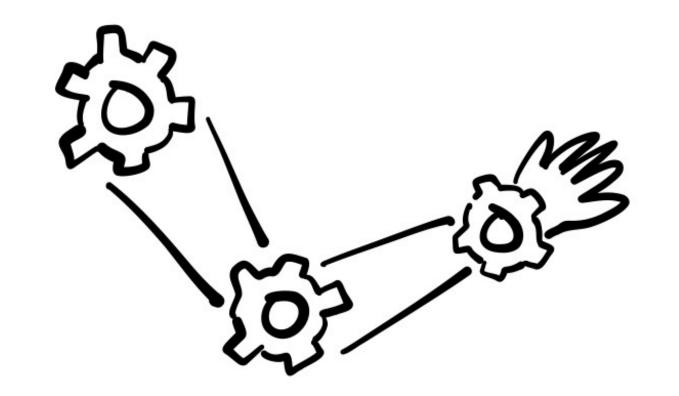
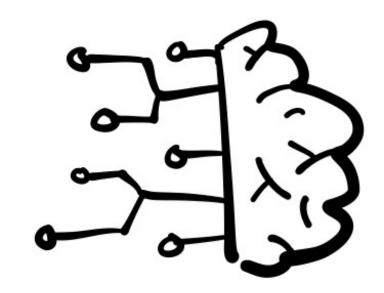
SKETCH IT OUT





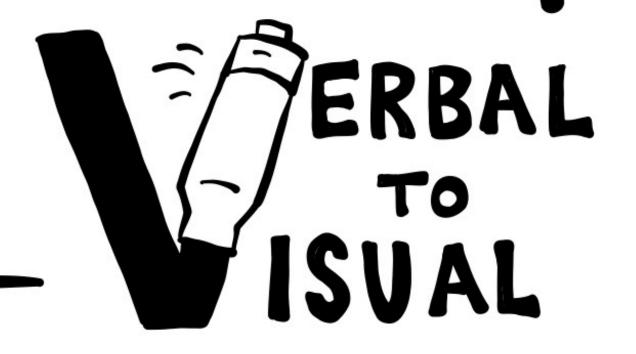


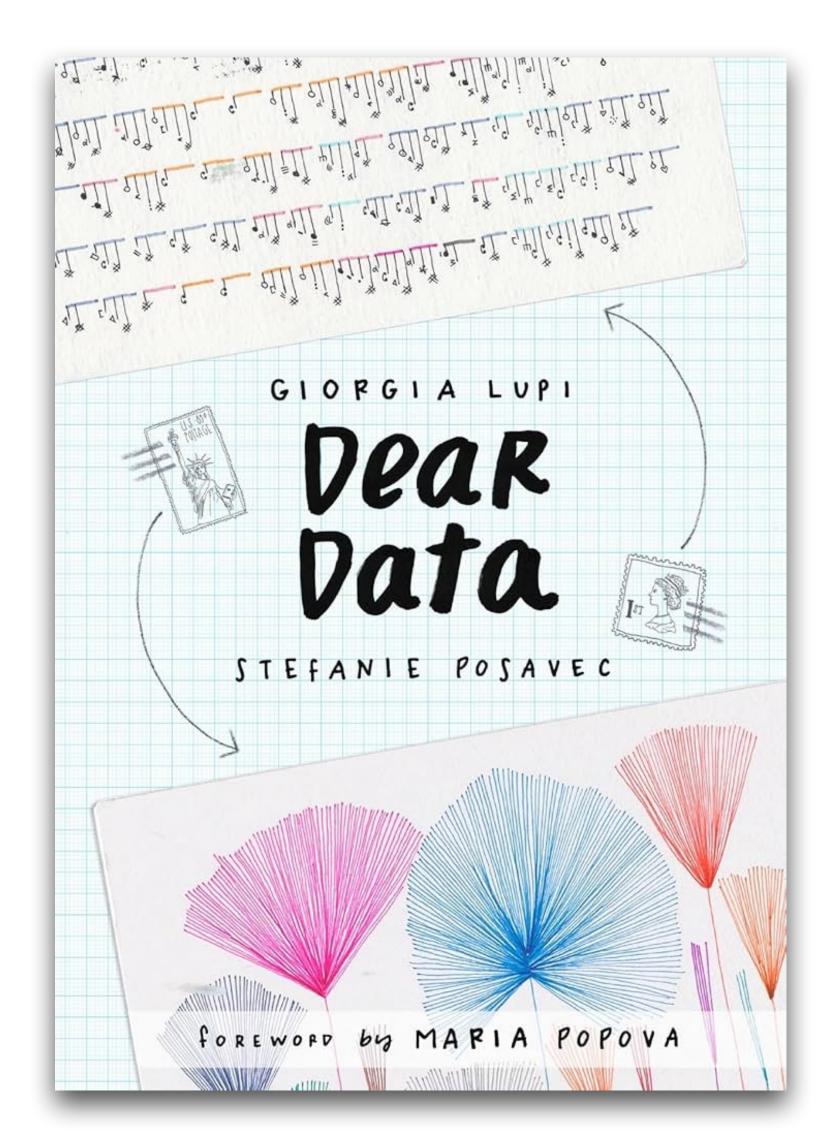
BUILD THE SKILL OF VISUAL THINKING TO SUPPORT YOUR RESEARCH, GRANT PROPOSALS, & PUBLIC COMMUNICATION

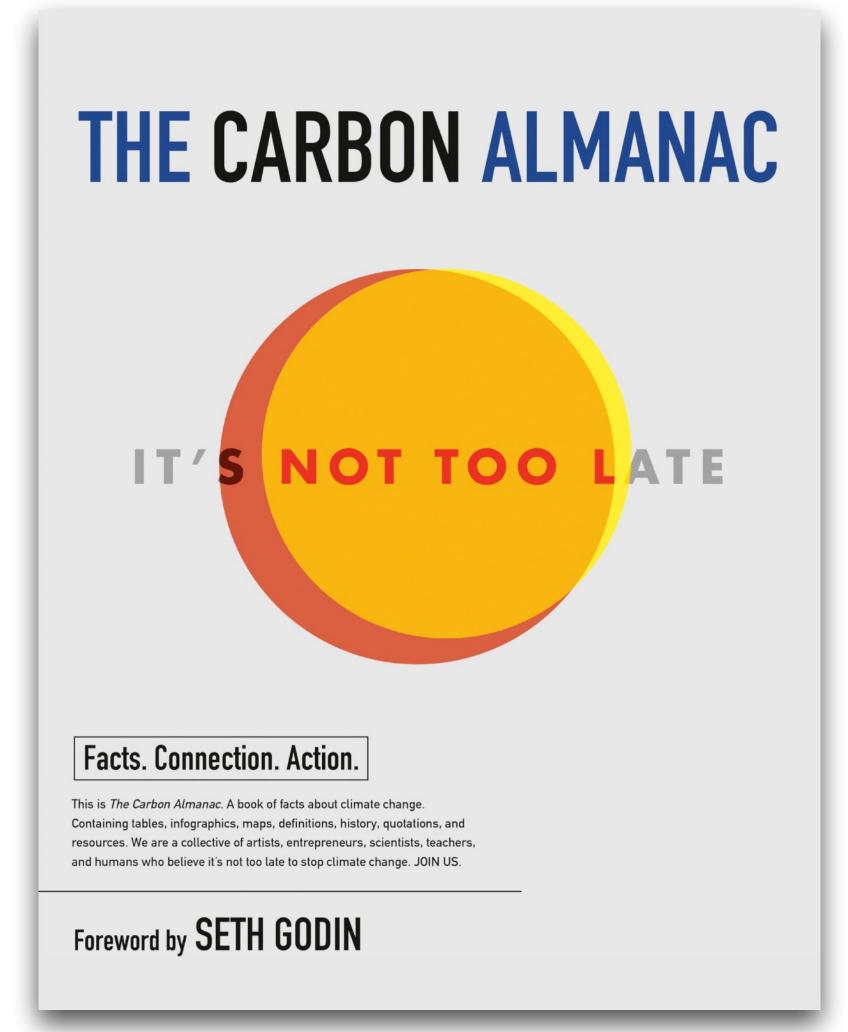


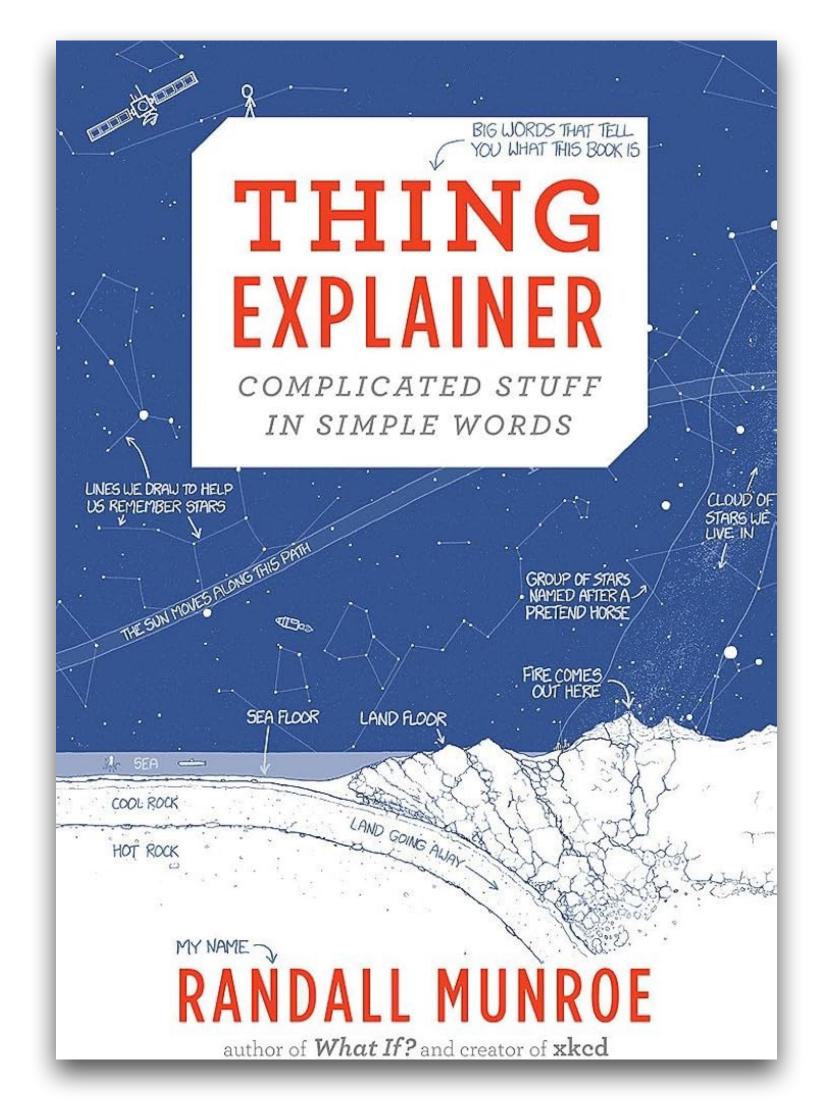
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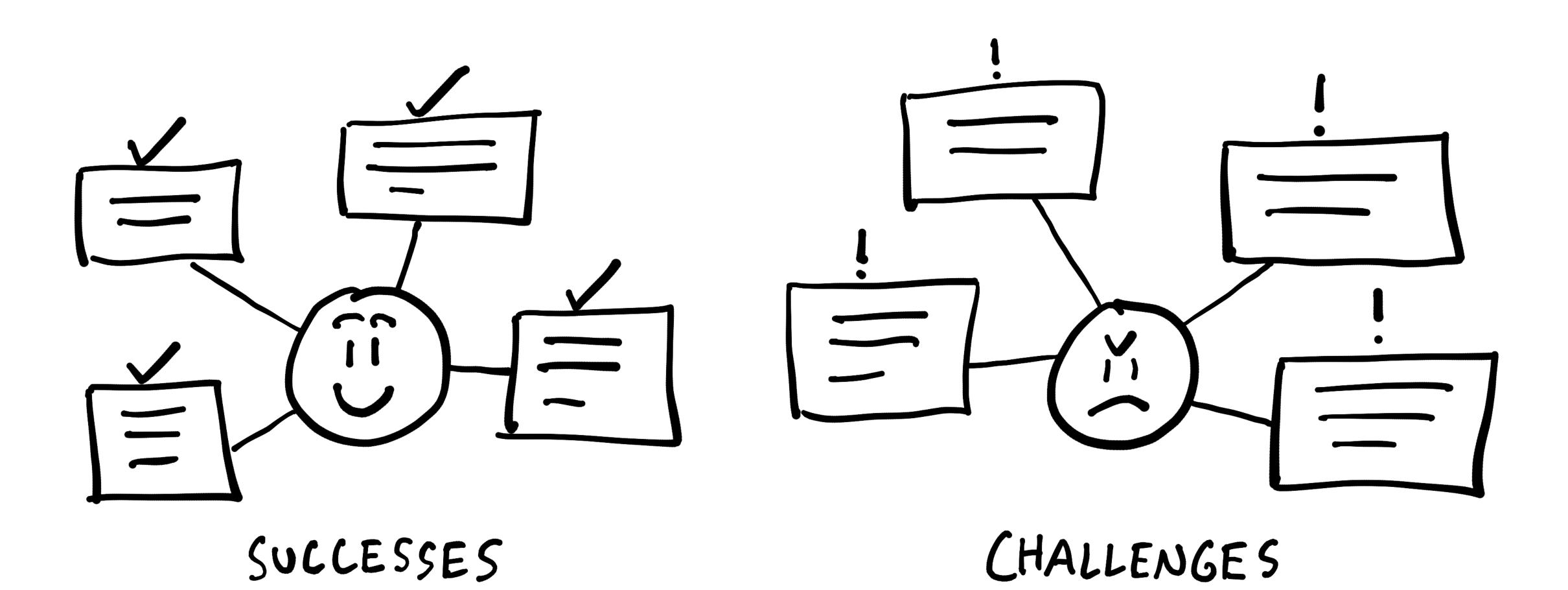




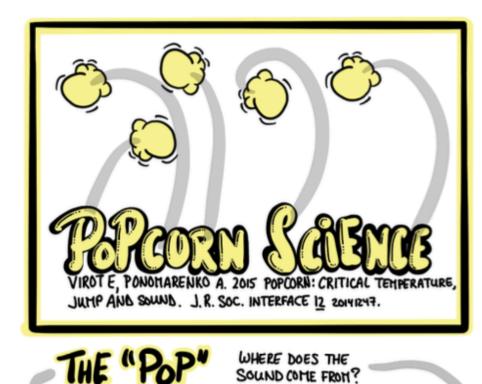




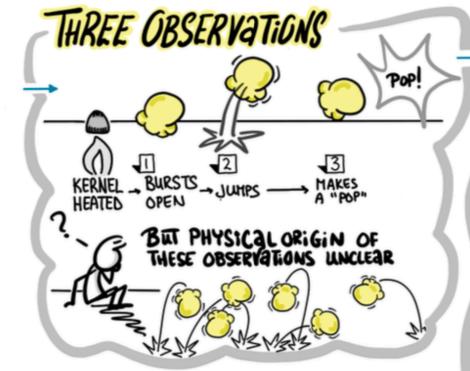
HOW DID YOUR VISUAL THINKING WORK GO THIS WEEK?







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EACH KERNEL CONTAINS 20 mg of H20

WHEN THE KERNEL IS HEATED HIGH ENOUGH
THE WATER BOILS - PRESSURE BUILDS

Pericarp

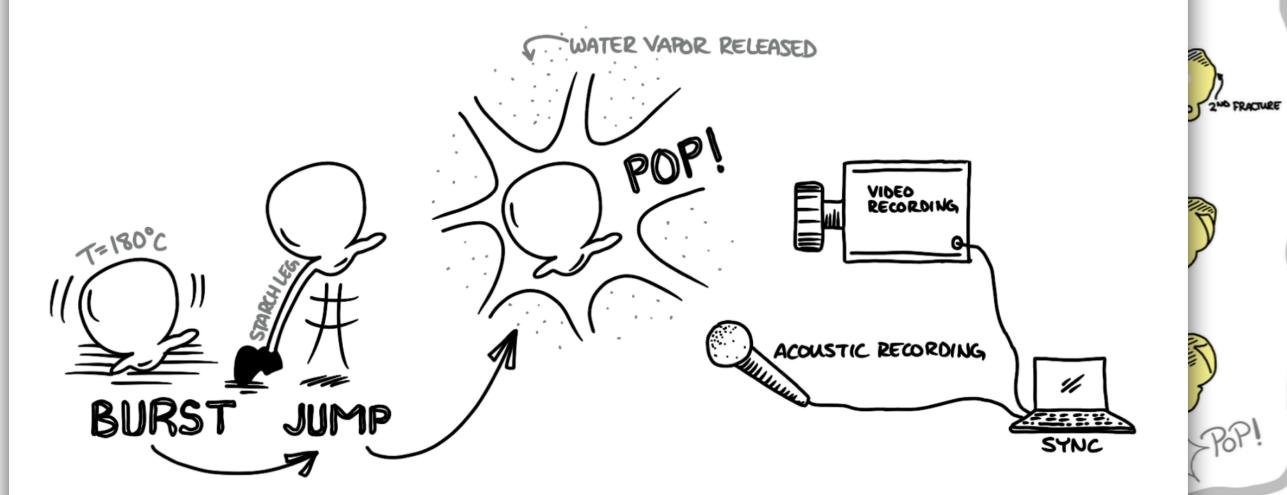
(HULL)

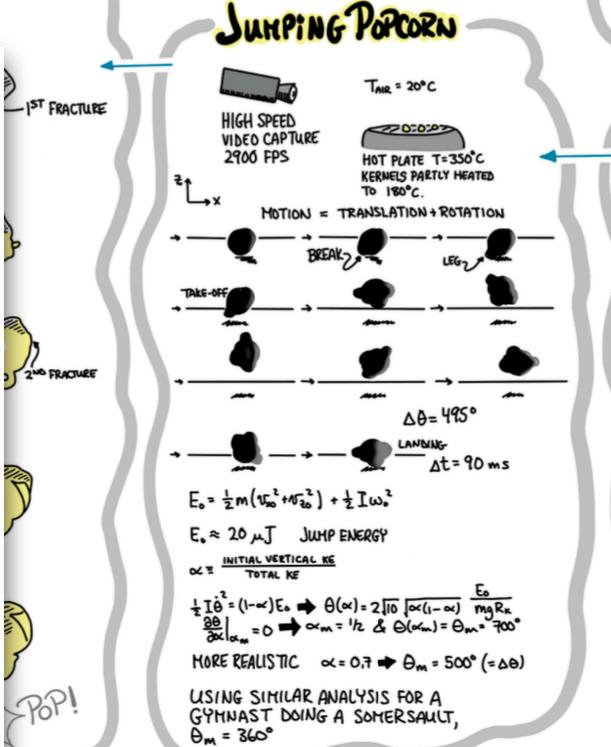
P>P - HULL BREAKS CRITICAL PRESSURE

GERH

ENDOSPERH

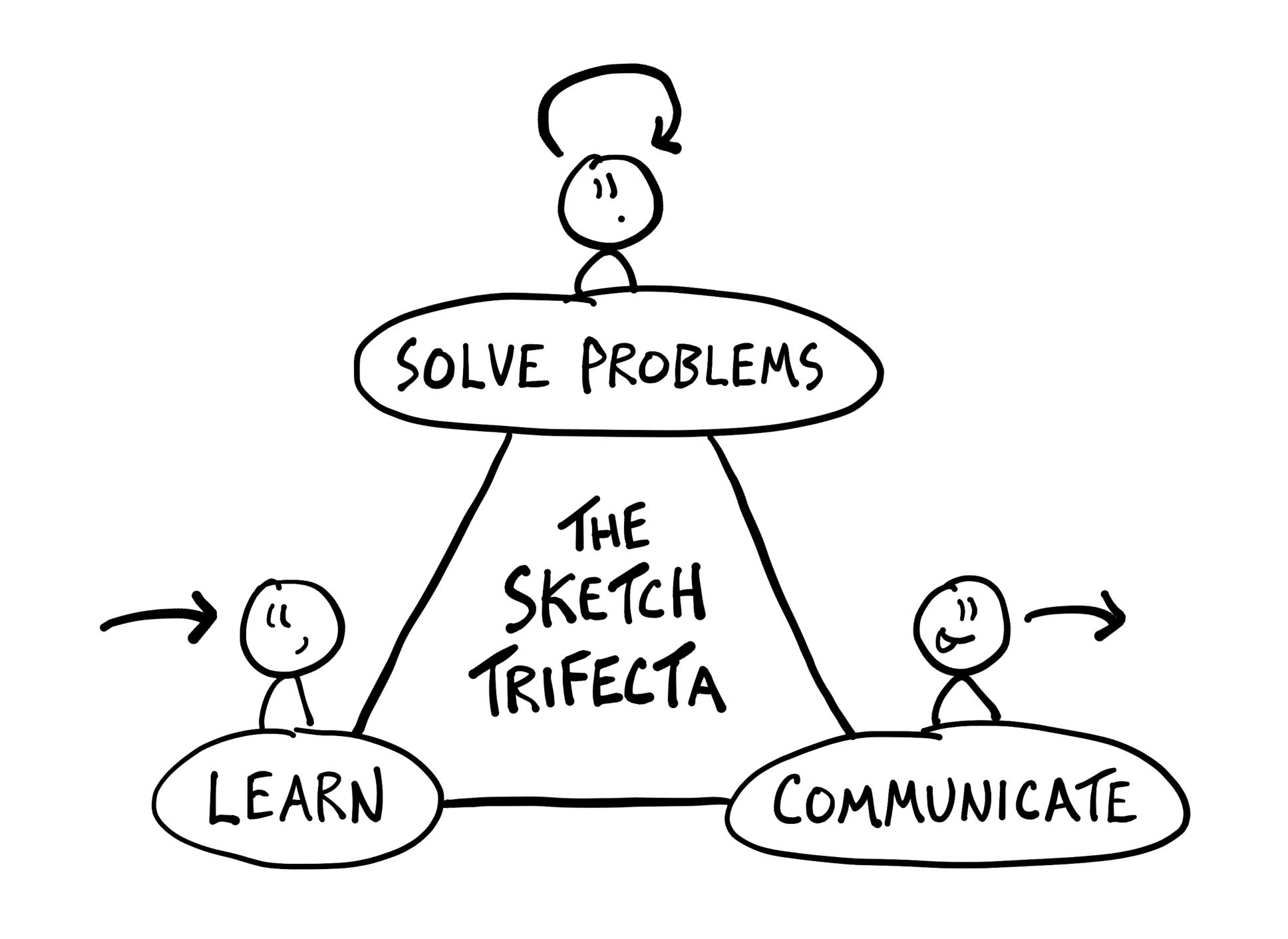
WHAT IS THE PHYSICAL ORIGIN OF THE BURST-JUMP-POP " POPCORN?

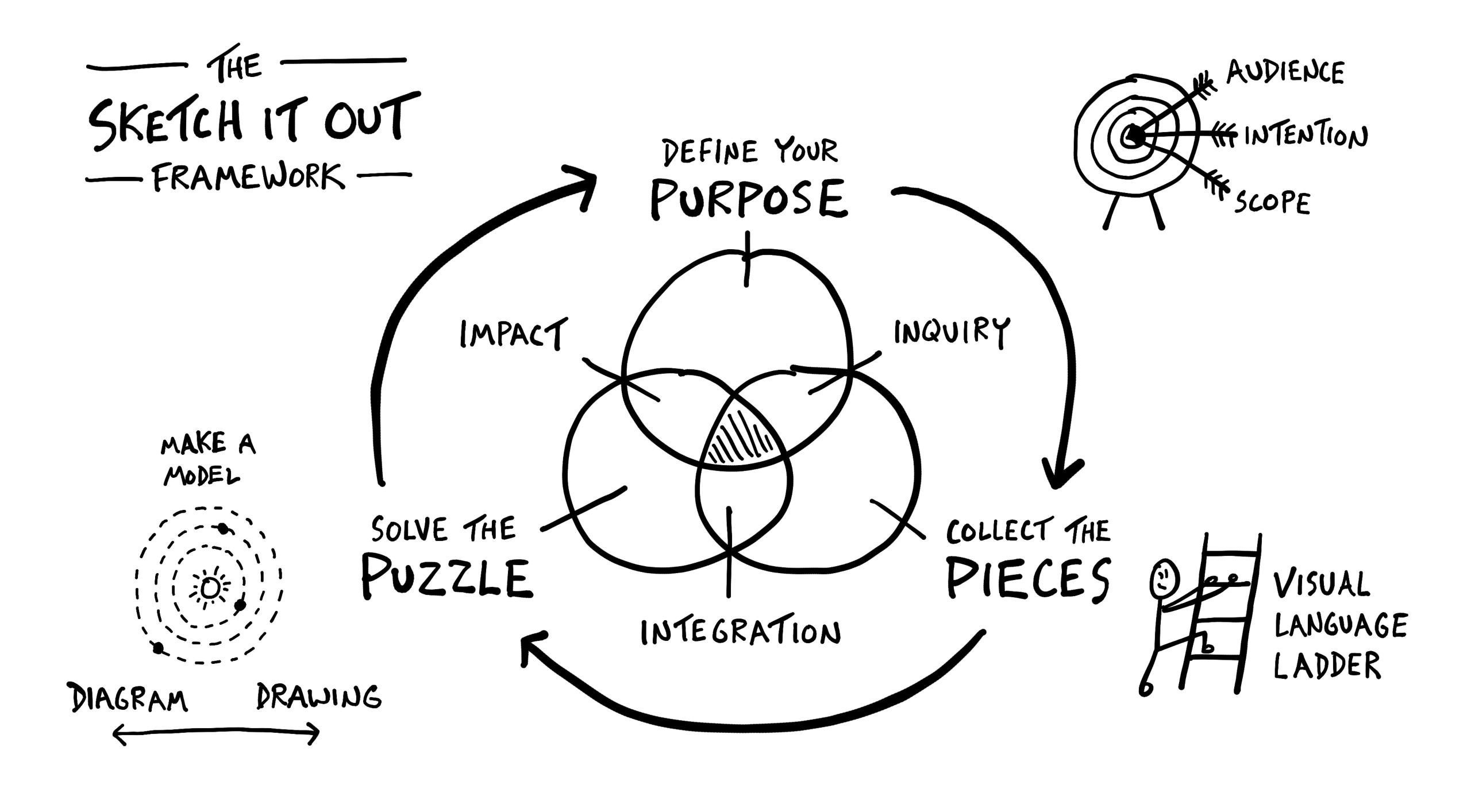




MODEL & CRITICAL TEMPERATURE πR2P = 21 Rto. KERNEL SPHERICAL THIN-WALLED SHELL Oc= 10×10⁶ Pa t= 160×10⁻⁶ m R_k= 3,1×10⁻³ m P_c = PRESSURE WHEN HULL RUPTURES t = MEAN HULL THICKNESS (160±40 mm) Pc=10.22 bar Oc = WITHATE STRENGTH OF HULL (~10 MPa) RK = MEAN KERNEL RADIUS (3.1±0.1 mm) WATER VAPOR To = 1-(RTO) In (Popo)
AS IDEAL GAS R=8.3 3/mol·K M=18 9/mol Po= 1 bar Lv=23x106 3/kg To=100°C 1-(3.3 x (100+273) /n (10,22) - 273 = 178°C HOST EVERY KERNEL POPPED (BA 180°C) OSS 002 081 091 011

T(°C)

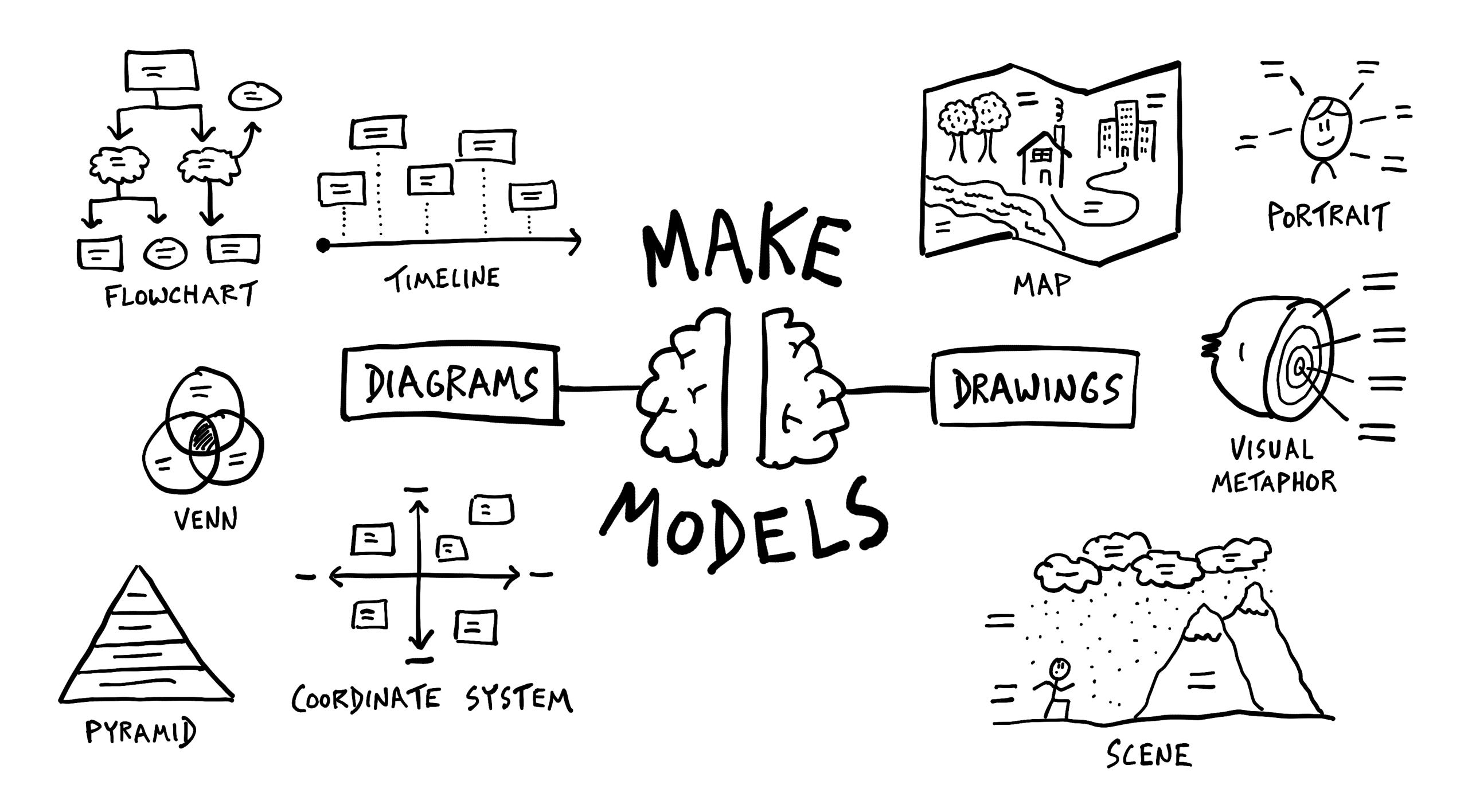




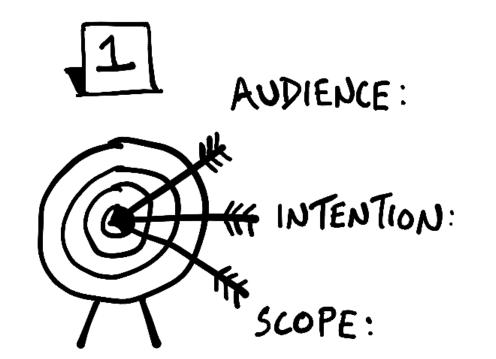
THE VISUAL LANGUAGE LADDER



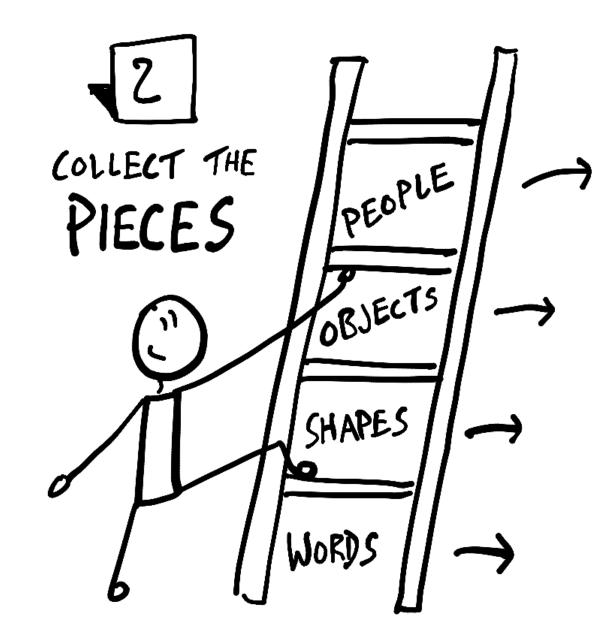
MAKE MARKS -> MAKE MODELS -> MAKE MEANING

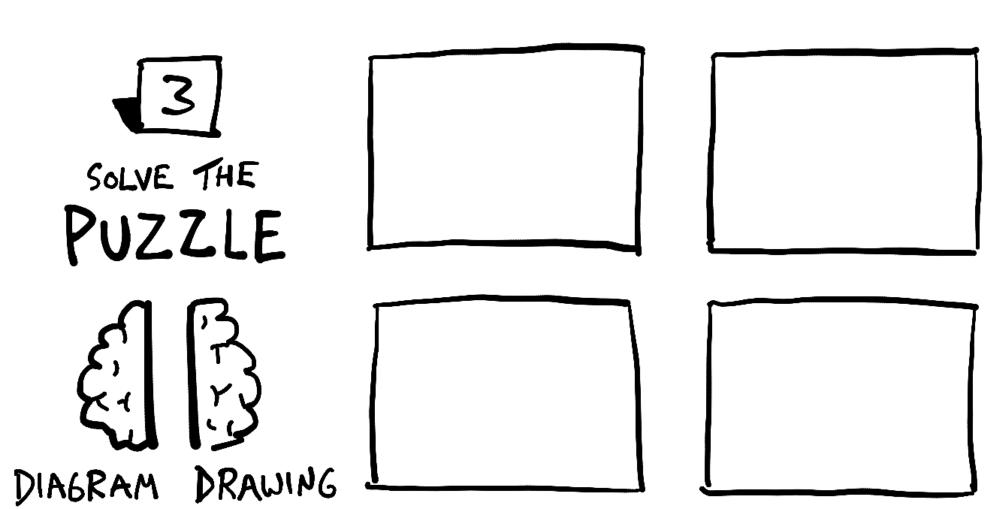


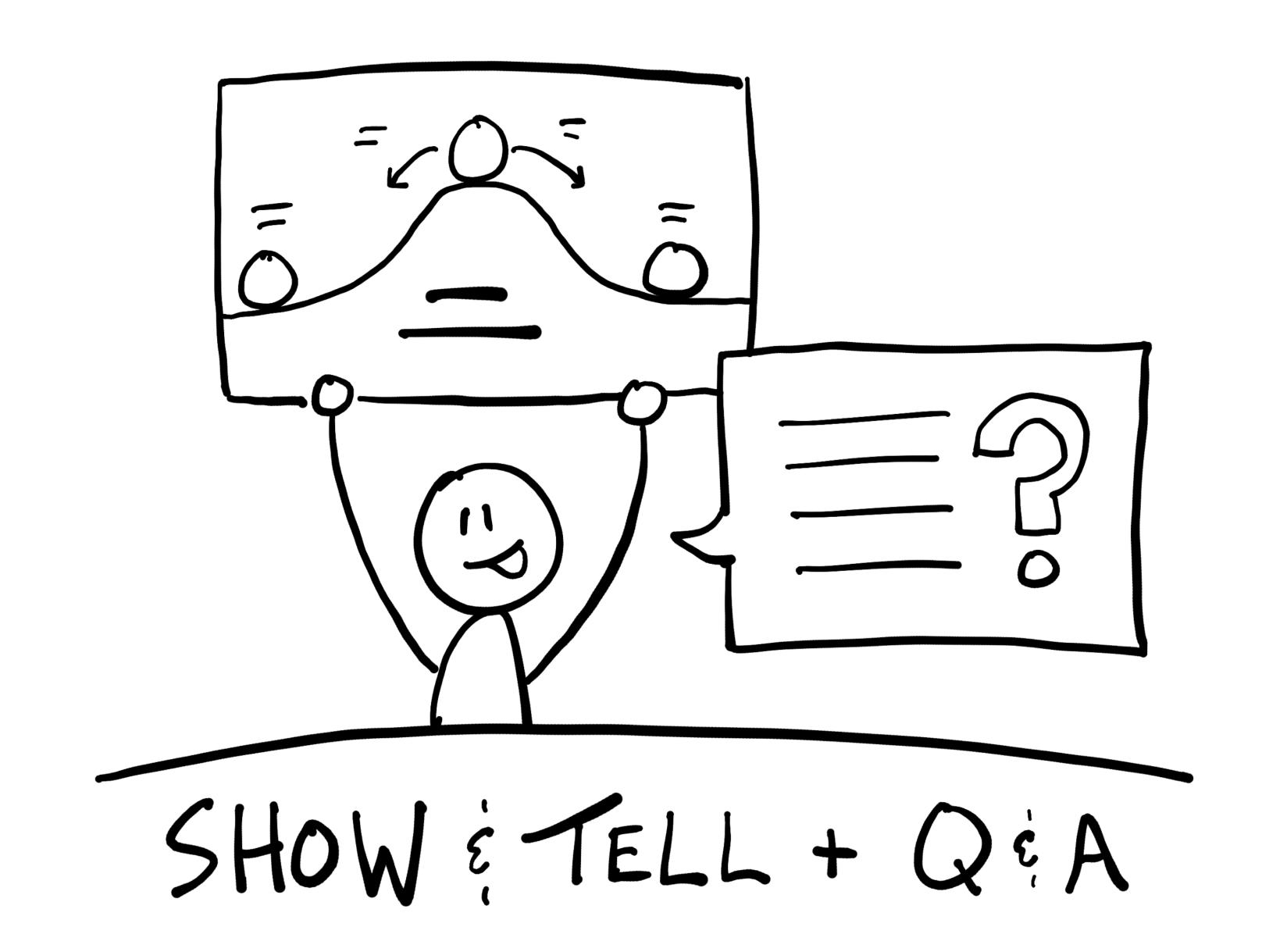
THE SKETCH IT OUT FRAMEWORK

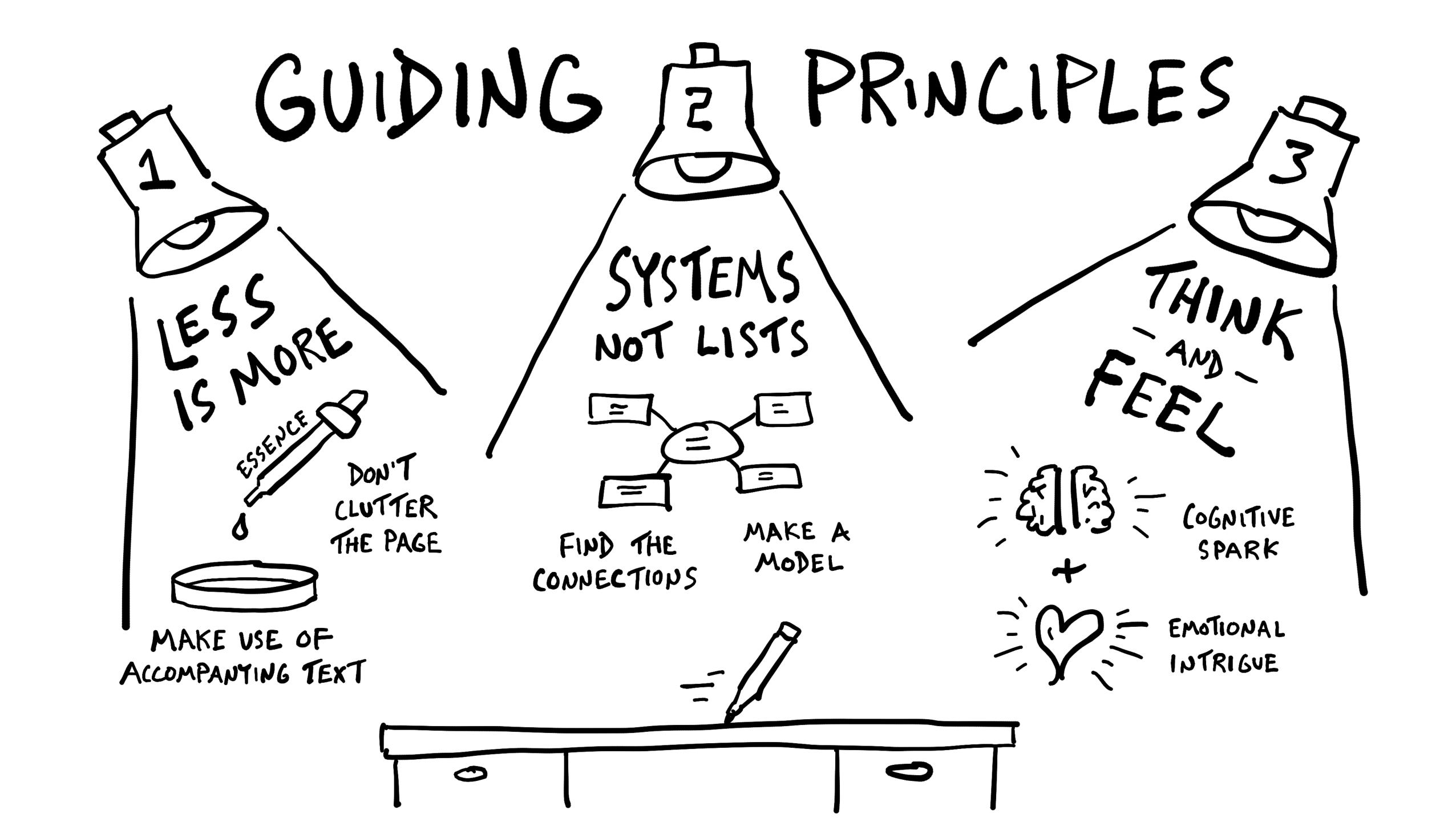


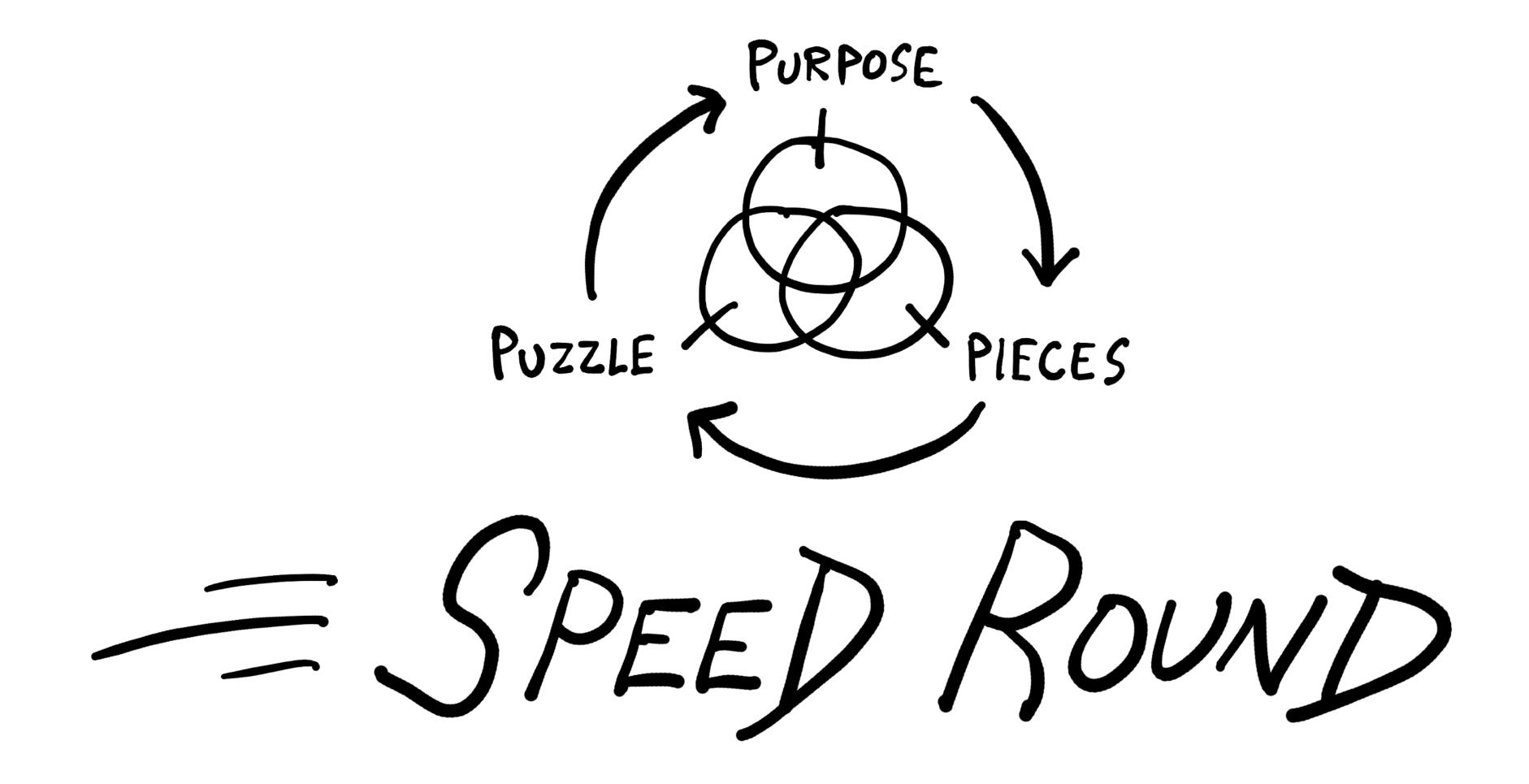
DEFINE YOUR
PURPOSE



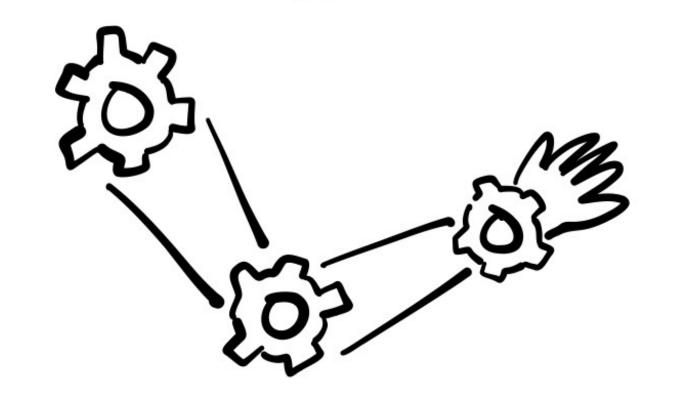




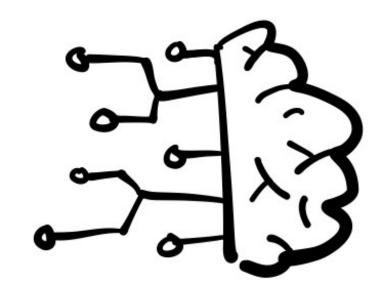




SKETCH IT OUT







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