POCANTICO HILLS SCHOOL DISTRICT

THINK-CREATE-COLLABORATE
COMPUTER SCIENCE AND INNOVATION, K-8

BOARD OF EDUCATION PRESENTATION
JANUARY 23, 2018

ADAM BROWN
DIRECTOR OF CURRICULUM & TECHNOLOGY

BRENT HARRINGTON
PRINCIPAL

2016 ISTE STANDARDS FOR STUDENTS
(INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION)

- **1 - Empowered Learner**
  - Students take an active role in choosing, achieving and demonstrating competency in their learning goals.

- **2 - Digital Citizen**
  - Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world.

- **3 - Knowledge Constructor**
  - Students critically curate a variety of resources to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

- **4 - Innovative Designer**
  - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

- **5 - Computational Thinker**
  - Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- **6 - Creative Communicator**
  - Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

- **7 - Global Collaborator**
  - Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.
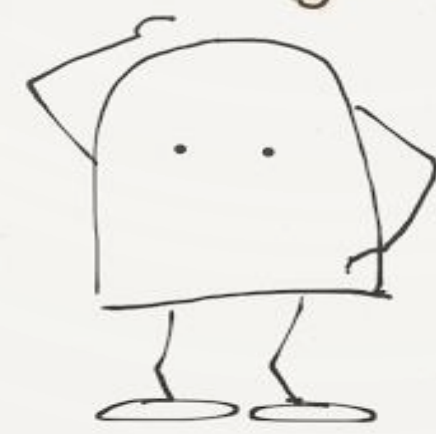
ENGINEERING DESIGN PROCESS

Understand
Make sense of and **learn about the problem.** Investigate what related work has been done before, and **determine if the** initially identified problem is really a problem.

Empathise
Gain deep **understanding** of intended **user's experience**

Define
Analyse collected data and **identify a user's need** to address with the design solution
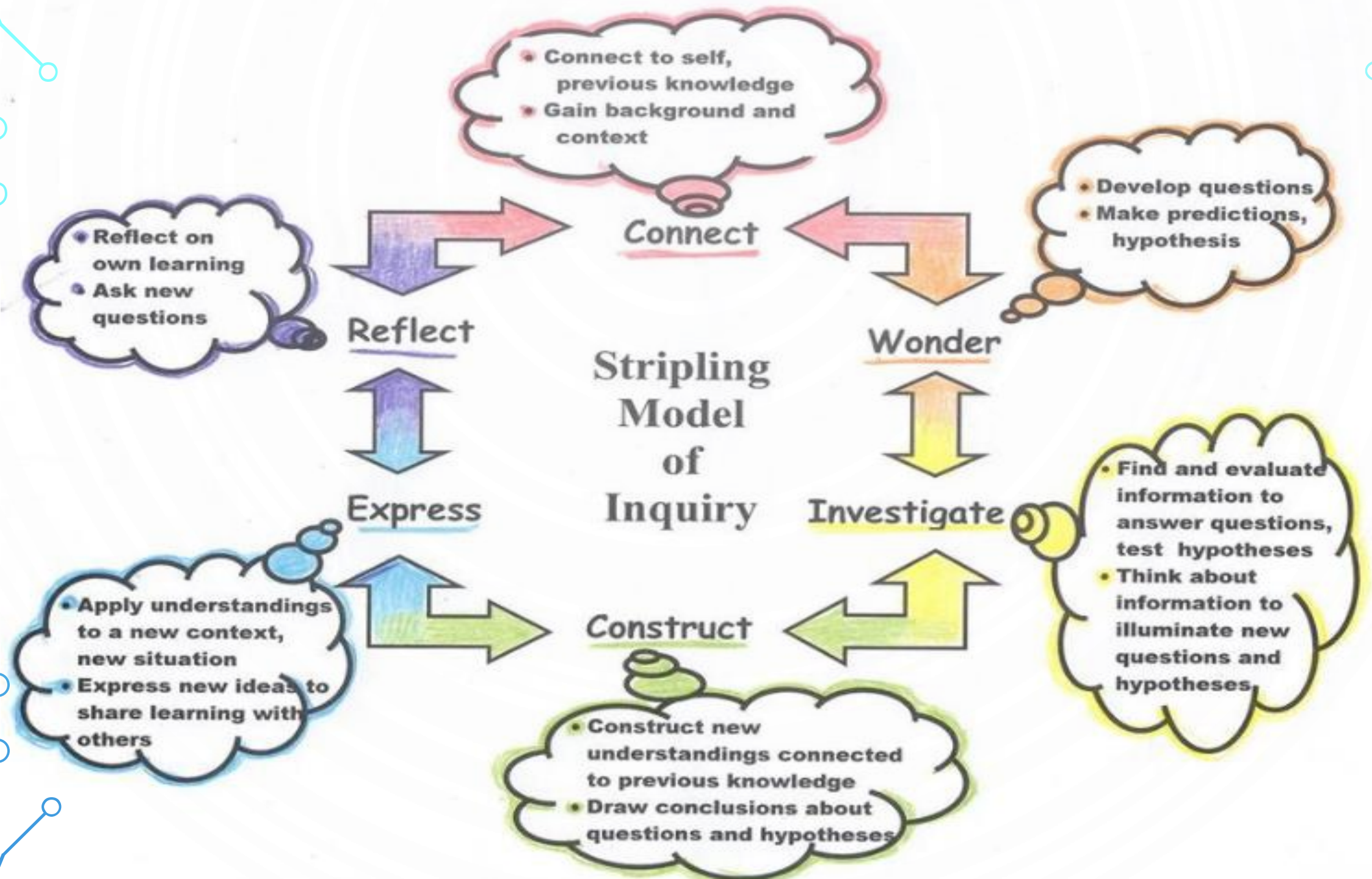
Ideate
Diverge on a large quantity of possible **ideas** that could evolve into solutions

Prototype
Develop some of the **ideas** into tangible objects

Test
Evaluate finished objects **with their users** and **collect** input for improvement

Stripling Model of Inquiry

Connect
- Connect to self, previous knowledge
- Gain background and context

Wonder
- Develop questions
- Make predictions, hypothesis

Investigate
- Find and evaluate information to answer questions, test hypotheses
- Think about information to illuminate new questions and hypotheses

Construct
- Construct new understandings connected to previous knowledge
- Draw conclusions about questions and hypotheses

Express
- Apply understandings to a new context, new situation
- Express new ideas to share learning with others

Reflect
- Reflect on own learning
- Ask new questions

Computer Science Components in Elementary School
Implementation Phase 2017-2018

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade
Kodable & Dash and Dot	Kodable & Dash and Dot	Code.org	CS-First: Scratch	CS-First: Scratch

Computer Science Components in Middle School
Design Phase 2017-2018

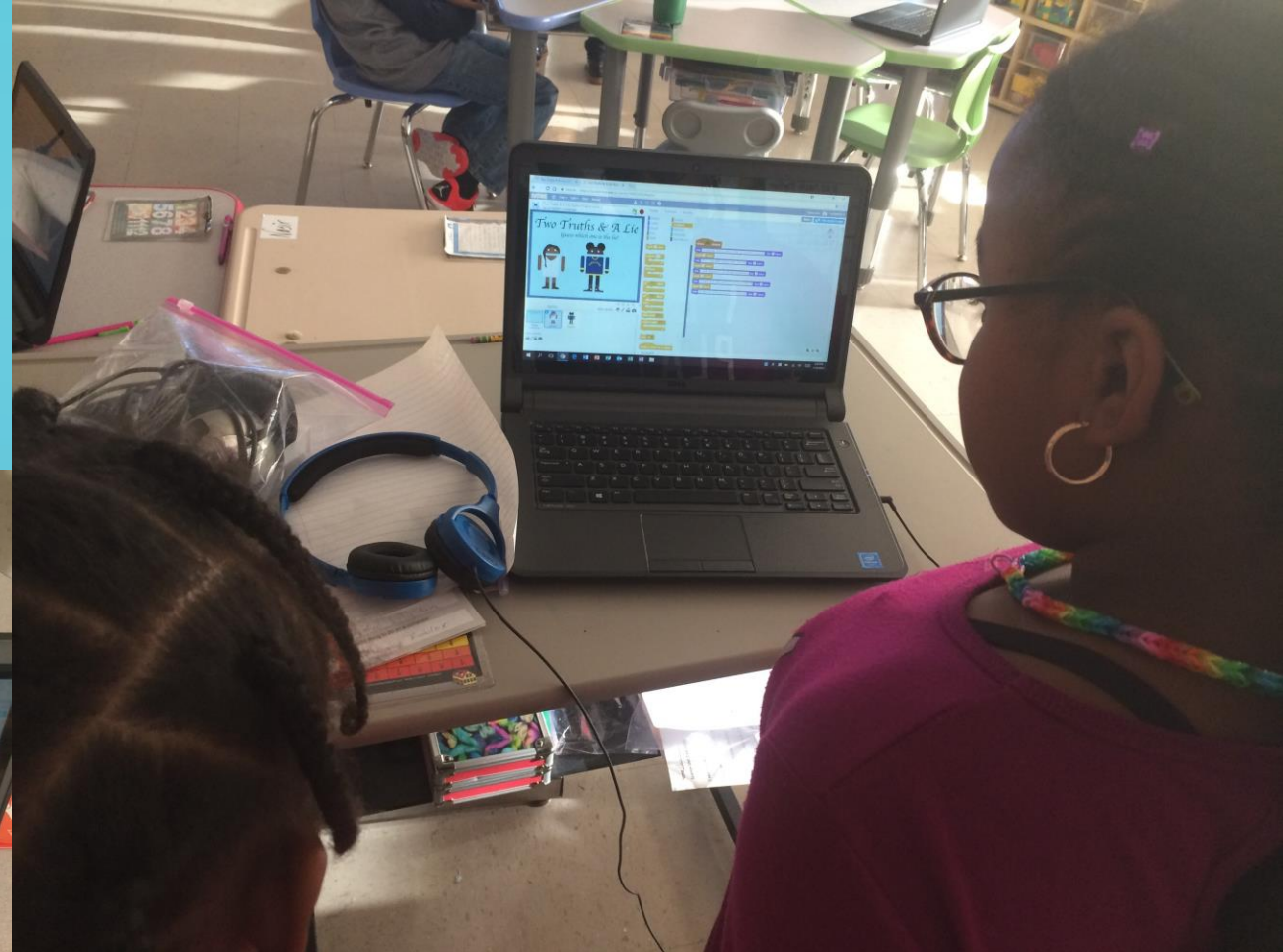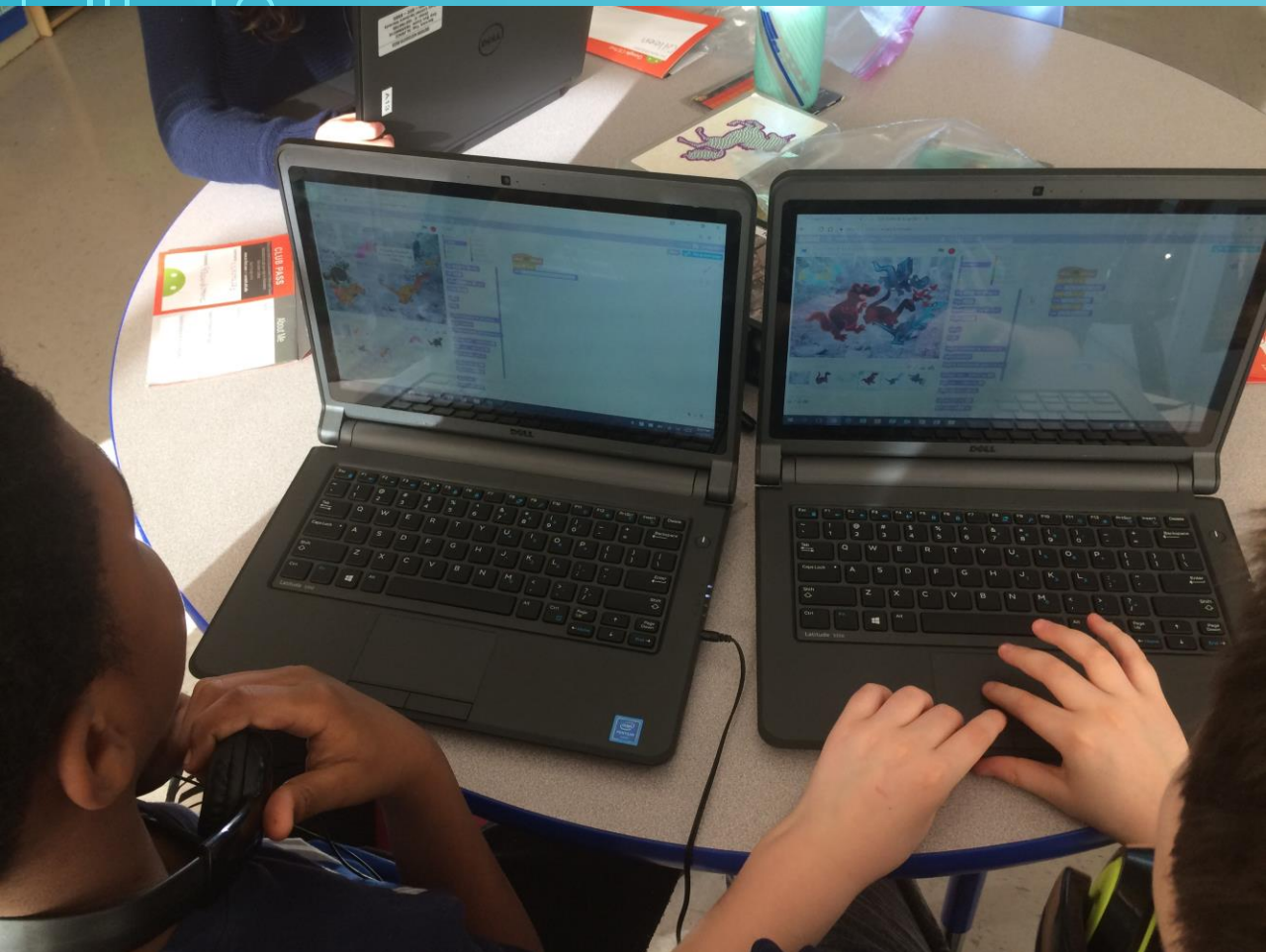| Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade
Genius Hour CS-First: Scratch	Genius Hour CS-First: Scratch	STREAM Innov&Design Program Lang	STREAM Innov&Design Program Lang

KINDERGARTEN
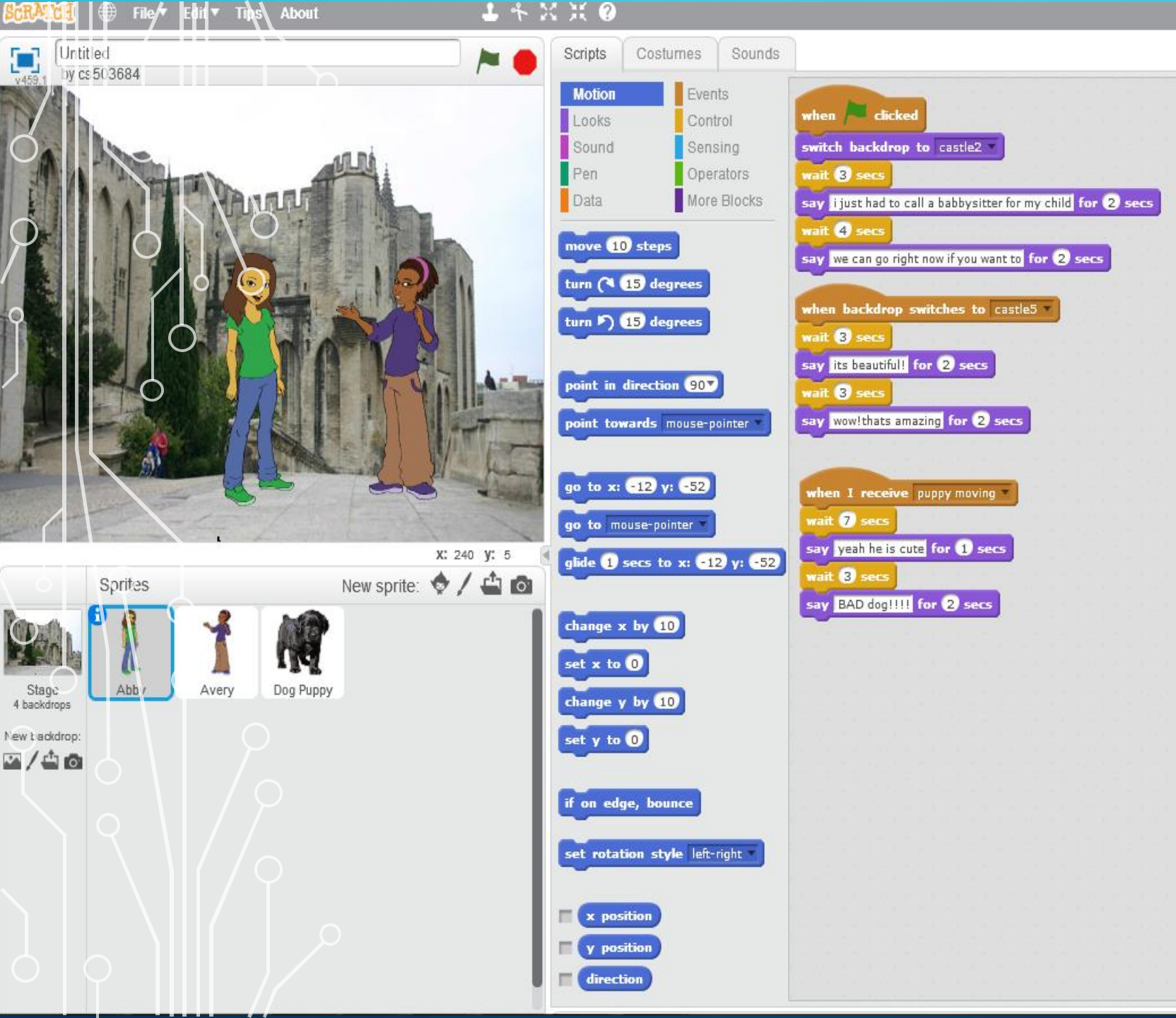
KODABLE

GRADE 1

DASH

COMPUTATIONAL THINKER

GRADE 2

CODE.ORG

GRADE 4

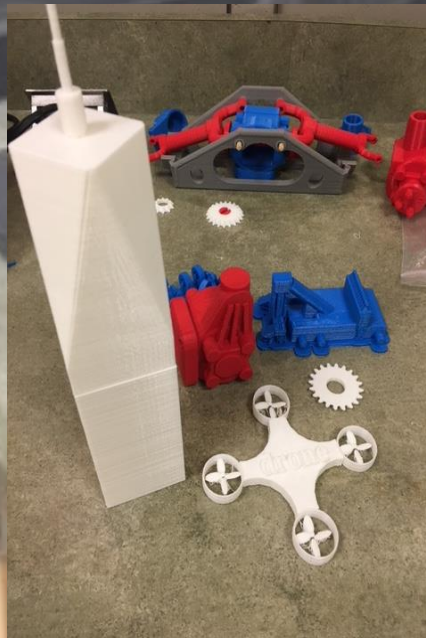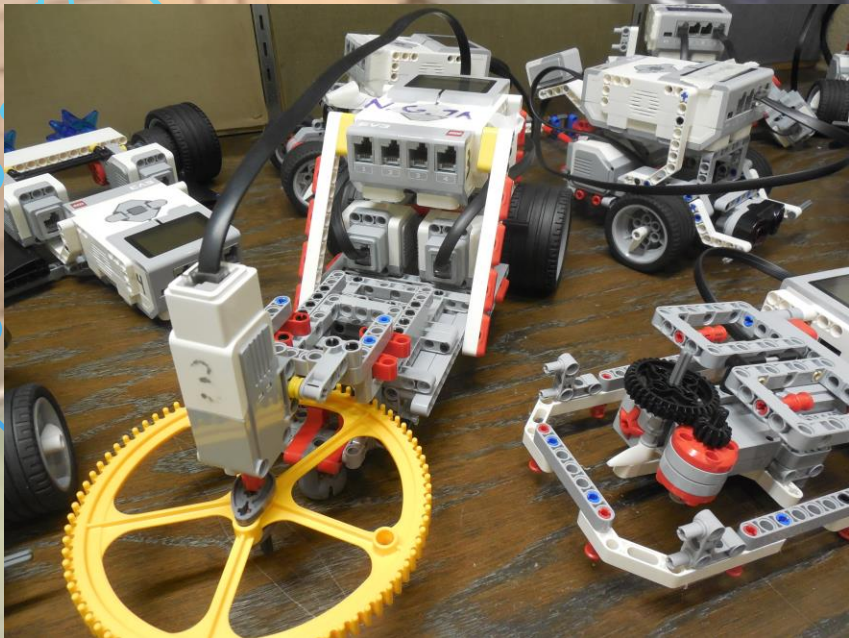COLLABORATOR AND COMMUNICATOR

SCRATCH

EXTRACURRICULAR OFFERINGS

ROBOTICS

3D PRINTING

POCADEMY

PTA NIGHT

AUTHENTICITY OF LEARNING

The pursuit of passion projects and the exploration of real-world problems

Pocantico Middle School's
Genius Hour and Innovation & Design

Redefining Teaching and Learning at Pocantico

Teaching that Engages

Culture that Empowers

AUTHENTIC LEARNING

Technology that **Enables**

Outcomes that Matter

CULTURE THAT EMPOWERS

✳ Collaboration

✳ Creativity & Exploration

✳ Growth Mindset

✳ Emotional Intelligence

ISTE Student Standard 2 (Digital Citizen): Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

ISTE Student Standard 7 (Global Communicator): Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally

TEACHING THAT ENGAGES

❋ Voice & Choice

❋ Student Agency

ISTE Student Standard 1 (Empowered Learner): Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
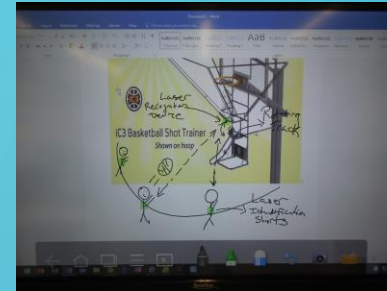
ISTE Student Standard 3 (Knowledge Constructor): Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE Student Standard 4 (Innovative Designer): Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

OUTCOMES THAT MATTER


✳ Oral & Written Communication

✳ Critical Thinking

ISTE Student Standard 3 **(Knowledge Constructor):** **Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.**

ISTE Student Standard 5 **(Computational Thinker):** **Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.**

ISTE Student Standard 6 **(Creative Communicator):** **Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats and digital media appropriate to their goals.**
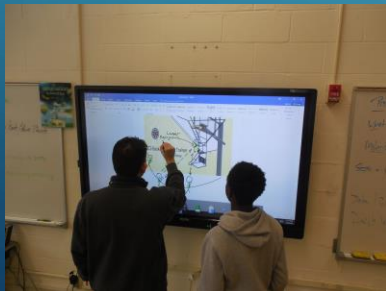
TECHNOLOGY THAT ENABLES

✳ Ubiquitous use of Technology

  ✳ Digital citizenship

  ✳ Product-oriented/STEM supported

ISTE Student Standard 1 (Empowered Learner): Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE Student Standard 2 (Digital Citizen): Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

ISTE Student Standard 4 (Innovative Designer): Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

ISTE Student Standard 6 (Creative Communicator): Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats and digital media appropriate to their goals.