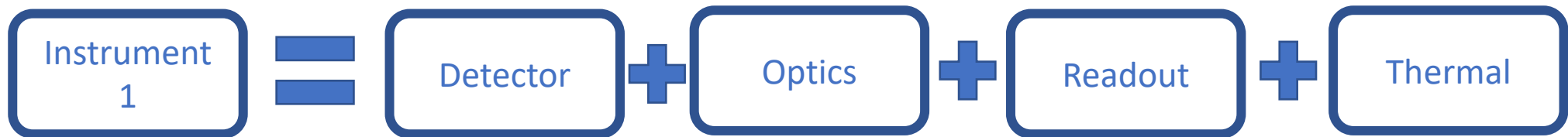
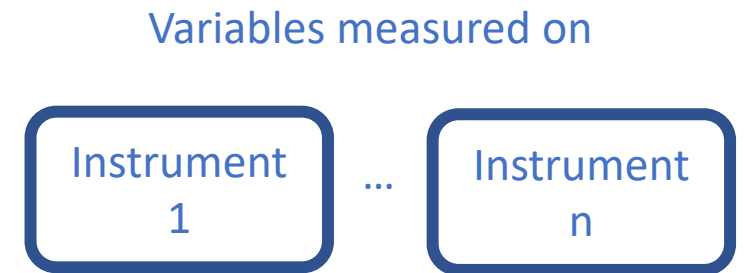
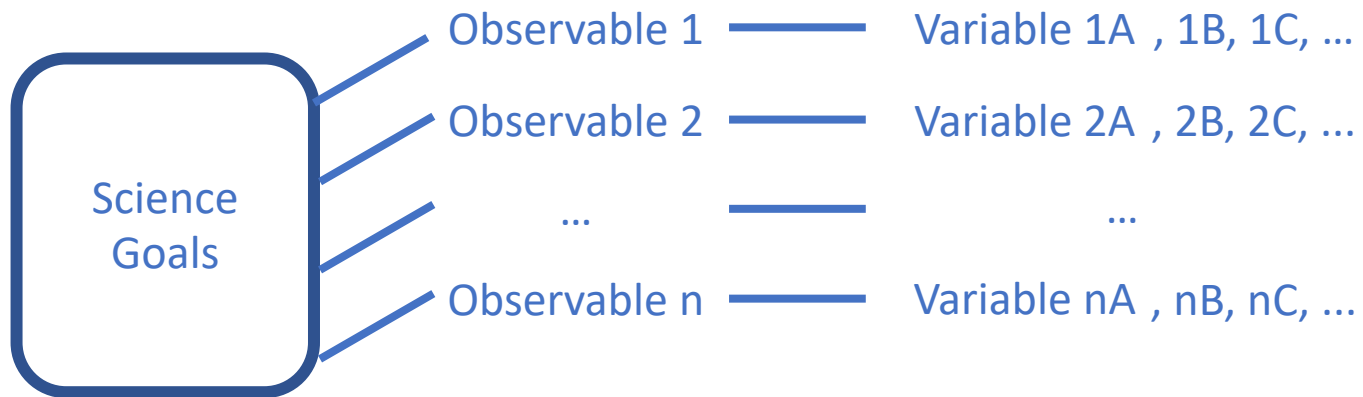
NATHANWPLYE

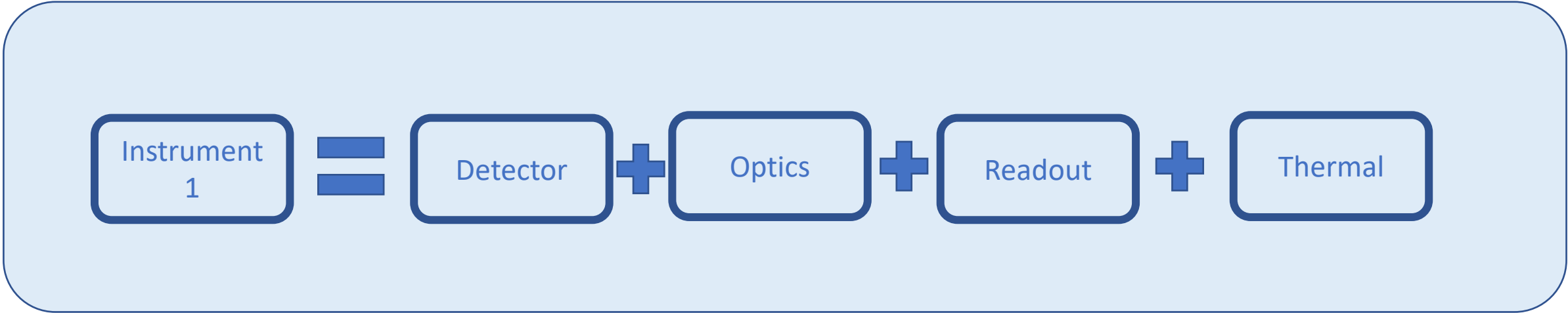
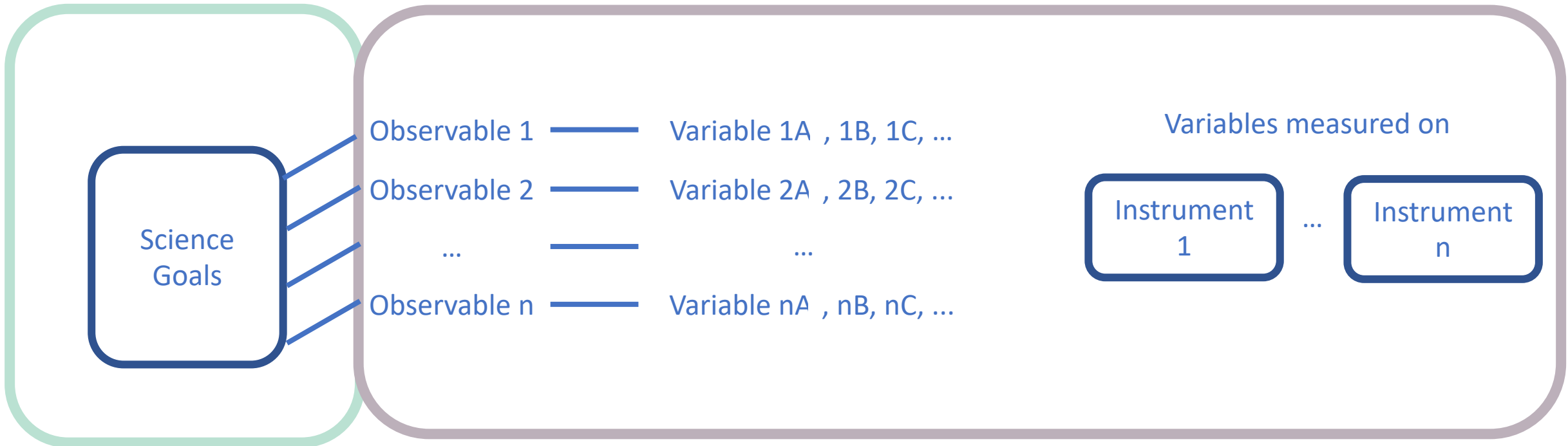
Team Building



1. Science Goals	2. Science Objectives (SO #.#)	Scientific Measurement Requirements		Instrument Requirements			8. Top-Level Mission Functional Req's
		3. Physical Parameters	4. Observables	5. Category	6. Threshold Mission	7. Baseline Mission Requirement	



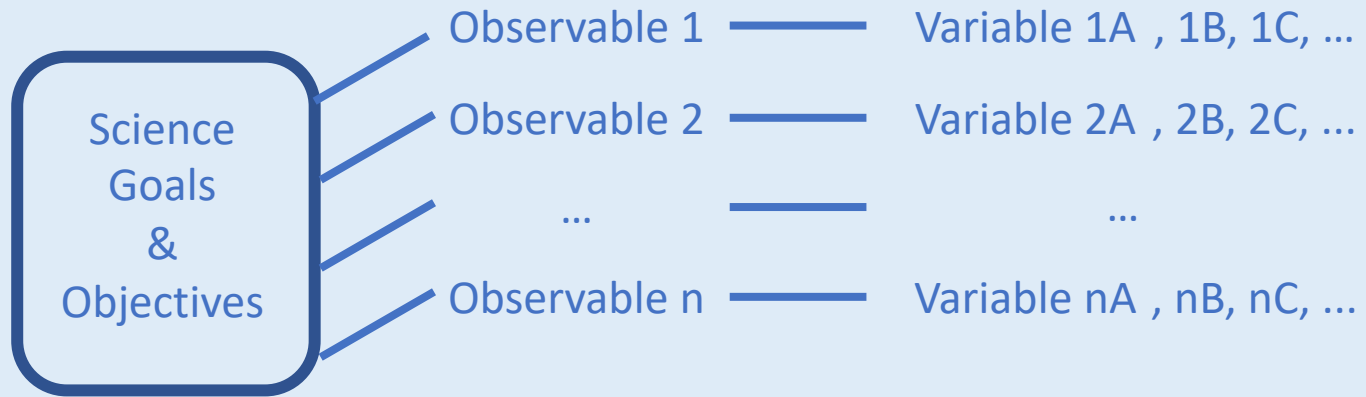






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		<p>You can't always get what you want, but if you try sometimes, you just might find, you get what you need..</p>			<p>I want it all, I want it all, I want it all..</p>		
<div style="border: 1px solid blue; border-radius: 15px; padding: 10px; display: inline-block;"> Science Goals & Objectives </div>		Observable 1	————	Variable 1A , 1B, 1C, ...	Variables measured on <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid blue; border-radius: 10px; padding: 5px;">Instrument 1</div> ... <div style="border: 1px solid blue; border-radius: 10px; padding: 5px;">Instrument n</div> </div>		
Observable 2	————	Variable 2A , 2B, 2C, ...					
...	————	...					
Observable n	————	Variable nA , nB, nC, ...					

Science

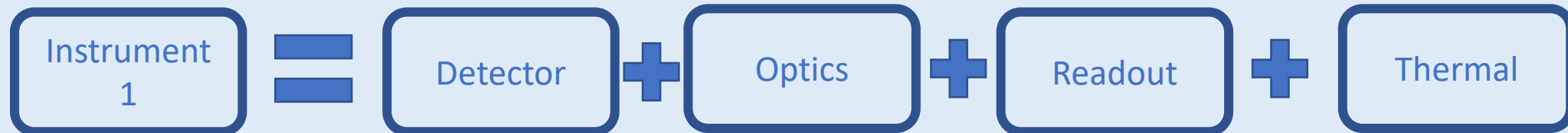


Payload

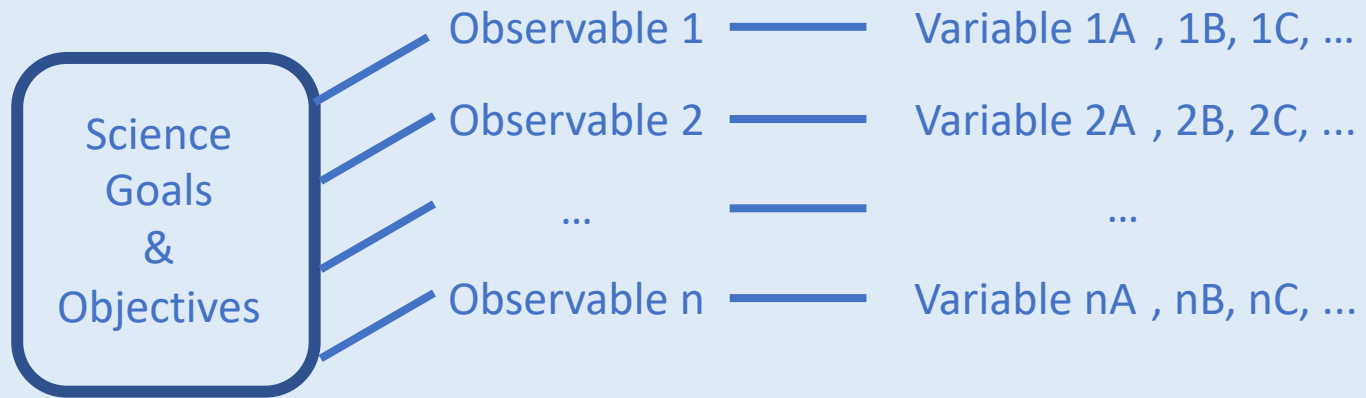
Variables measured on



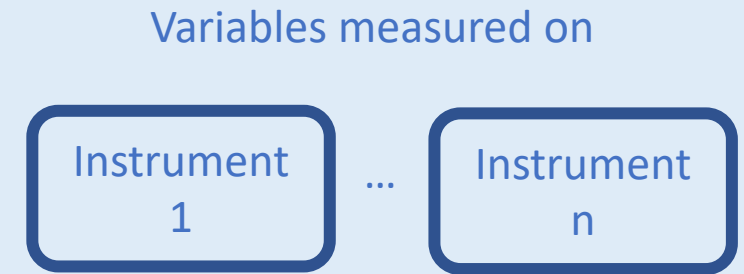
Instrument



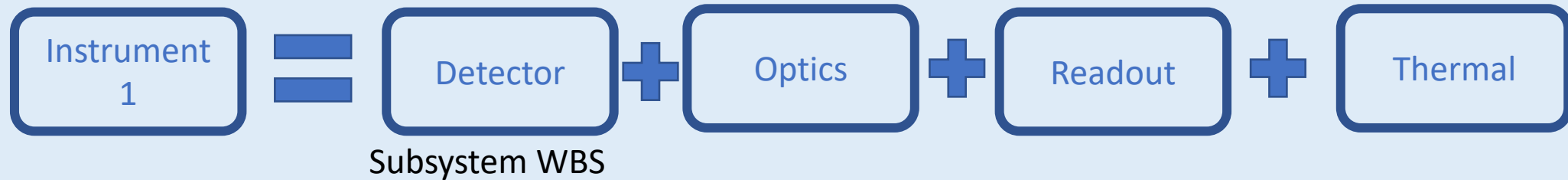
Science Work Breakdown Structure (WBS)

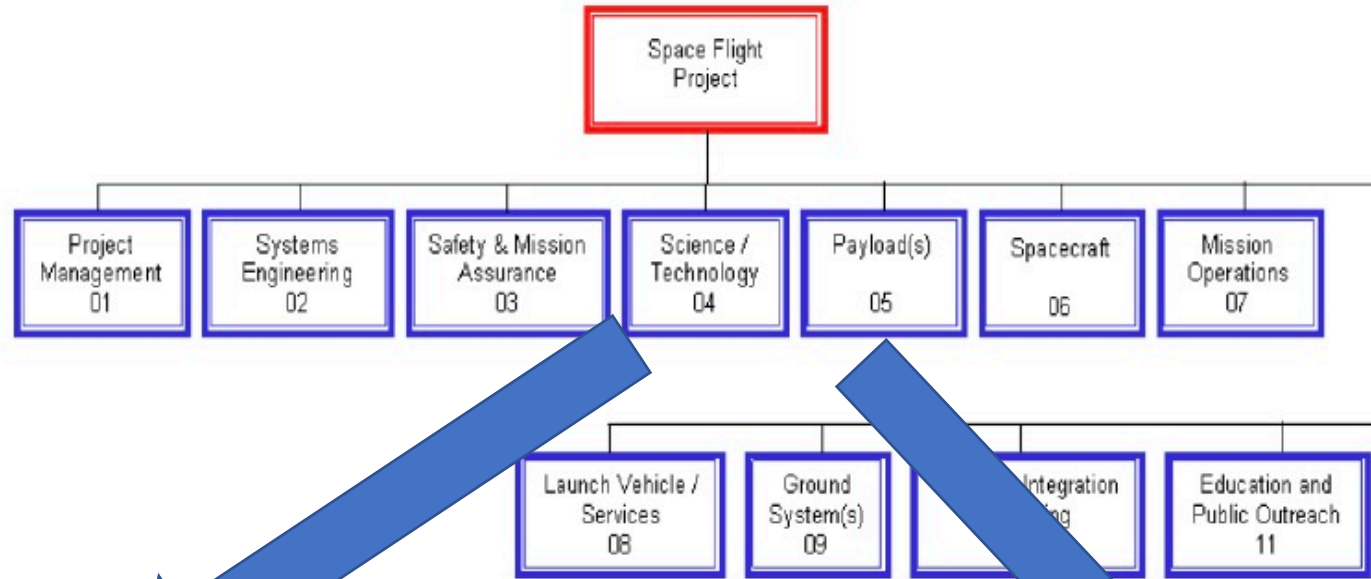


Payload WBS



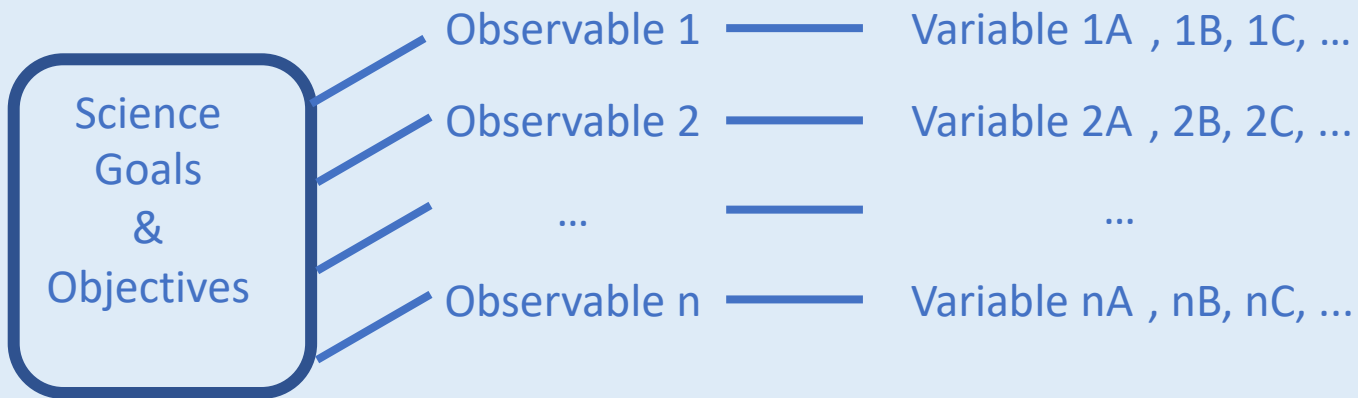
Instrument WBS





Example of a standard space-flight WBS

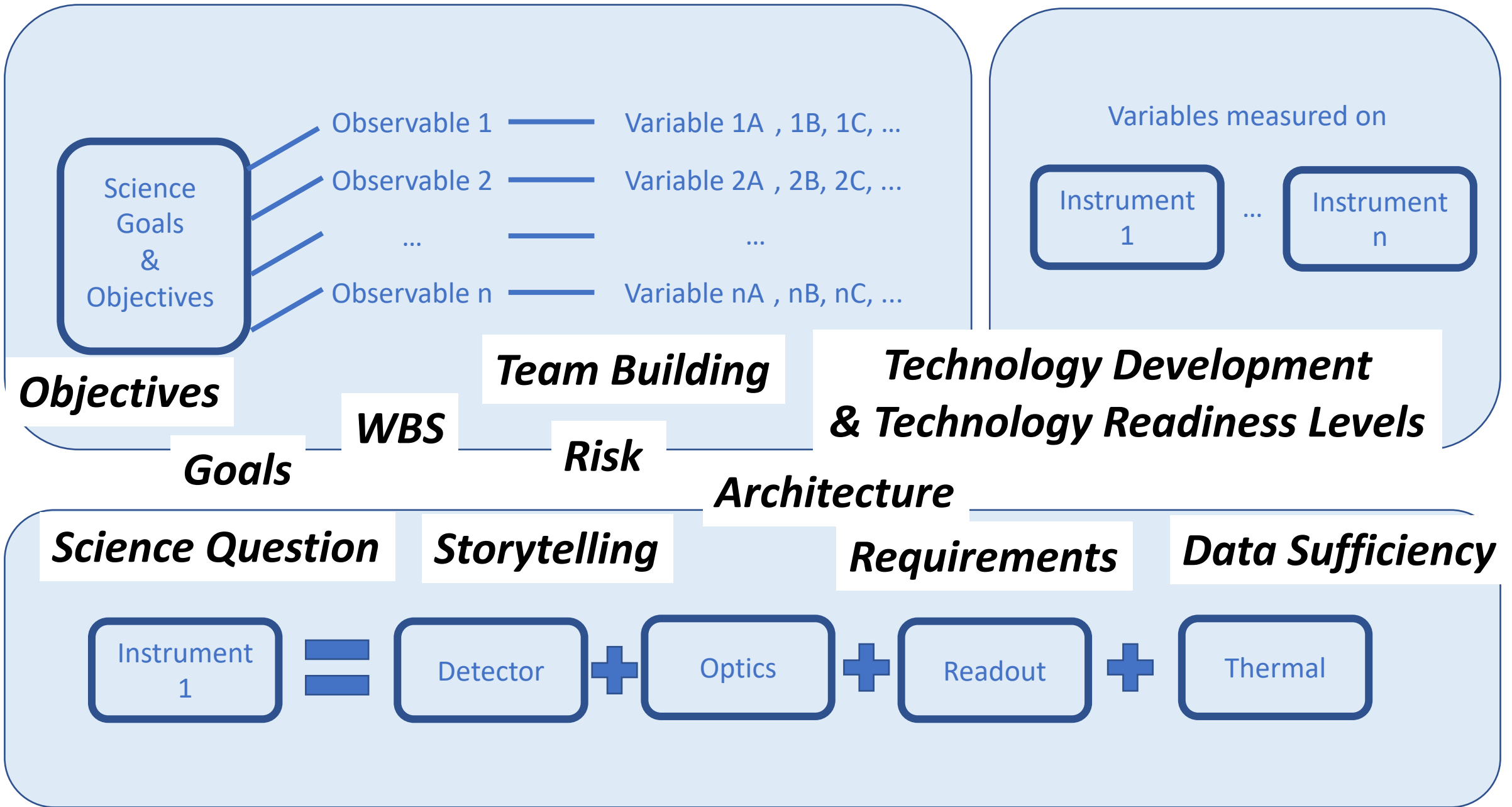
Science Work Breakdown Structure (WBS)



Payload WBS

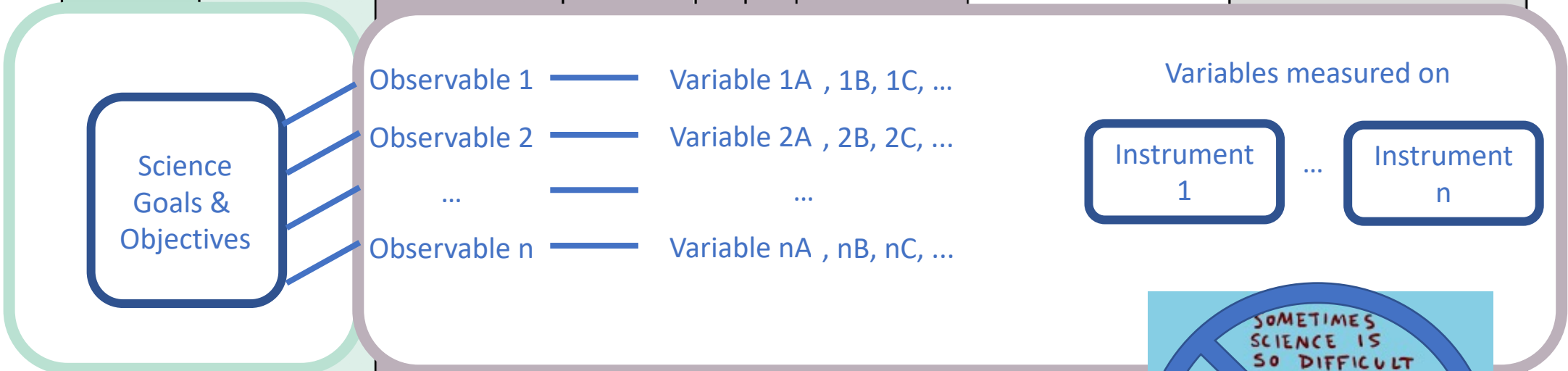
Variables measured on







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Technology Development & Technology Readiness Levels

Risk

Data Sufficiency

Team Building

WBS

Goals

Objectives

Science Question

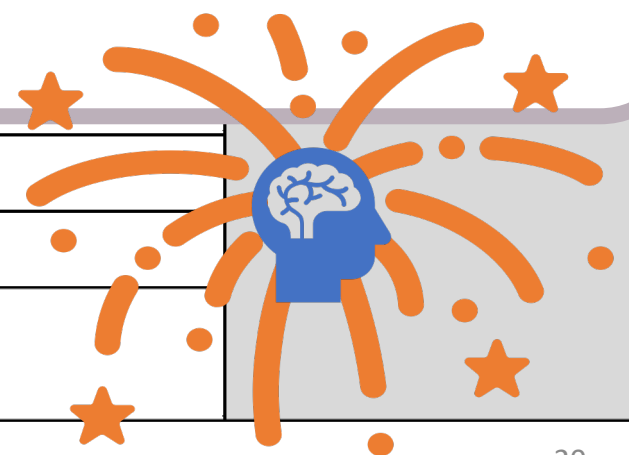
Storytelling

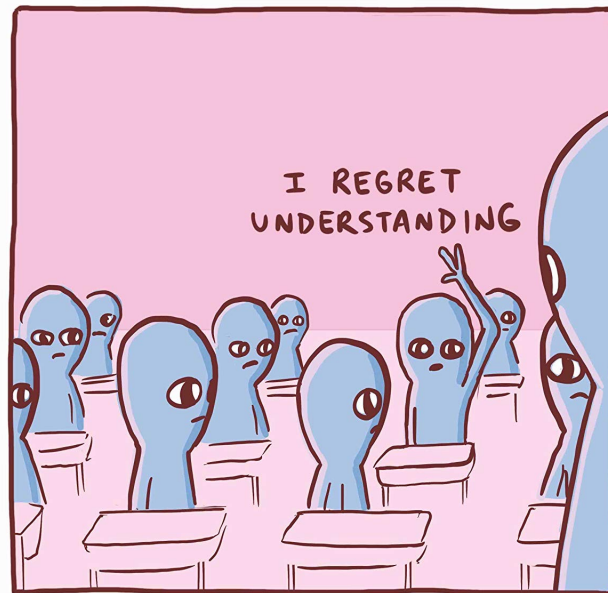
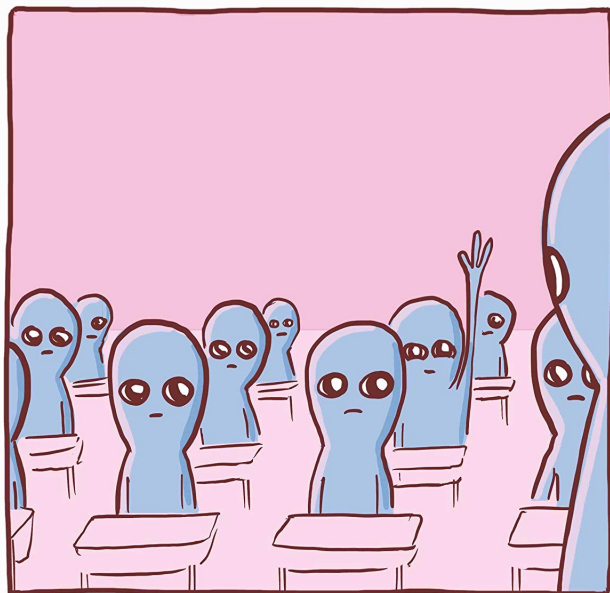
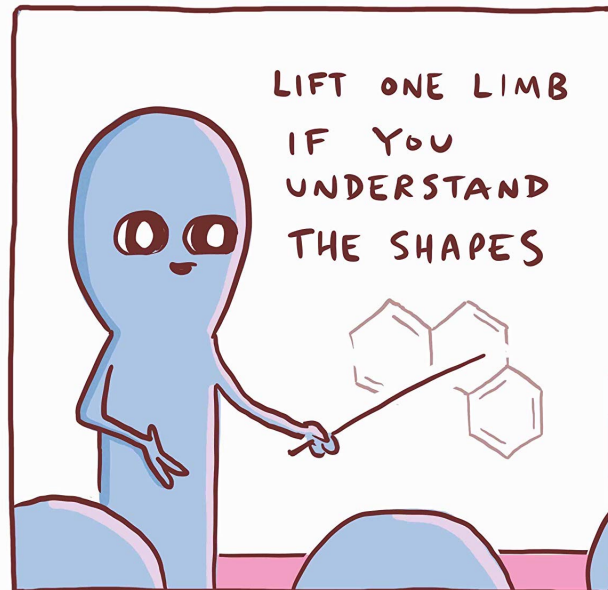
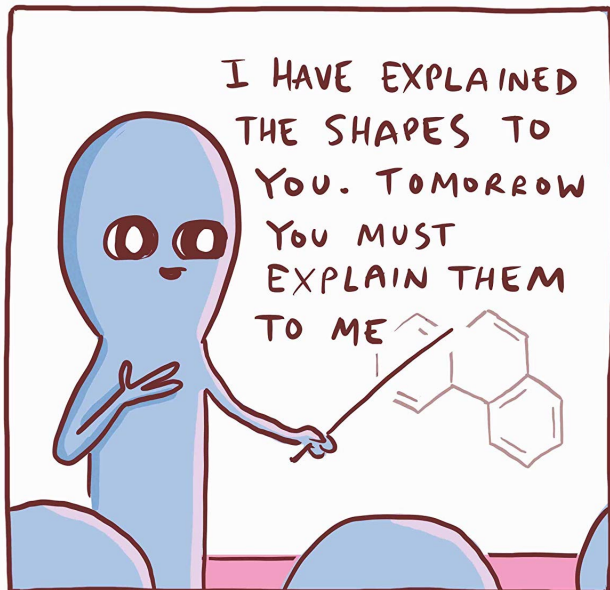
Requirements

Architecture



Variables measured on





...hopefully not!

Questions?

Thank You!

