

PASSING THE TORCH

Advancing **Opportunity**
for Quality Science Learning

A Summit by the **Coalition for Science After School**

March 26-28, 2014 The Exploratorium, San Francisco

GRAPHIC RECORDINGS



MORE, BETTER, EQUITABLE DISTRIBUTION
 Impact Statement

Our time here...
 Beginning of a new set of conversations... that might last another decade

Over the Last 10 Years...

After School Networks
 Now 42... with 17 having a focus on STEM

600 sites Power of Discovery STEM

"After School" Prof. dev. for people working with girls

H's NORMAL... like homework... & it now IS!

Figure out TOGETHER where we go next

4H Youth Development
 Noyce

LA Wait - we don't need more conferences - we need to PARTNER with others

Chicago - inclusive conference

Funding hard... then Time Warner stepped up

Brought people together around an issue

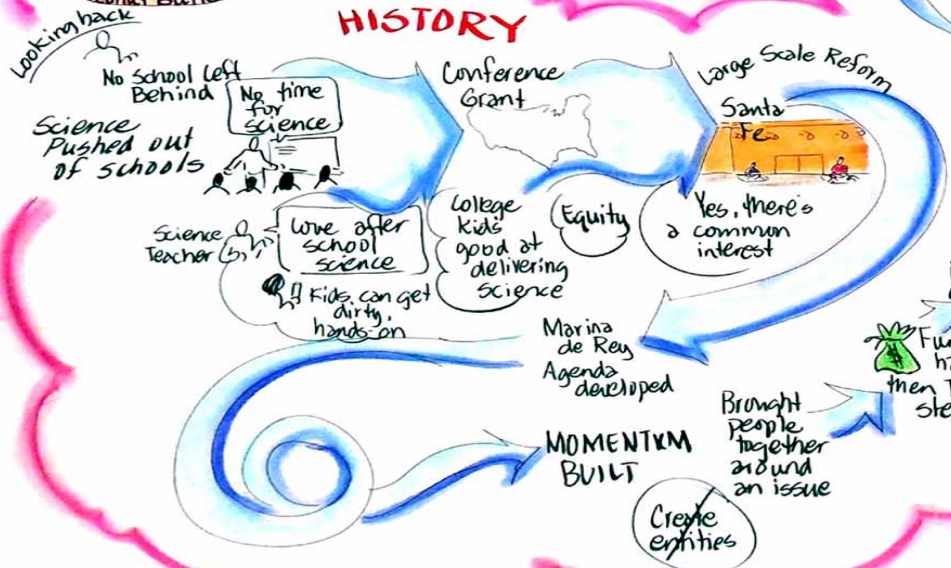
Create entities

Homework: your VISION for science After School

Science Education
 Youth Development
 Bringing the BEST into each other's world

Partners
 Noyce Time Warner Cable
 Bechtel

HISTORY



EQUITY

Have to DESIGN for equity

Think of Learning as BECOMING learning as *self movement*

Consider historicity & possibility

After school programs can provide organizers for future

Believe there is ingenuity in everyday activity (not something that has to be taught)

Kids Tinker with things all the time!

New trajectories

Disturbing... we could do so well... & yet only touch 15% of kids

Important things happening IN schools

How do we capture all of this energy right now?

seeing synergies

Frustrated by language... using terms differently

Used to think cognitive dev. just in school

Youth dev. & after school has changed significantly

Now, embraces **WHOLE CHILD!**

Now: Focus on STEM!!

- Boys & Girls Clubs
- Scouts
- etc.

Youth Organizations

System change has occurred

Frame equity as an opportunity gap

CONTINUITY

Can have hands-on activities, also need to look at DEPTH

90% kids think they'll graduate from college BUT 25% off track to graduate from high school

DISCUSSION

Often overlooked: resilience, Access to caring adults

How do we build resilience that is already there?

Good curriculum is like a good cookbook

Media co-sponsor Tech co-sponsor

Time Warner

- Embedded in community
- Big enough to provide a platform for STEM

"is the right thing to do"

Connect a million minds to STEM

share, connect a million minds

check out the Share Wall!

Not! After school Directory

Discussion Cont.

How can we be more HOLISTIC?

New pedagogical models needed

Think BIGGER PICTURE - longer range outcomes

Story: Woman in program. Didn't go to college. Started working at McDonalds. Got pregnant.

BUT 30 yrs. later... Both of her kids graduated from college! she's a regional mgr. for McDonalds

Timeframes can be funded

Reception

WHY NOW?



Look to what you'd like to see in ADULTS

Have people really listen to one another

What's your basis for that?

Why People WANT SCIENCE in School

- indiv. opportunity
- public good

Technology has blended

Home school

SCIENCE 24/7

Learning ecosystem - exchange of ENERGY & NUTRITION

What is your **VISION** for Science After School in **2024?**

Tenor of Last Night
predicated on:
More History
Better
More evenly distributed

Why Now?
Equity
New way to think about this dimension?
Think of equity

Common Core
overlapping areas
science
math
ELA

Youth Development Field
has changed
embracing
WHOLE CHILD

Some Discussion Themes from Last Night

Resilience
Developing / Existing

Consistency across the field

Should we create large-scale curricula?
Adapt/adapt locally

Deep Deep Experience
resilience
self-confidence
identity

Use of language
Does it lead to more thinking?
i.e. "non"

Imagine - approaches
NEW pedagogy

How do we define success?
How long-term should we look?

Systems...
An action may trigger a potential action

TODAY

Continue on theme - where we've been, where we're going

Start identifying next steps
Get multiplicity of perspectives

It's not about closure today

Tough Challenges

Roles of intermediaries
How do you grow roles?

Roles of science centers?

Creating State/local networks focused on policies, partnerships, quality

Starting to figure out MEASURES

Build STEM Capacity building



Ensure quality
How do you COMMUNICATE success?

NY City - STEM requirement in RFPs

Tough Challenges



Discussion



Higher Education who are training people coming into our system

Change Policy
What are SYSTEMS/ PROCESSES needed?

Science Times On Tuesday
Affect public opinion
Pitch to them
All work together on a story

Collected stories systematically, like quantitative data

Digital World
Organize digital interface for stories
People want to do something of SUBSTANCE
Share TBOLS social media

Health community not struggling with communication to CHANGE BEHAVIOR



What are CORPORATE ENTITIES saying they want from STEM education?

Important to consider
Language-definitions After School
Healthy Communities initiatives

FORUM GROUPS
Research & Evaluation
Policy & Advocacy
Programs
Intermediaries
Funders
What could we do to push us forward?
What could be some first steps?

Creating a Roadmap

These organizations touch 15 MILLION Kids!
YMCA
Big Brothers Big Sisters
Boys & Girls Clubs of America

How do we help scale STEM initiatives?

② Positive Youth Development

How do we connect these efforts with state/local afterschool networks?

How do you create formal/informal connections?

③ How do we know making a difference?

How do we design models that work?

⑤ Presidential Commission Inspiration/Preparation

What are you doing about this?

How do we tell the story to policymakers?

We DO have evidence

Communicate Messages to Public
Amazing stories we need to get out!

Media understands communication: How could we CONNECT?

The FIELD should be STRATEGIZING, not the funders

What have been the field building roles of organizations?

CRITICAL ISSUES & ESSENTIAL OPPORTUNITIES

Study in CA re

- Partners
- network

offer science
1x/wk

Funnel effect

- Can partners influence offerings?
- learn/ explore re science

many partners... but doesn't translate into a network (though just one partner can be effective)

- Programs advantaged by partnering with other programs

Is a network structure nice but not necessary?

Q How did partners come together?

A structural
personal (50%) connections

- What is a network structure?

Materials 101 Things to Do with Robots

Is curriculum the wrong approach for after school?

How can we strengthen Science by Pinterest approach?

Different Infrastructure
Realities of after-school... not mandatory... you don't have consistent attendance... so curriculum with outcomes might not be as appropriate. A framework that links activities might be interesting

could have an intentional design - a problem based learning framework

How can we encourage an intentional sequenced approach?

could curriculum include learning, making, failing?

How can after-school address areas not covered/used in schools, i.e., project based learning?

Some "curriculum" is very flexible... there are things out there now that are project based

Discussion

■ A lot has happened in 10 yrs. in education

Things will come & go into the field

Sustainability

Maintaining the VISION Leadership in the Field

Who will be the conscience of Science After School... what kids should be receiving

It will be US!!

Coalition One role was as a convening network

Collaboration

is a MOVEMENT

Core

Kids don't grow up, well if don't experience science after school

Need to keep the flame alive!!

Still Need to identify long-term vision & concrete ways to get there

Capacity

is essential (though development is usually the first to be cut)

Professional Development

is an essential imperative!

STEM Prof. dev. for what?

How to Dev. Curricula? Hands-on activities?

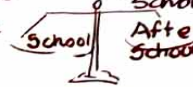
It's out there... but we don't share/disseminate to others

We also don't measure prof. dev. in terms of impact on KIDS

In School & After School Opportunity to develop what schools can't - the ENTIRE KID

ask questions - solve complex questions - engage - tinkering

World like to see a balance in In & After School - for funding & mutual respect



DISCUSSION

After school space is here to stay Working parents youth dev. was huge idea in Santa Fe

Opportunity now: We've learned a lot... need to roll out

BUT

We need a new set of BIG Ideas



Technology... how we can bring to after-school

success/life skills

Innovation happens in the fringes

The big idea is what philanthropy is about

Fund risk taking

Need to Figure out

Are we a field or a movement?

Part of a movement?

or Define a space in a field?

Forums Sharing Key Ideas

Programs

- Random acts of STEM
- Need to more clearly articulate what we're all about
- Professional development capacity quality
- Expand educators - ^{corp.} coaches of STEM learners -

Intermediaries

- Grass tops interface Grass roots
- (where does this reside?)
- ↑ conversation goes BOTH ways!!
- Prof. dev.
 - Est. professionalism
 - Community of Practice as a frame
 - Can get Attention of funders

Funders

- Assets of Coalition to hand off... find a place
- Tensions
- Unified vision
 - Bringing different funders together
 - Policy vs. practice
 - Capacity to embed
 - Role of funders
 - Annual gathering *continue this think tank in some ways*

Research & Evaluation

- Initiatives
 - STEM collaborative
 - Common instrument
- Opportunities
 - Dissemination research
 - make good use of existing research
 - Mechanism to disseminate research
- Challenges
 - Robust research design
 - Agreed upon vocabulary
 - Multi-tasking as a field
- Gaps
 - Impact of prof. dev.
 - sharing data
 - Thinking of equity equality as different

Policy & Advocacy

- More complicated, sophisticated policy/advocacy → state/local level
- How do ideas spread? Take advantage of this
- Value of political operatives
- maybe there isn't one message... maybe best to fund political operatives

GAPS

- Capacity - sustainable efforts
- Connections / best practices
- Professional dev.
- Accountability/impact
- Research on equitable STEM

THEMES ACROSS GROUPS

CHALLENGES

- Funding streams
- Professional dev.
- Networks, connections, collaboration
- Delivery mechanisms
- Defining problems, language, messaging
- Role of curriculum
- Identifying quality
- Impact, accountability, measuring

Discussion

- Who will play intermediary role in the future? Systemically build relationships

- We haven't been talking about identity dev., esp. for vulnerable populations
- We need to also have voice of: practicing scientists, youth

- We've been positioning ourselves as solution to inadequacy of schools - but hopefully schools will change - they're an imp. piece of the ecosystem

- Clear articulation of vision; communication
- Advocates
- Geo-concentration of efforts... so empty areas
- Discussion
 - Have we sold after school as imp. part of STEM education? Think we've gotten some traction but still have work to do

Gap Discussion (cont.)

- Parent-engagement is missing
- After/out of school-advancing STEM ed.
- Youth dev. orgs. has a system that works
- Tension-science ed. is discipline-based knowledge
- We don't pay people enough for doing fabulous things for kids. Need to change institutionalized structure.
- Summer... Such an opportunity... access to kids 10 hrs. a day... full of untapped potential - summer also an opportunity for teachers to work with after school educators
- Informal learning vs. formal STEM learning... It's not an either/or. Need kids to see expertise - otherwise doing a great disservice.
- Professionalizing the leadership is needed
- Opportunity for job sharing - ie. full-time employment
- Science center + youth development
- Great opp. in more informal environment to engage parents

Can use informal methods to deliver discipline-based ed.





Moving the Dial



Opportunities

- Creating mutual respect
- Who's not here - scientists - coaches - technical jobs - higher ed.
- Policy
- Cross-sector issues
- Beacons for action
- Publishing click to science-online prof. dev.
- Expanded-dry funding

Discussion

- Companies want employee engagement - an immediate opportunity for us!
- Intersections of formal/informal programs →  cultivate learning ecosystems
- MOUs re partnership - job sharing - advocacy 
- Increase connectors/intermediaries. Also create lateral connections
- Look at STEM ecosystem at state level
- Take competencies - STEM + youth dev. → dev. of a field 
- Pair up groups - practitioners + academics → publish - Need to build-in time for those partnerships
- Need to be thinking "free" mess; available prof. dev. - don't have research showing effectiveness of this
- Business plans/models to share resources also needed 

With no coalition, what will we know, is going on where? (so we're evidence based).
 What will be infrastructure to keep people connected?

Work Groups

- Online resources
- After school / school
- Learning ecosystems
- Value proposition / messaging
- Pipeline

In-school / after-school partnership dynamics

- ① Operating Partnership working in mutual respect
 - dev. curriculum
 - staffing
 - homework
- ② Communicating to the right stakeholders
- ③ Strategy - provide language & activities to deliver common core
 - after-school staff
- ④ Quality matters!
- ⑤ Being DATA driven

Messaging

- Need to anchor value proposition
 - Unique things - lifelong learners after-school brings
 - Equitable / Engagement
 - Take risk
 - Quality/quantity of data imp. in next step
- Importance of social development
- Unique things - lifelong learners after-school brings
- Equitable / Engagement
- Take risk

Programs Without a Net

- Community science workshop
- NY Hall of Science

What are common design & pedagogical elements?

i.e. being approached on how to increase Latina participation

Ecosystems

Discussed framework / strategies

Next steps:

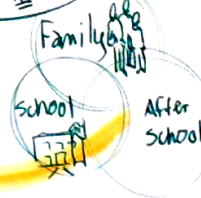
- dev. a practitioner guide
- role of intermediaries in dev. ecosystem
- more & timely release of research
- is person-to-person assistance also needed?
- Talk about nuts & bolts of the role

- Talked of discussing more "failures" (didn't work the first time)

Maybe think of being more COMMUNITY based - involving ppl & families

It's about CULTIVATING ECOSYSTEMS (we're already IN one)

- Ecosystem much larger - look at intersection of elements



On-line Resources

- Have a common repository
- Discussed how to make it valuable

Challenges

- time-consuming
- vetting
- expense
- keeping up-to-date

- Proposal for a working committee for this topic
 - Create pathways for multiple entry points
 - meta data idea

What Needs to Happen NEAR-TERM

- Activate/leverage
- GGI commitments
- Launch Alliance/ASRE mov/partnership
- Creating connections
- Engage corp. sector
- Professionalization
- Ecosystem frame
- Infrastructure for partnerships
- On-line resources
- Meta data
- Who will pick up:
- Convening
- Connecting/directory
- Messaging/PR piece
- Strategy/agenda
- Technical assistance
 - advisory boards
 - handholding

Criteria for list

- to mitigate challenges
- roles CSAs has been playing

□ Summer

Time Warner committed to ensuring data lands in a new place

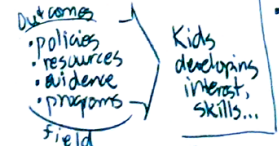
DISCUSSION

Q: A: yes, want everyone to be aware of initiatives, partnerships

Q: Initiatives might show who could fill gaps

A: Not sure a list of initiatives will solve it

Q: We need to articulate the END... why are we doing this?



- Logic Model for Passing the Torch -

Coalition has a strategic plan with a logic model

Having an honest broker for relationships is hard

DISCUSSION

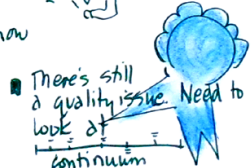
Would be good to revisit what we're all about...
Vision

Coalition has changed how I operate. I now work with a COMMUNITY of people from various organizations.

We'll convene again in a year - see what effect has been of dropping certain aspects

See if this happens

Work becoming more localized... that wasn't the case 10 yrs ago. It's now about divesting.



There's still a quality issue. Need to look at continuum of programs

Maybe group together people interested in areas - discuss how we would carry the torch

Summer not up there [added to list]

Concerns:

- vetting process
- convening - does so much! And will be even more important as more mushrooms pop up

Friday, March 28, 2014

After Vision Discussion

- Does existing vision/mission capture our vision discussion? *all responses capture part of it*

- We have a lot of overlap with the Maker Movement (don't reinvent the wheel)

These were personal visions... Question might be whether they can fit in the vision/mission frame

Might be a statement of a **MOVEMENT**

"Passing the Torch" not that accurate. Torch has lit a lot of torches along the way. It's not me evangelist. Now think of how we tackle **EQUITABLE DISTRIBUTION**

What we've moving toward



- Online community resources can be an organizing structure

Mission work strategically to institutionalize access to high quality STEM after-school

- Mission has happened. Idea of "Passing the Torch" was that org. no longer needed. The field has emerged.

- Some dissonance re signing up for commitment
- Decentralized **MOVEMENT** - identify values/manifesto. Occupy had core principles. Focus on a philosophy/principles that we take home/embrace. Mechanisms to connect us - might not be face-to-face.

- A lot of pieces have been actualized, institutionalized. Would be good to know which pieces have left

- List of initiatives can be distributed
- List of opportunities/challenges

Start of the Day:

- Agenda rearranged... get more clarity going forward

- Vision
- Mission

- Who might take on some challenges
- Commitment

Individual reflections - what you want to share, take away

3 things you've heard that are STICKING with you

2 things you're going to SHARE

1 action you're committed to have happen. At individual or at connection level

- ★ STEM offering with model
- ★ Connection
- ★ Online Resources
- ★ Professionalizing the Field
- ★ Policy Advocacy Messaging Hub to ↑ funding
- ★ Connections to Journals
- ★ Write about in Youth Journal
- ★ KidsCan survey
- ★ Integrate science-rich institutions
- ★ Make research findings more accessible to field, policy makers
- ★ Tools for social media
- ★ Vision for a movement
- ★ Convene practitioners at nat'l level
- ★ Share quality framework
- ★ Share talking pts.
- ★ Maker movement
- ★ After-school robust presence at STEM conference
- ★ Work on an Equity lens: ecosystem model... define nutrients needed for equity
- ★ AmeriCorps/STEM
- ★ Extend our conversation this morning to funders
- ★ Ensure STEM stays part of program
- ★ Low cost solutions so achieve equity
- ★ Field strategize vs funders
- ★ Lessons to be learned from outside U.S.
- ★ Stronger role of scientific institutions
- ★ Talk about ecosystem model
- ★ Inclusion/ equity
- ★ Purposely connect intermediaries, program so have one voice in the state
- ★ Cultivate ecosystem
- ★ STEM as part of integrated model

★ study STEM promotion / dev. of social/ emotional skills

★ Compilation of resources

★ Include STEM in ecosystems

★ Share quality framework

★ Share talking pts.

★ Maker movement

★ Design for equity

★ Address infrastructure issues

★ Community of Practice

★ STEM 21 / online resources
Info sharing across sectors

CLOSING

Many THANKS!

Equity... We've taken Civil Rights to heart

Stronger together than apart



Improving the world



COLEARNERS in STEM education

Volunteers also need training



Focus on skills, attitudes, approaches... not the institution

Equitable access to Quality building tools

Build PROGRAM QUALITY
Pay attention to SMALL PROGRAMS - can have QUALITY SERVICES

STEM Interconnected work
Tool Strategy

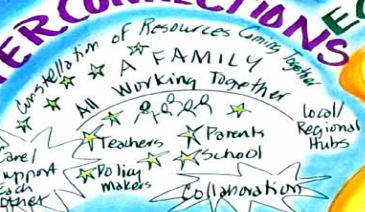
We have private funding of PUBLIC SERVICE... why not?

PUBLIC FUNDING

All in same boat SERVING KIDS

ADVOCATE to INCREASE the PUBLIC FUNDING POT

INTERCONNECTIONS ECOSYSTEM



Think Holistically



Using STEM to build capacity problem-solving
Practice pathways (formal & informal) atnaship atents & where "gatekeepers"

President talking of EQUITY, STEM
Invite Congress people to come & see what we're doing

Curiosity

We need a compass... navigational strategy

VISION



Urban kids can also face access barriers

Multiple pathways youth can navigate
Kids also give their contribution
Youth add back to system

What's NORTH? - civic membership
Dept. Labor Justice → AmeriCorps → Vista (have more authority in regulations) think creatively

PATHWAYS for Youth wherever there's a SPARK

Multiple Pathways for Youth to Answer Questions
Parents, Institutions, Tech, Scientists, Artists

YOUTH PERSPECTIVE
Curiosity

Can integrate learning
Community Science Workshop Model
Marginalized communities

Need to think of how COMPLICATED kids lives are!

Deep engagement, Participation in Learning Experience, Dialogue

Better the World
Hands on Learning Works!!

YOUTH FOCUS

Stay focused on what YOUTH interested in → EQUITY
It's finding Pathways appropriate for the youth

Multiple Entry Points Always have access
Reciprocity between 2 areas/fields
SCHOOL After School
Professionalize the field You must deliver STEM Starts getting to EQUITY issue

EQUITY More Evenly Distributed
Data collection for the field
Data-based evidence used for decisions

Designing conducive space

celebration
cleaned up creek

ECOSYSTEMS
Maybe we'll communicate without resources in another way

Volunteers also need training

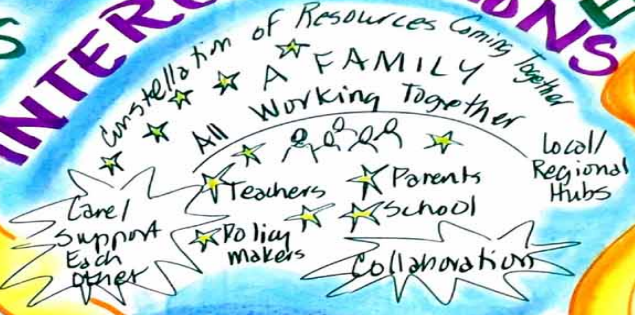
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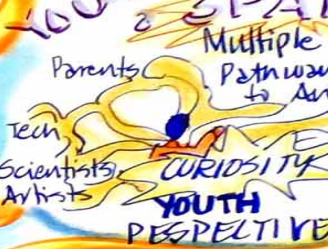


ECOSYSTEM

- Shared Vision of Workplan
- Community Based Orgs
- Science Centers
- Funders
- Dept of Ed.

All understand their role - they work all yr. to make it happen!

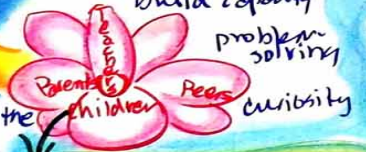
PATHWAYS YOUTH WICK



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VISION



Urban kids can also face access barriers

Can integrate learning

Need to think

We have private funding of PUBLIC SERVICE... why not

PUBLIC FUNDING

All in same boat SERVING KIDS

Next week your teacher is going to

MULTI-GENERATIONAL, SUSTAINED RELATIONSHIPS

Practice pathways (formal & informal) partnership parents & (other "gatekeepers")



Multiple pathways Youth can navigate

Youth add back to system

Kids also give their contribution

Science taught to

Better the World

Deep roots (have more latitude in regulations, think creatively)

We need a compass... a navigational strategy



What's NORTH? Voice membership

Think Beyond Dept. Ed.

Dept. Labor Justice Americorps Vista

ADVOCATE to INCREASE the PUBLIC FUNDING POT

VISIONS ECOSYSTEM

Coming together
Parents
Local/Regional Hubs
Collaboration

Shared Vision of Workplan
Community Based Orgs
Science Centers
Funders
Dept of Ed.

All understand their role - work all yr. to make it happen!

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Intentionality

It's finding pathway appropriate for the youth

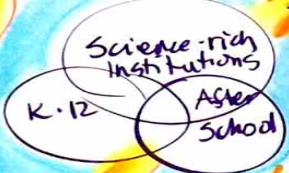
Opportunities for Efficiencies
Sharing between programs

Multiple Entry Points... Always have access

Professionalize the field
You must deliver STEM

PATHWAYS for YOUTH WHEREVER there's a SPARK

Multiple Pathways for youth to Answer Questions
Parents
Tech
Scientists
Artists
Institutions



DIFFERENTIAL Wealthy families spend much more. Programs are expensive?

Reciprocity between 2 areas/fields

Schools
After School

Starts getting to EQUITY issue

BOTH have EXPERTISE!!

CURIOSITY YOUTH PERSPECTIVE

Urban kids can also face access barriers

EQUITY More Evenly Distributed

Families in the middle most squeezed

Current Bias: Urban Design

Data collection for the field

Natural parts of program

Data-based evidence used for decisions

President talking of EQUITY, STEM

Invite Congress people to come & see what we're doing



Can integrate Science Workshop Model
Marginalized communities

Need to think of how COMPLICATED kids lives are!

Designing conducive space

ECOSYSTEMS

Maybe vet communities without resources in another way

Deep engagement. Participation in learning Experience. Dialogue



Better the World

Science taught to Deep roots

Hands on Learning Works!!

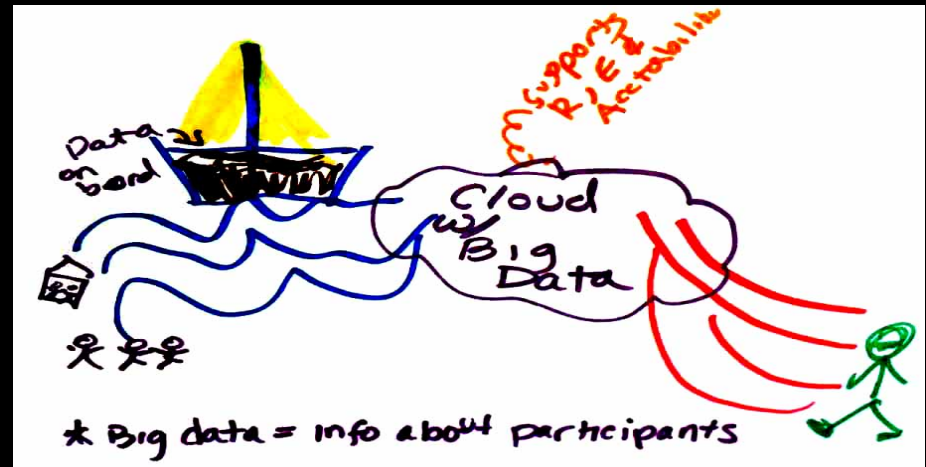
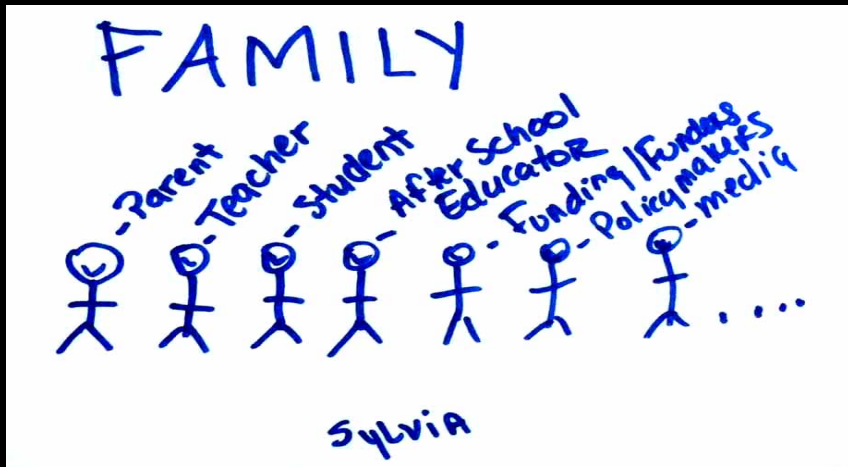
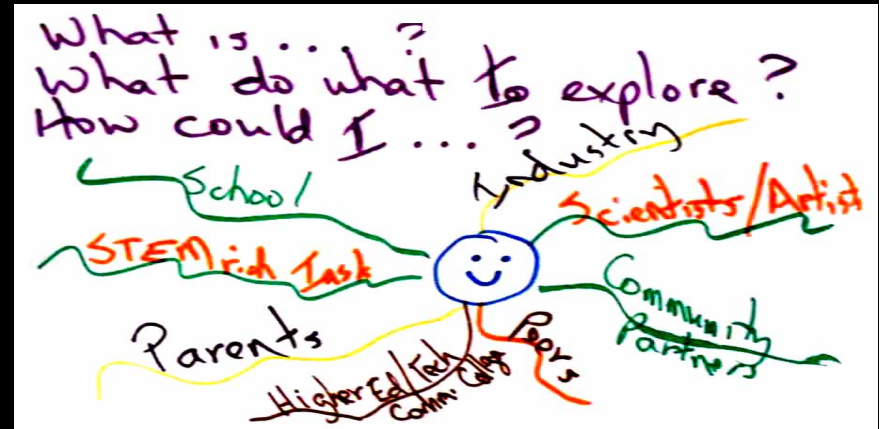


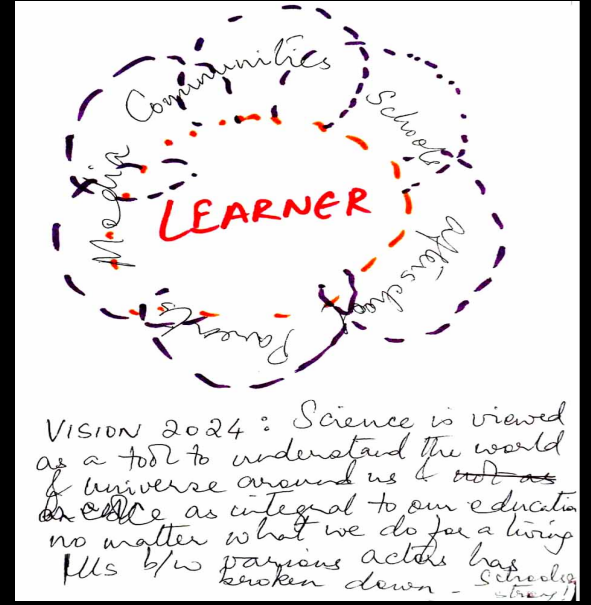
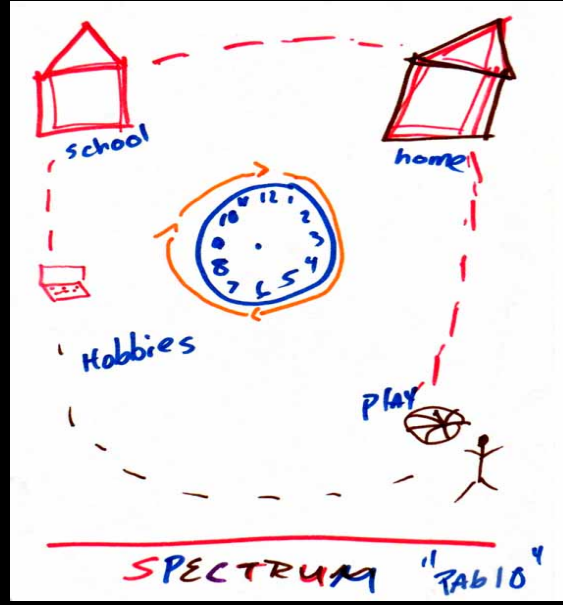
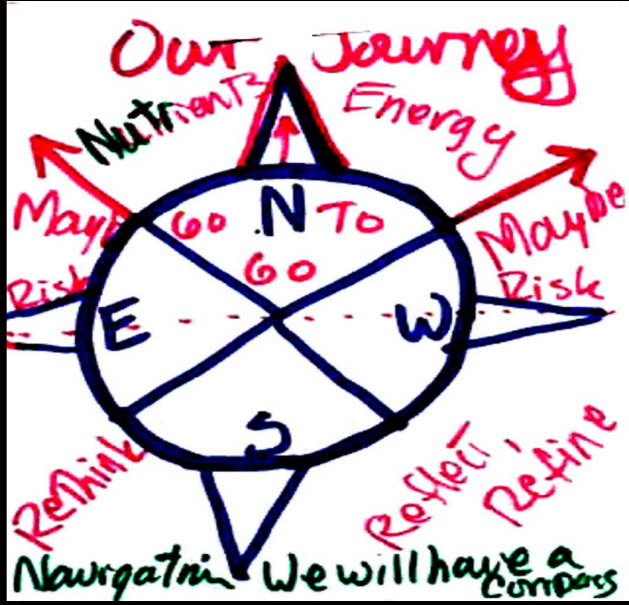
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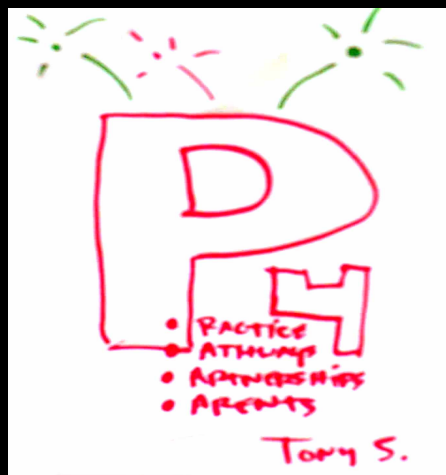
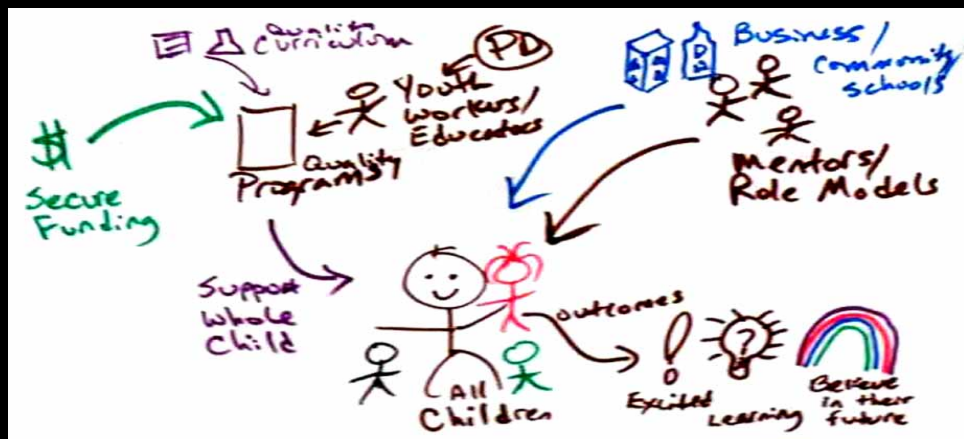
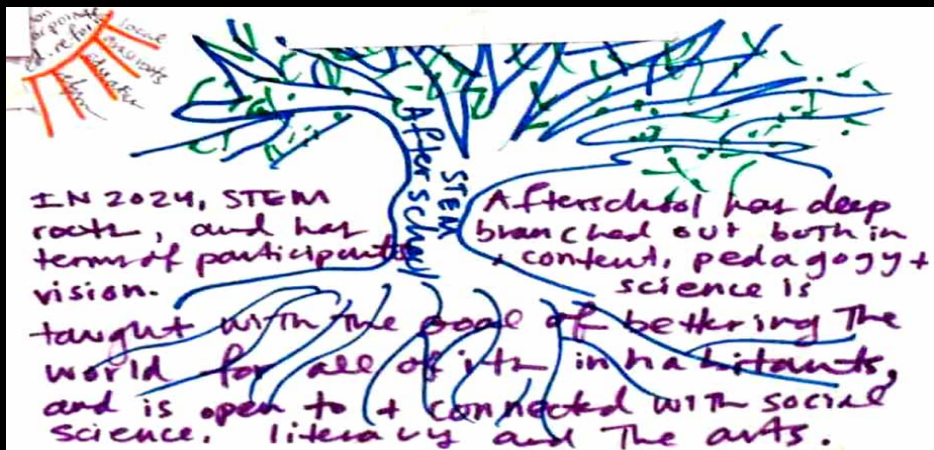
We need a compass... navigational strategy

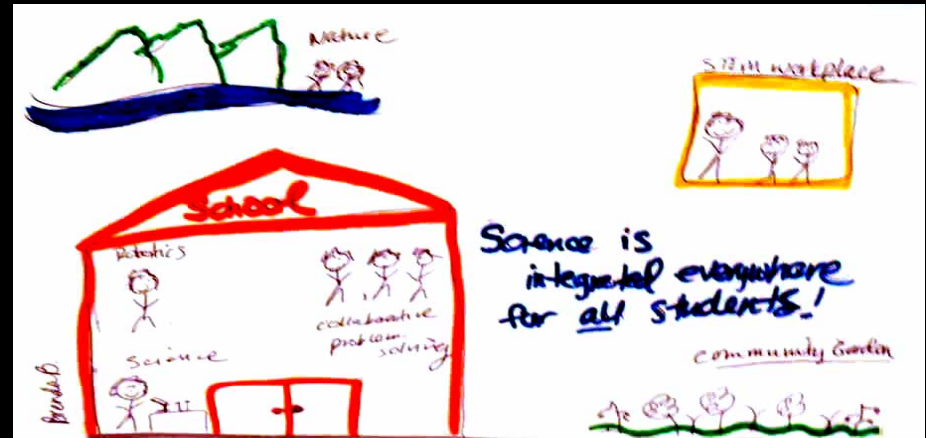
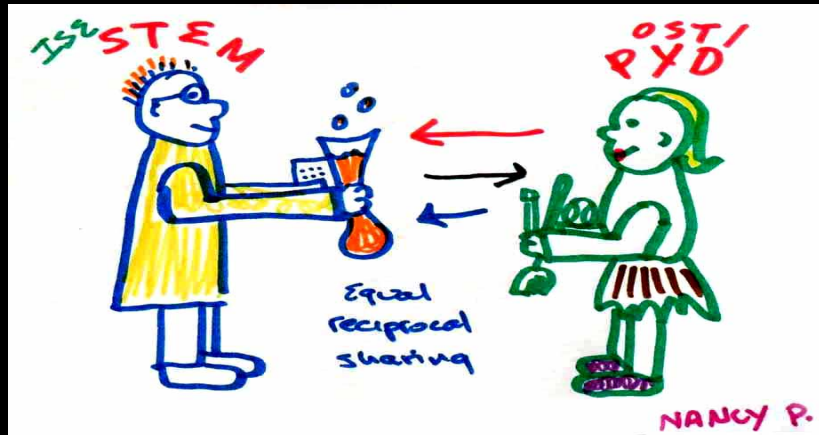
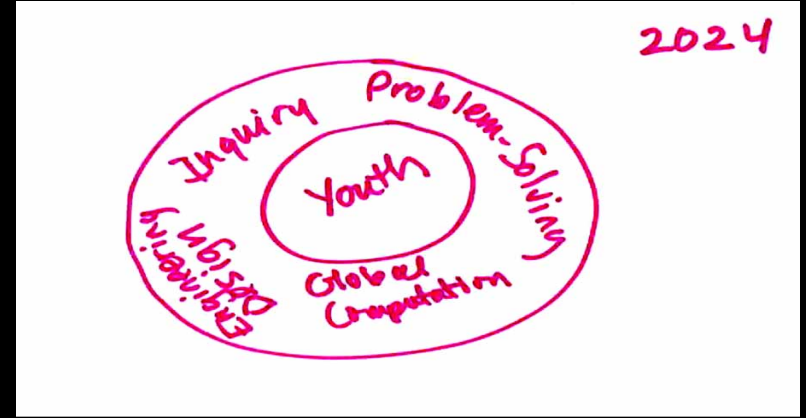
What's NORTH? Voice membership
Think Beyond Dept. Ed.
Dept. Labor Justice AmeriCorps Vista

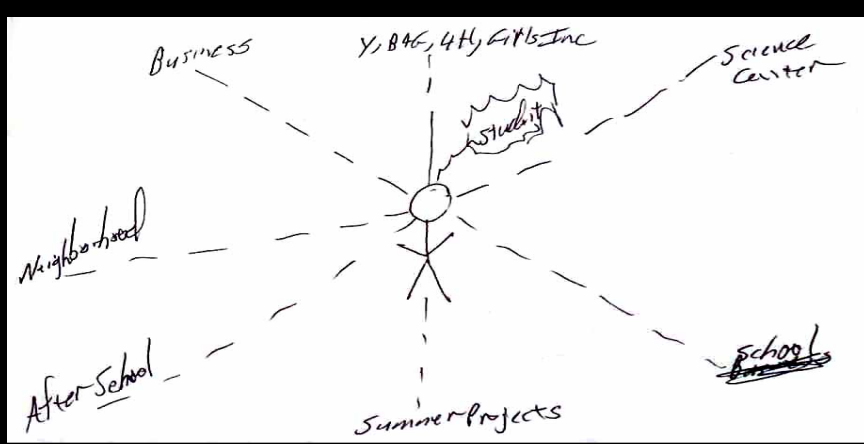
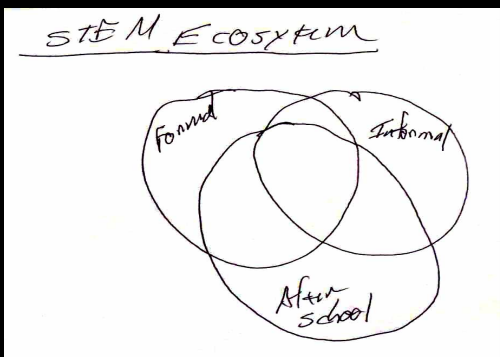
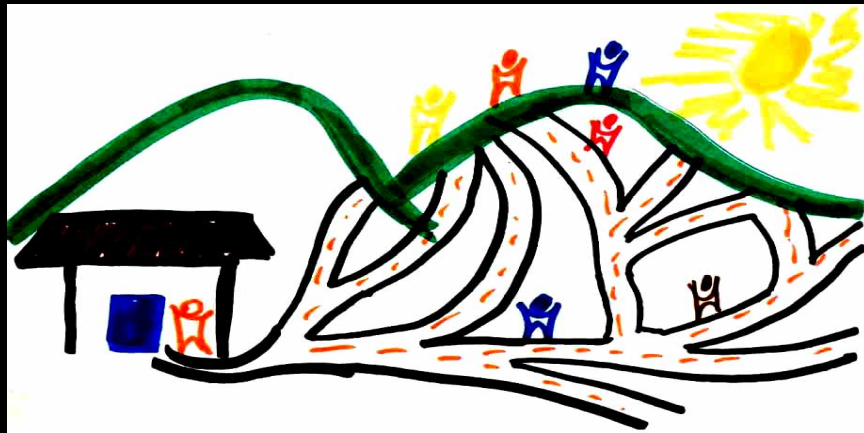
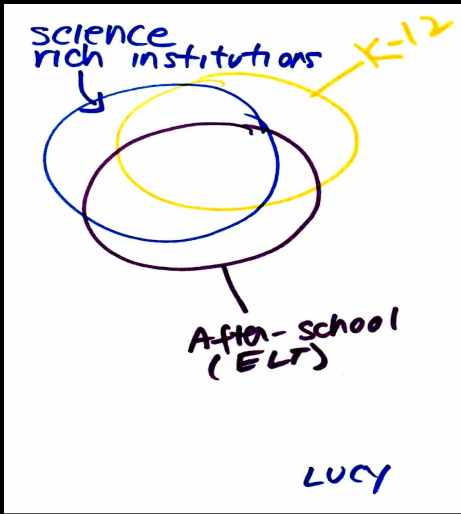
(have more latitude in regulations... think creatively)

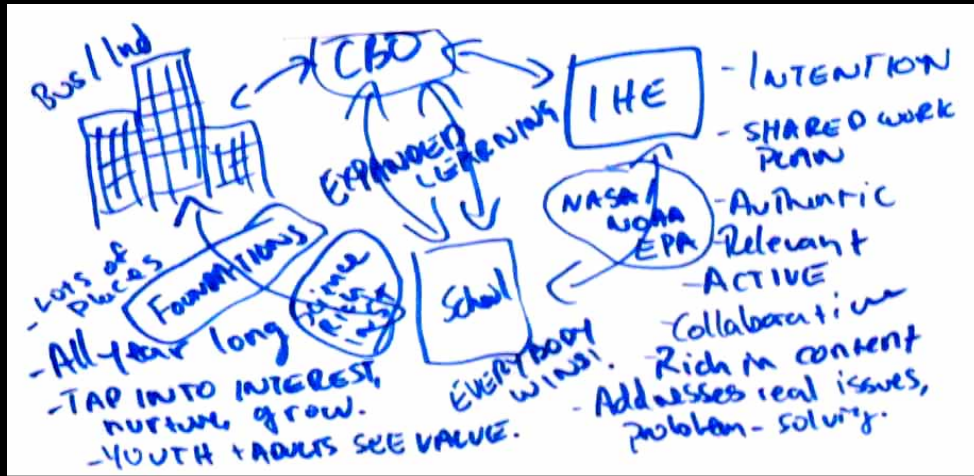
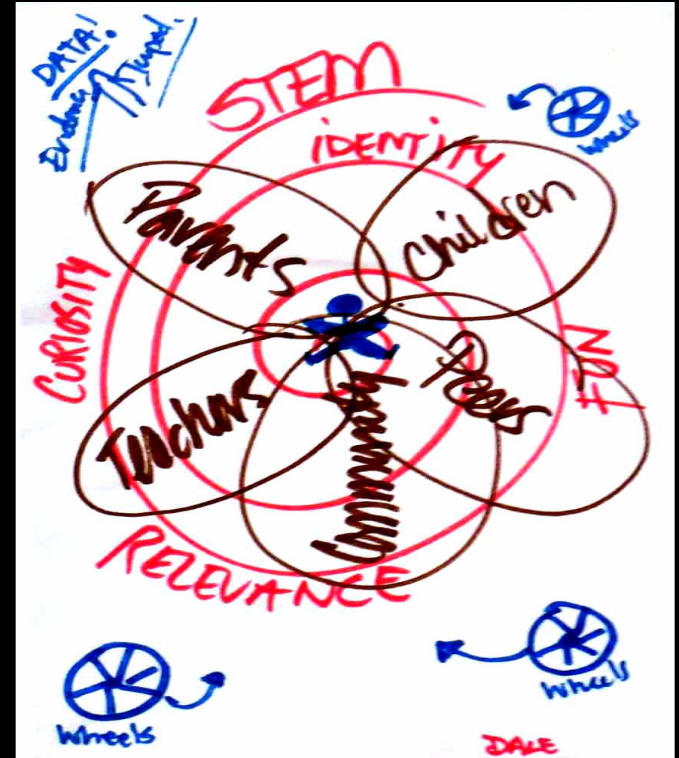
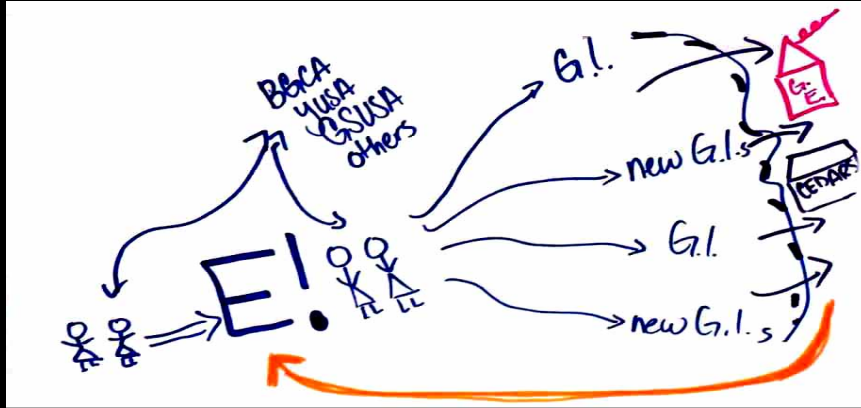








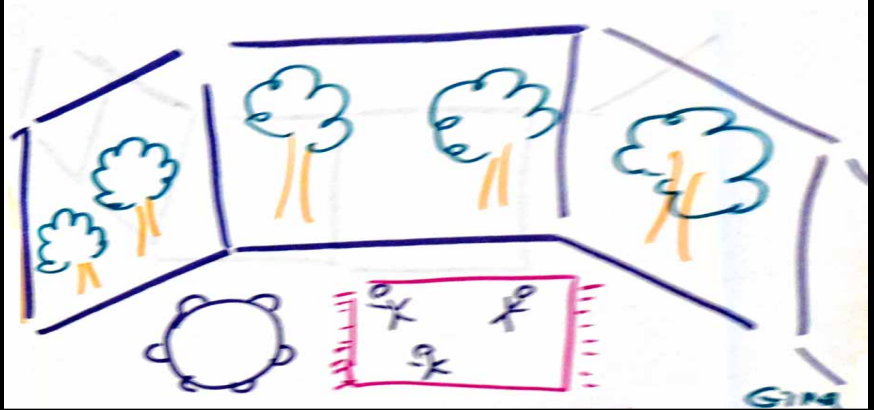
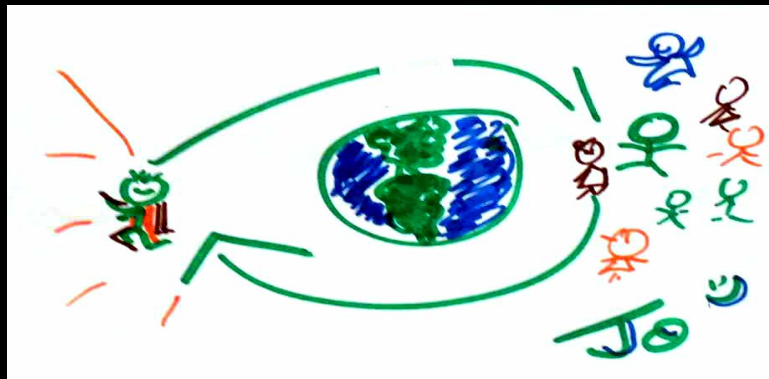
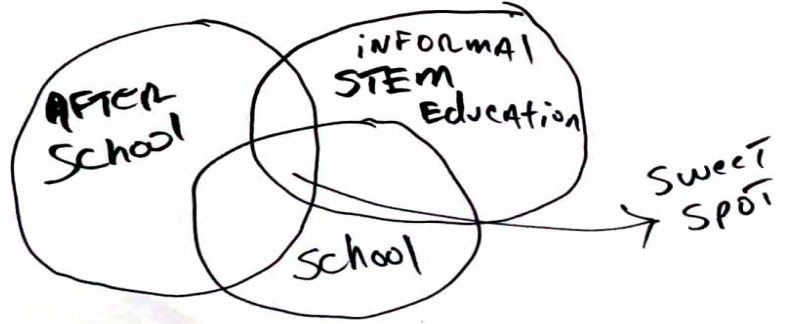




I Don't Like Science I Now Love Science !!



STEM Learning Ecosystem

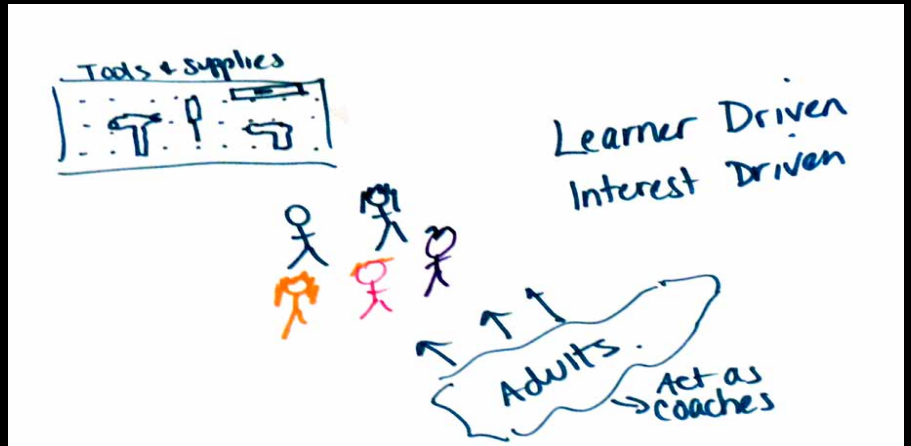
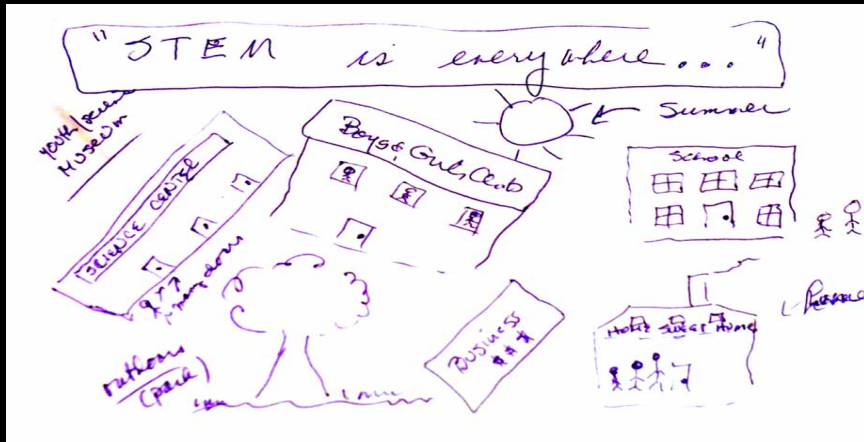


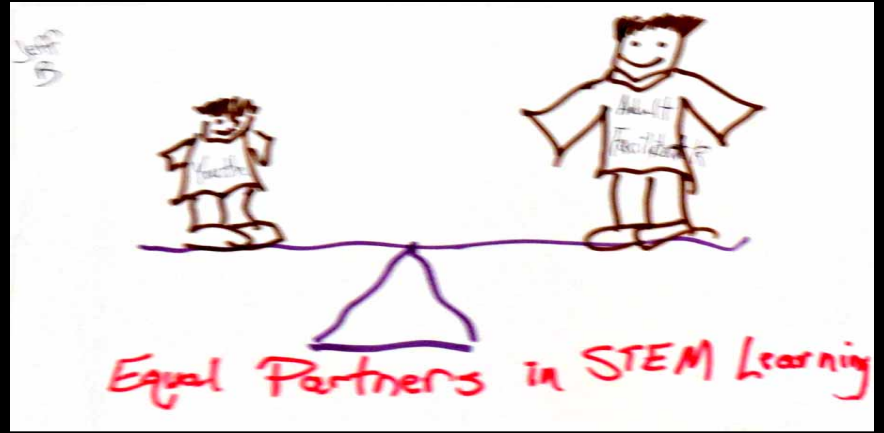
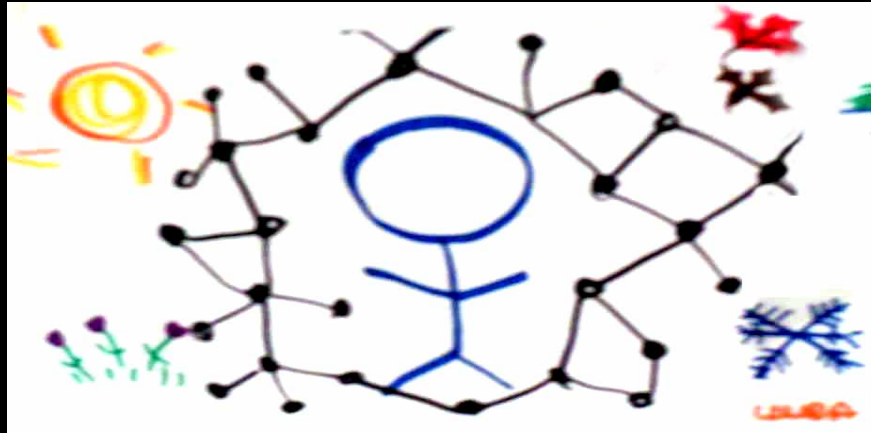
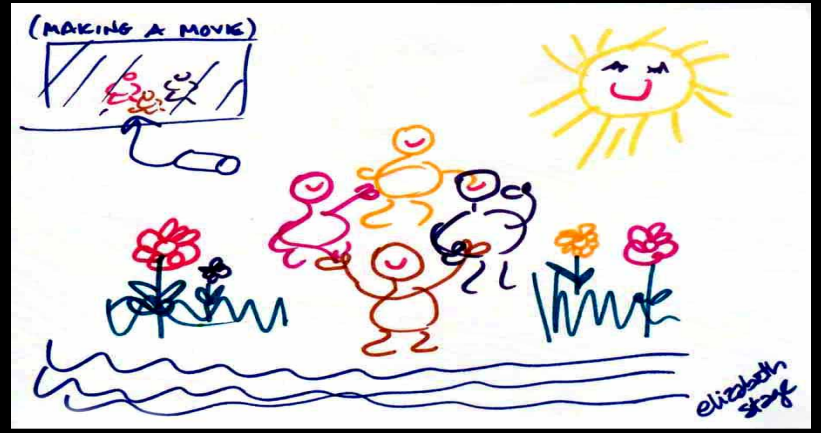
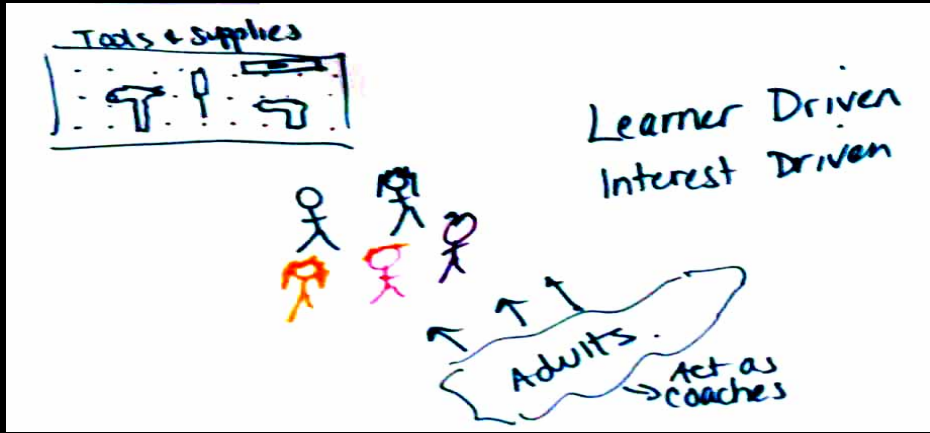
Support & Change thru time

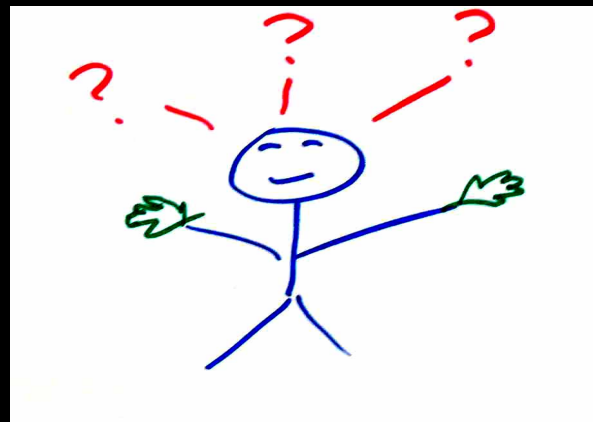
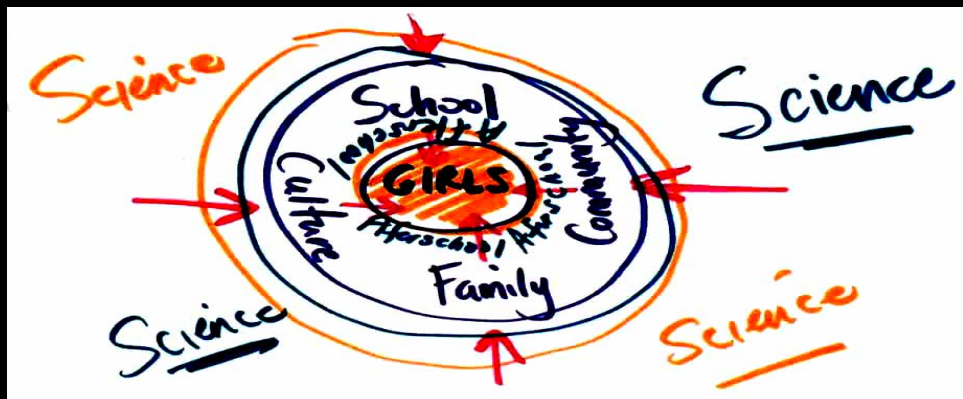
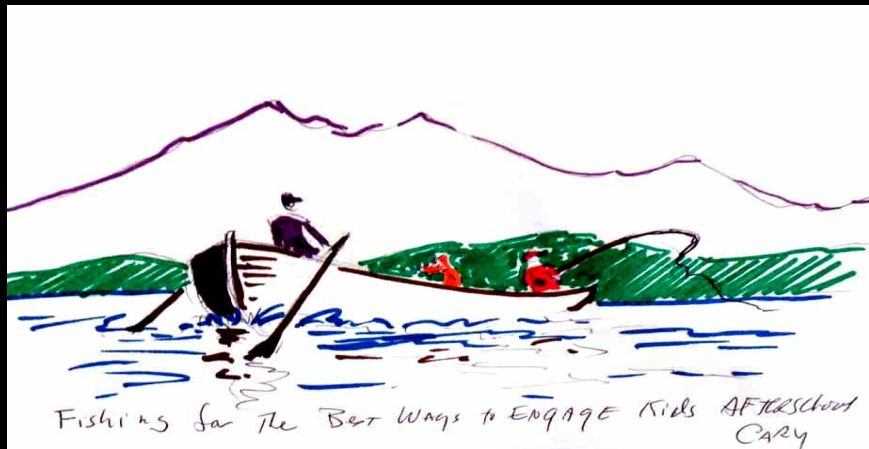
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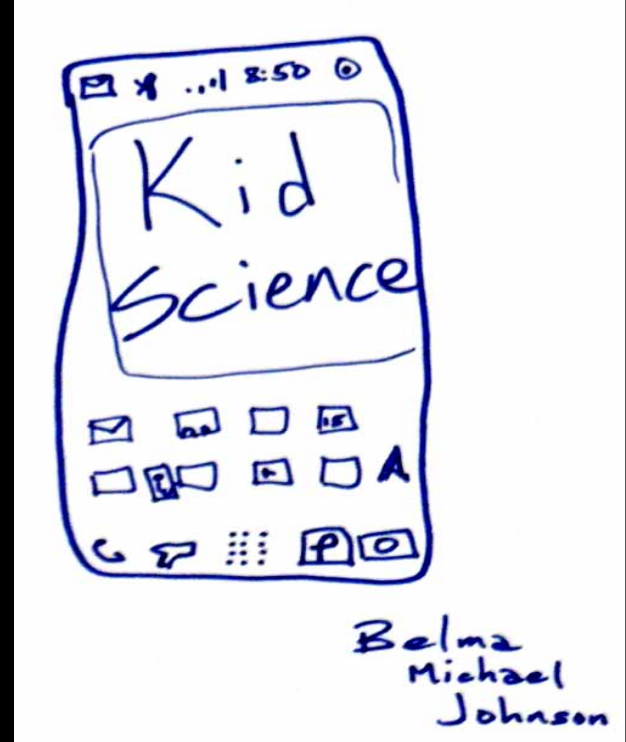
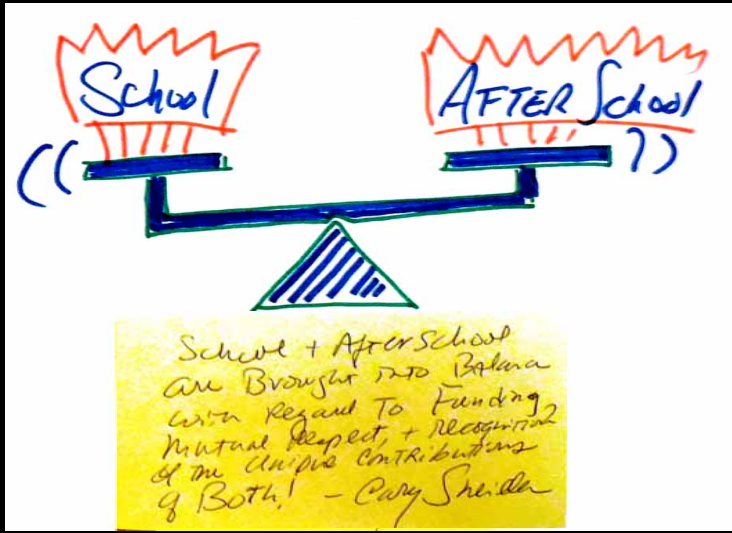


ALL KIDS HAVE THEIR HANDS ON IDEAS.











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