STEM in ISY Programs

Cynthia Bell
Numeracy & Youth Specialist
Literacy Assistance Center

NYC Department of Youth & Community Development

Access this presentation

Objectives

- To deepen understanding of STEM
- To engage in STEM activities
- To identify how STEM can be integrated into ISY programs

Start at the beginning

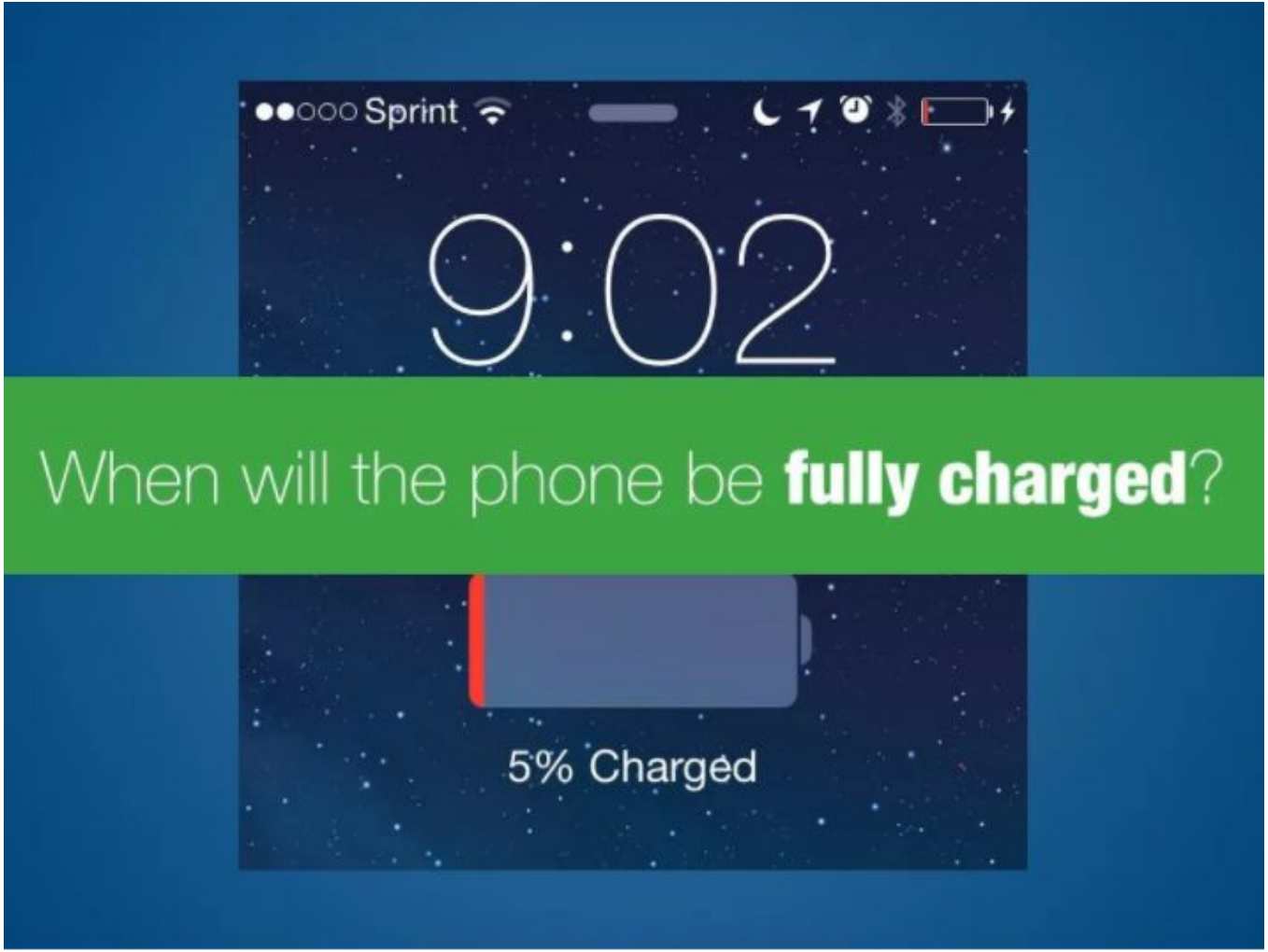
What does STEM mean to you?

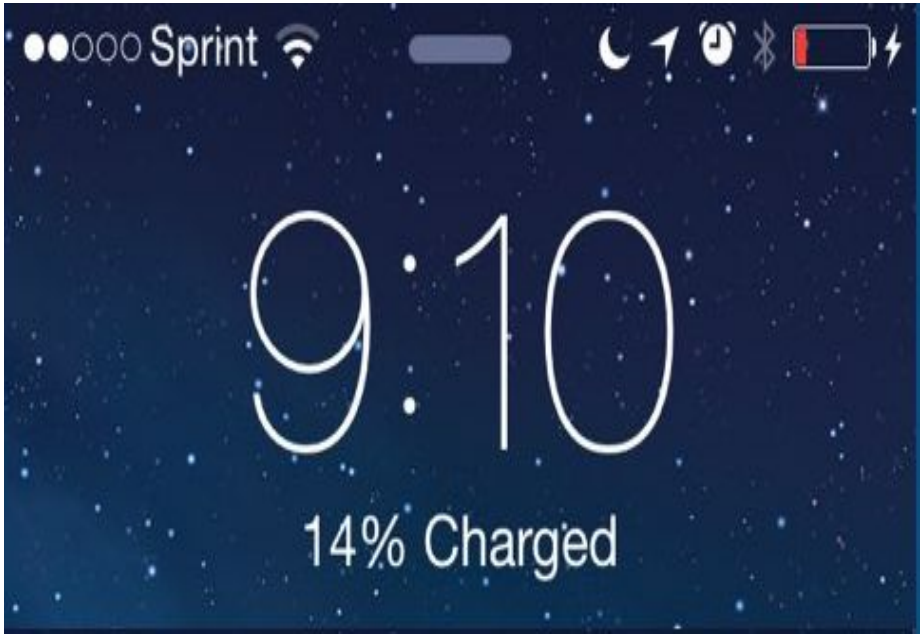
The Focus is on the LEARNERS' THINKING

STEM Skills

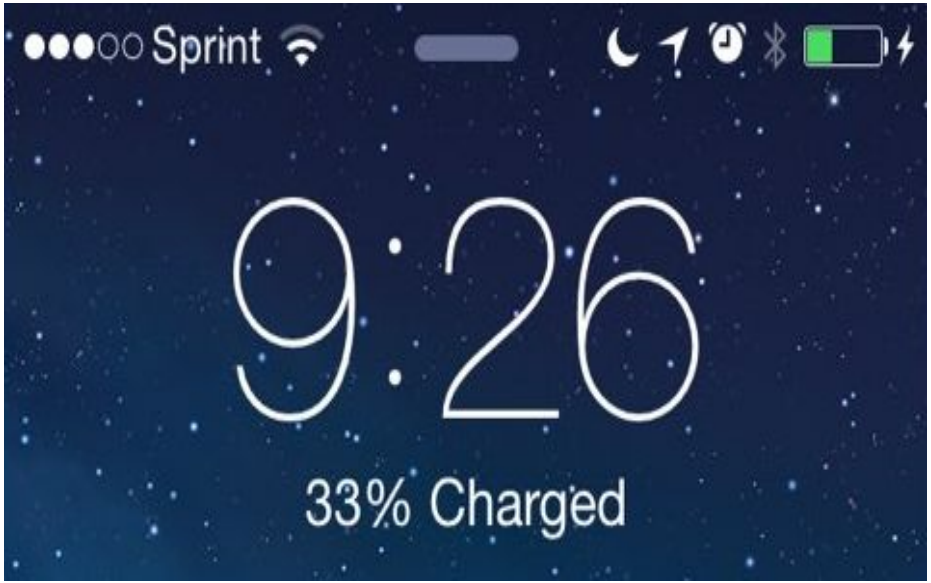
- Questioning
- Problem Solving
- Investigating
- Conjecturing/Hypothesizing
- Data-driven decision making
- Creativity
- Argumentation

Source: www.reasonandwonder.com

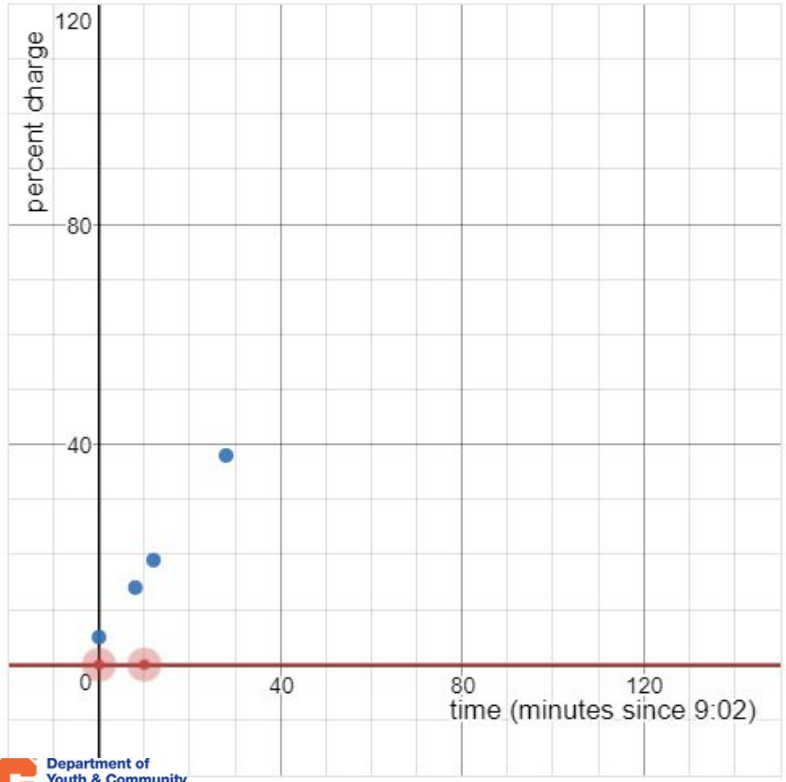

●●○○○ Sprint
9:02
When will the phone be **fully charged**?
5% Charged


Sprint
9:10
14% Charged


Sprint
9:14
19% Charged

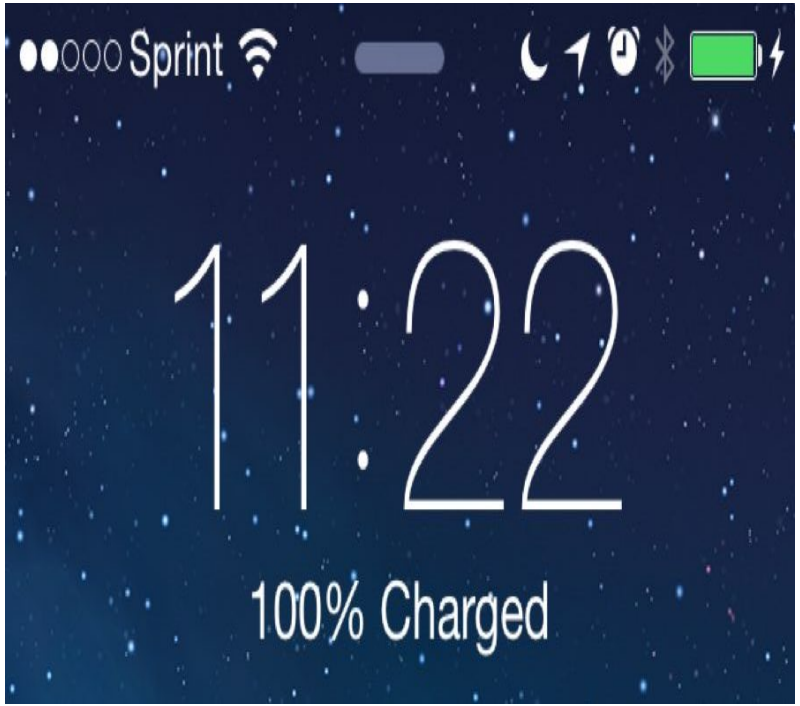

Sprint
9:26
33% Charged

Let's Model



x_1	y_1
0	5
8	14
12	19
28	.....


9:02 pm + 82 min = 10:24 pm


Sprint
11:22
100% Charged

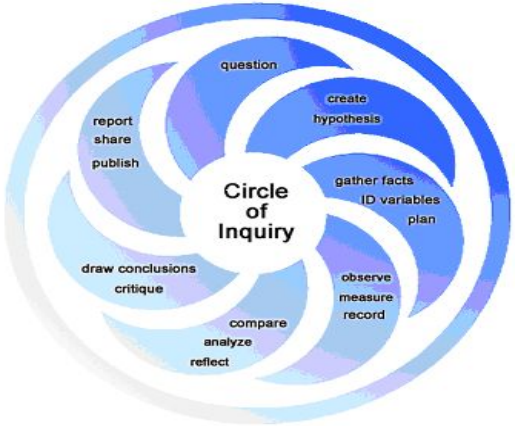
What is the difference...?

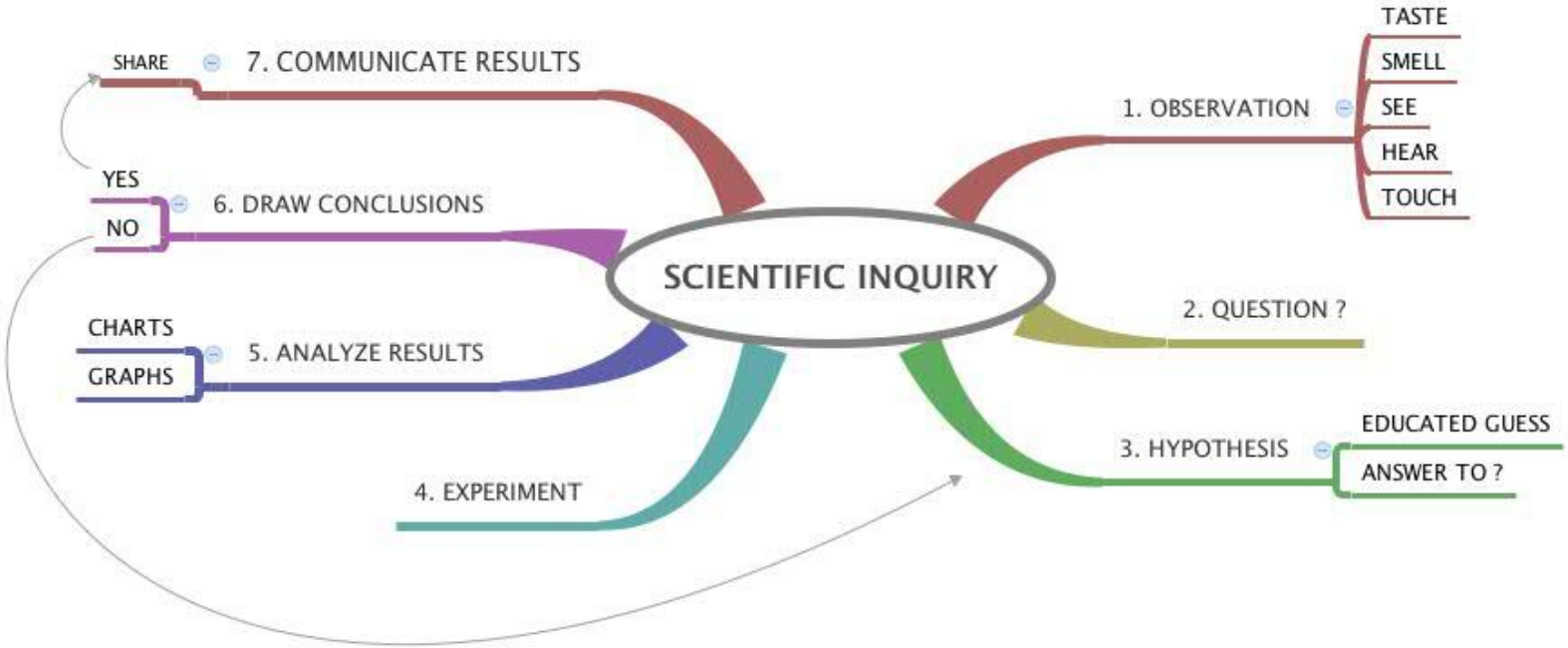
Scientific Inquiry

- For personal discovery
- It is how we learn

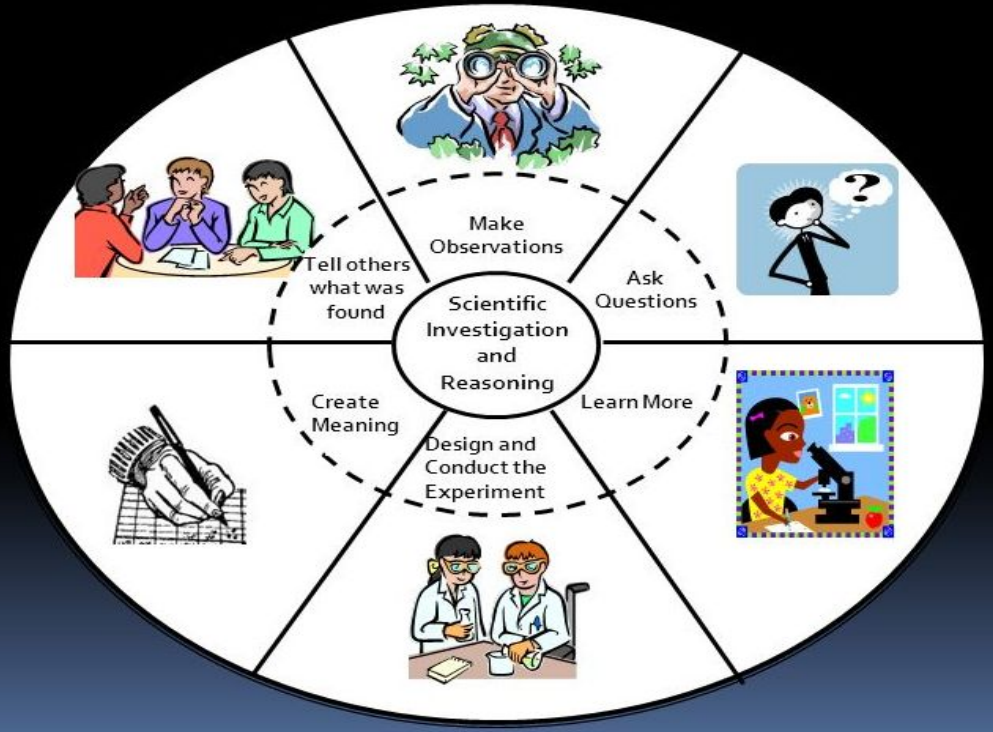
Scientific Method

- For new discoveries
- How science is moved forward




SCIENTIFIC INQUIRY
1. OBSERVATION
TASTE
SMELL
SEE
HEAR
TOUCH
2. QUESTION ?
3. HYPOTHESIS
EDUCATED GUESS
ANSWER TO ?
4. EXPERIMENT
5. ANALYZE RESULTS
CHARTS
GRAPHS
6. DRAW CONCLUSIONS
YES
NO
7. COMMUNICATE RESULTS
SHARE

Wheel of Scientific Reasoning



Perfect practice makes perfect!

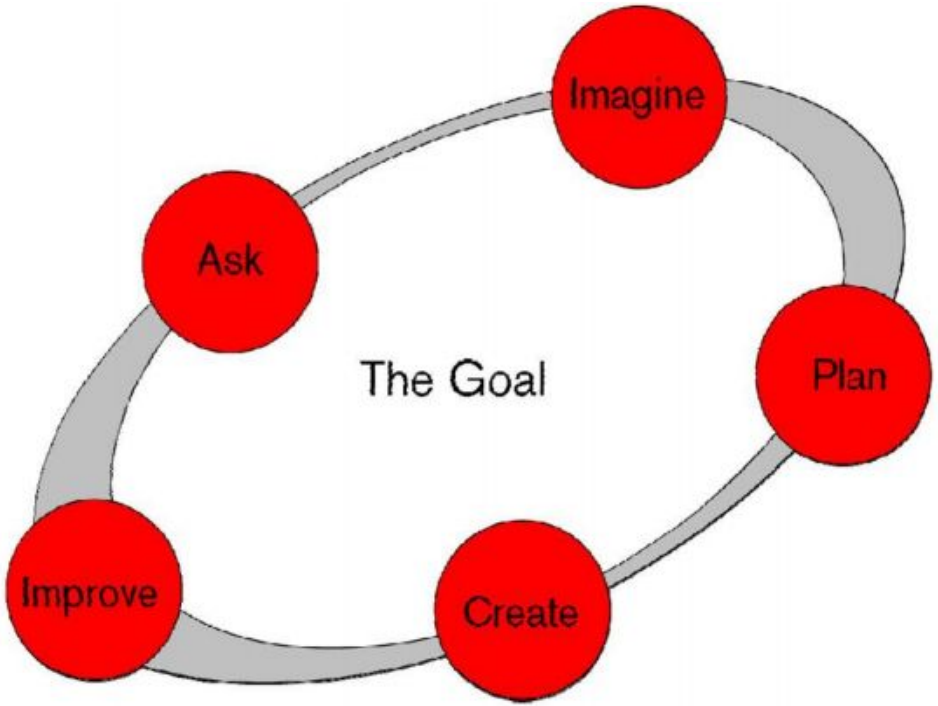
Math Practices

- Construct viable arguments and critique the reasoning of others
- Model with mathematics

Science Practices

- Using mathematics and computational thinking
- Engaging in argument from evidence

The Engineering Design Process by the Boston Museum of Science



Inquiry-Based Learning Wrap Up

- Can be used for math and science and any other content when done appropriately
- Allows for productive struggle
- Can be used to facilitate deep understanding of concepts
- Develops questioning and reasoning skills

What about you?

Please complete the evaluation.

Contact Information

Cynthia Bell
Numeracy & Youth Specialist
Literacy Assistance Center
Email: cynthiab@lacnyc.org

bit.ly/OSY-ISYTA