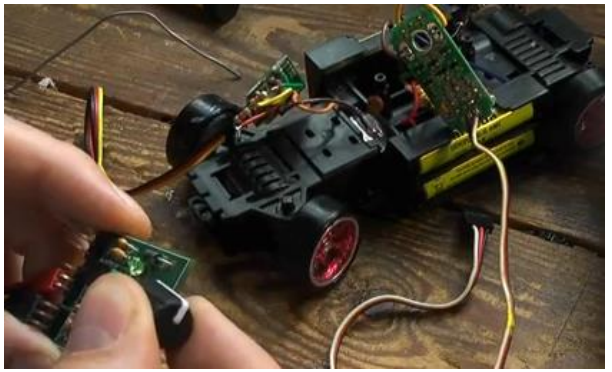
Ms. N. Lamboo: STEM Learning Leader

What is “making”?

- Creating
- Using your hands
- Tinkering
- Purposeful play
- Open-ended exploring



What is a “makerspace”?

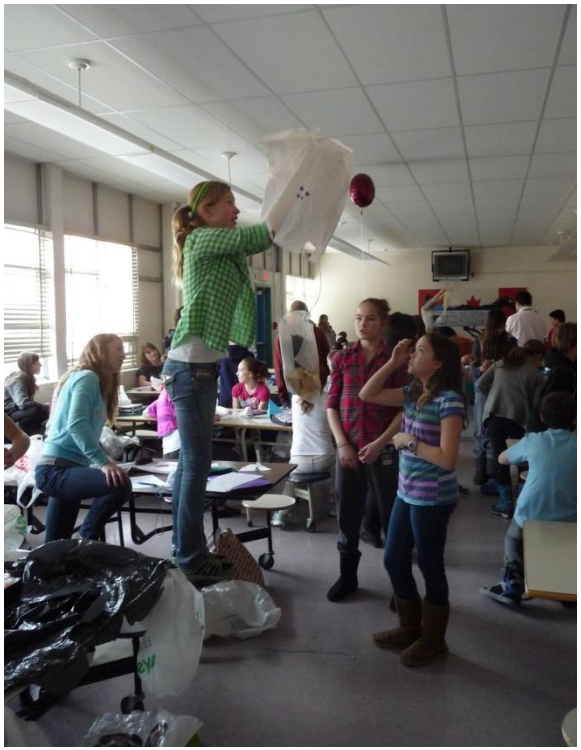
- Location where “making” can occur
- Hands-on
- Messy/noisy
- Collaborative, community-based
  - Everybody is an expert and nobody is an expert
- Variety of tools and materials
- Technology is incorporated

What does this look like in a school context?

- Inquiry or project-based
- Real-world connections
  - Ex: Tying math concepts to carpentry or culinary arts
  - Ex: Mr. Noriega – space shuttle/station
- Alternate form of expression
  - Kinaesthetic, tactile
  - Ex: cell project
- Real tools, real problems
  - Design challenge
  - Empathy challenge
- School examples
  - Egg drop
  - House project
  - Film project

Egg drop

- Short and sweet
- Demonstrate understanding of specific concepts
- Challenge students to think critically and creatively
  - Providing constraints
  - Changing up the problem
- Collaborative



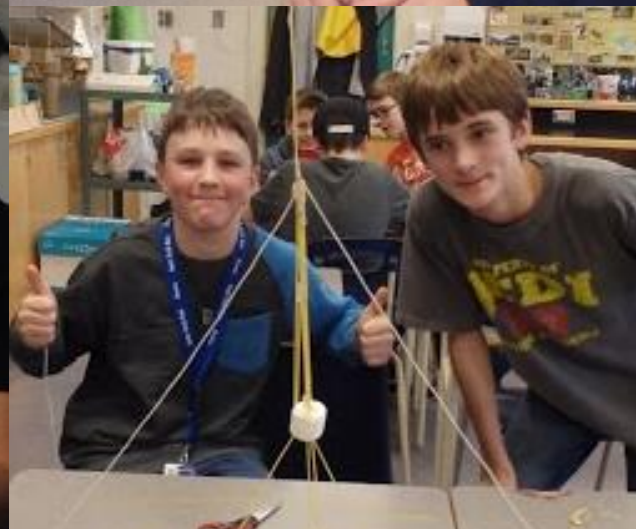
House project

- Longer-term in nature
  - Unit long project
- Personalized to each student
- Learning was in the process, not the result
- Skills and knowledge

Film project

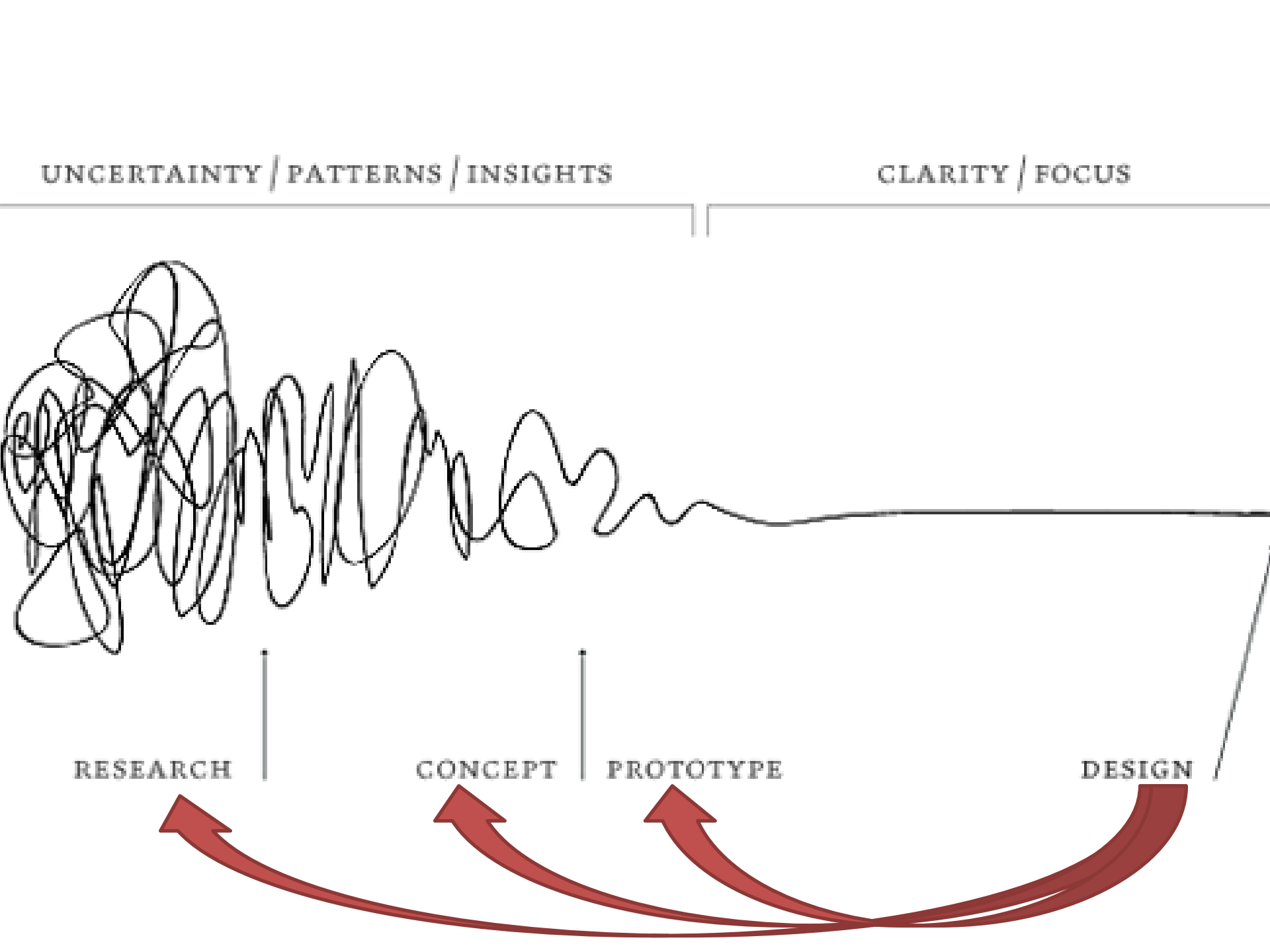
- Cross curricular

RITZ



What does this look like in a school context?

- Design thinking process → Ideate, create, fail, repeat
  - Developing critical thinking skills
  - Encouraging imagination and creativity
    - Telus Spark – 10,000 ideas
  - The future is uncertain – we need problem solvers
  - Risk taking
    - We learn when we step outside of our comfort zone
  - Cross-curricular
    - STEAM (science, technology, engineering, **ART**, math)
      - Examples: flowers


UNCERTAINTY / PATTERNS / INSIGHTS
CLARITY / FOCUS
RESEARCH
CONCEPT
PROTOTYPE
DESIGN

The A in STEAM

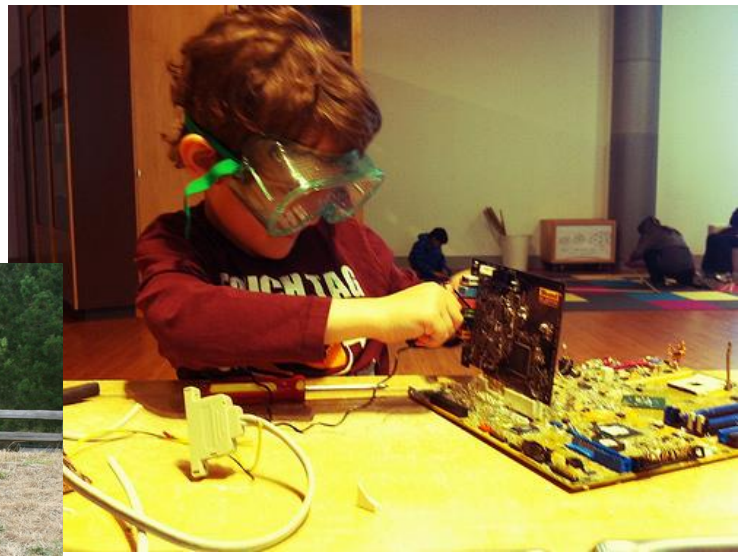
Gun = 8 Beavers
Snow shoes = 6 Be
alcohol = 10 Beavers
metal goods = 5 Beavers

Pedagogical philosophy

- Constructivist ideology –
  - We create our own meaning from our experiences
    - Learning by doing
    - Interact with materials, people and knowledge
    - Experience it first-hand
  - Reflection/discussion important
    - Learning occurs in the process

San Francisco: Tinkering School

- Gever Tully: Life lessons through tinkering
- Gever Tully: 5 dangerous things you should let your kids do



Goals of SPB Makerspace

- Offer students an alternate form of expression
- Teach critical thinking, problem solving, risk taking, creativity, collaboration and resiliency
  - “Success is in the doing, failures are celebrated”
  - “Fail forward”, “Fail positive”
- Teach students to value the process
  - “Nothing ever turns out as planned” – and that’s a good thing!
- Allow students to use real tools and technology
  - Link to real world skills in order to solve real world problems

Questions?

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