Proposed Technology Budget 2018-2019

Chappaqua Schools

March 28, 2018

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Director of Technology & Innovation

Adopting the Innovative Mindset

Technology Department Vision

The Chappaqua Central School District will create an innovative, agile atmosphere of learning, that leverages advanced instructional technologies to support active learning environments. We will continually improve our infrastructure, systems and support to advance district instructional visions and goals.

Technology Department Operational Questions

- How do we adapt our technology procurement & implementation strategy (infrastructure, personnel, hardware, software, & web-based applications) to align with the vision of the technology department and the district's strategic questions?

- What are our operational processes and long term strategies? How can we adapt them to support district initiatives and effectively utilize our resources?

- How can we be provided with training opportunities for new technology? How do we teach it to others?
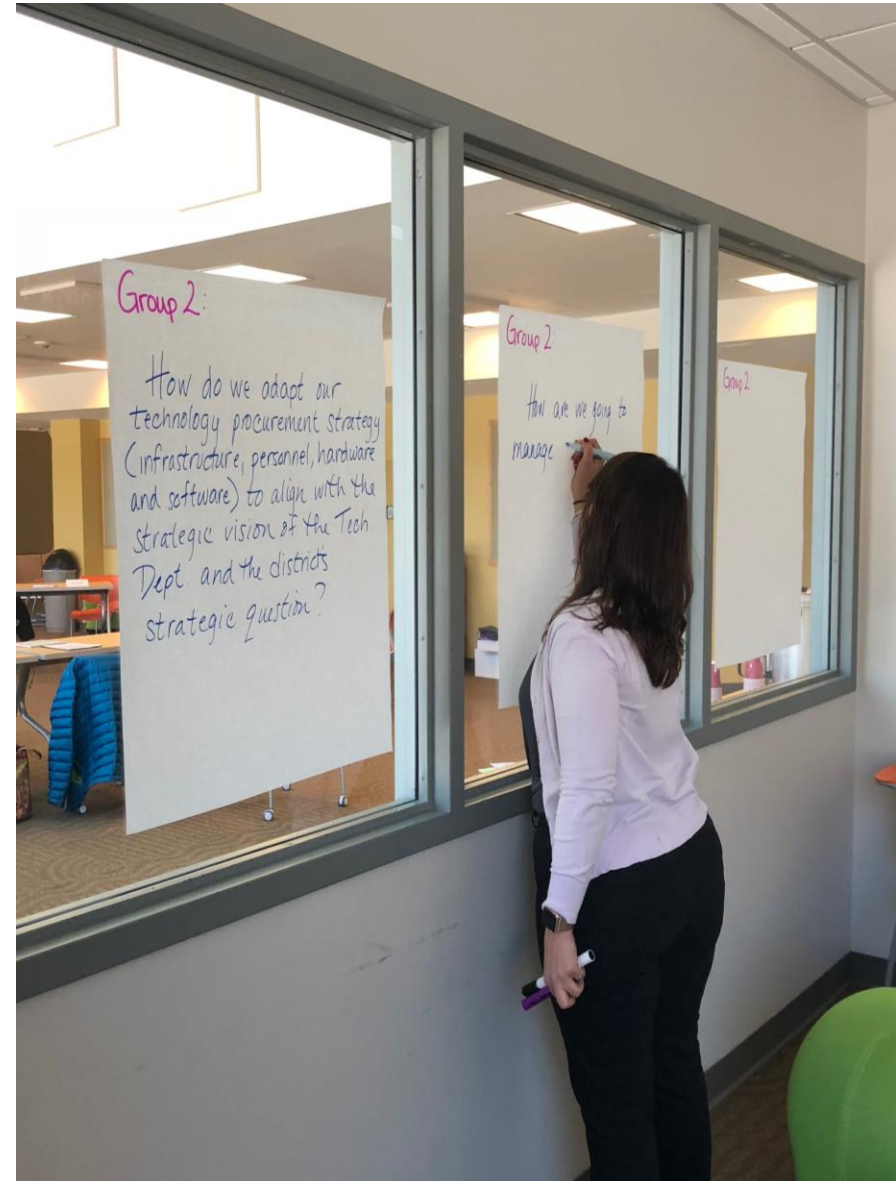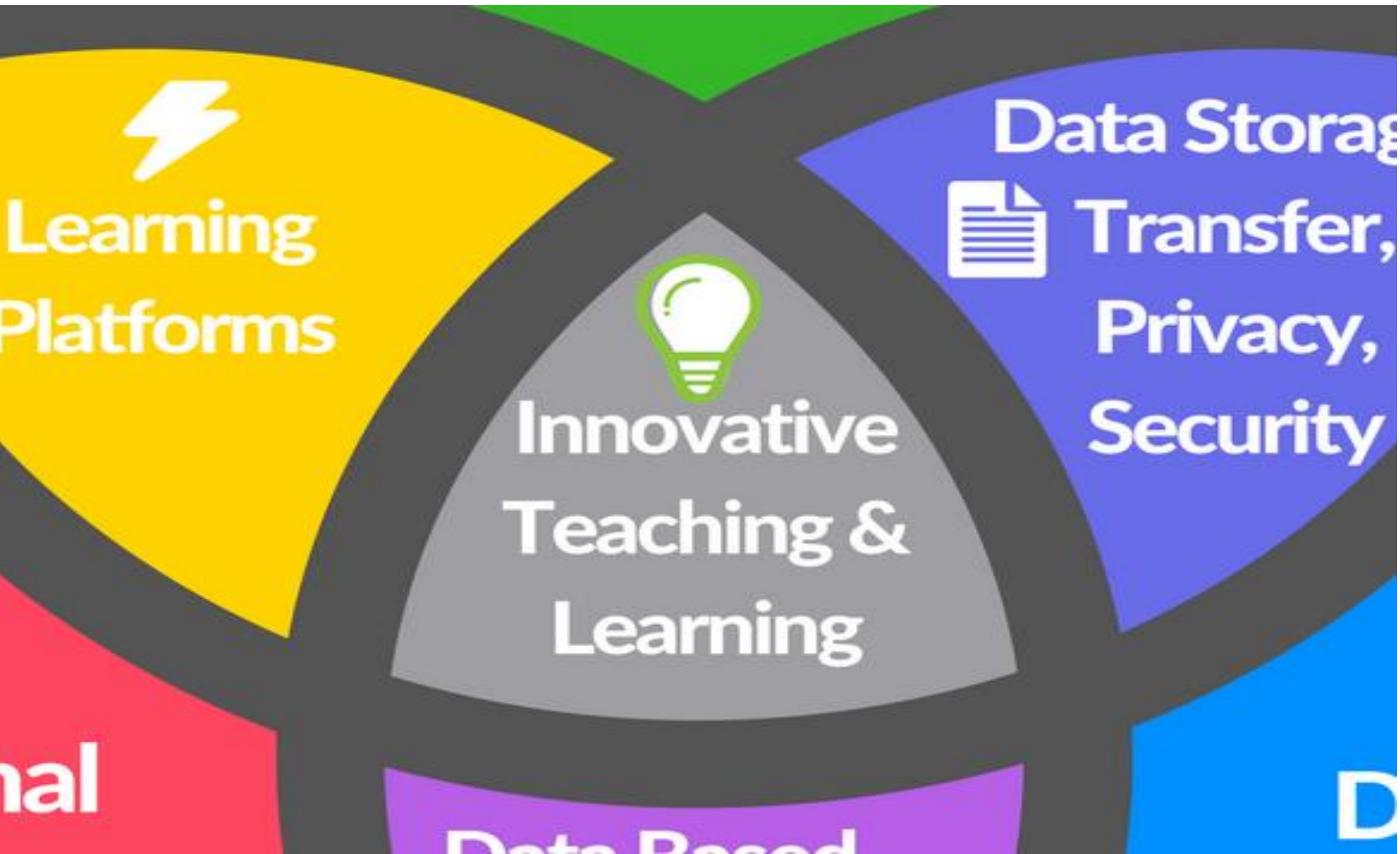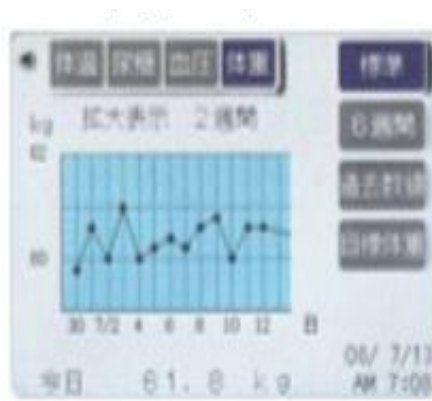
Components of a Technology Budget
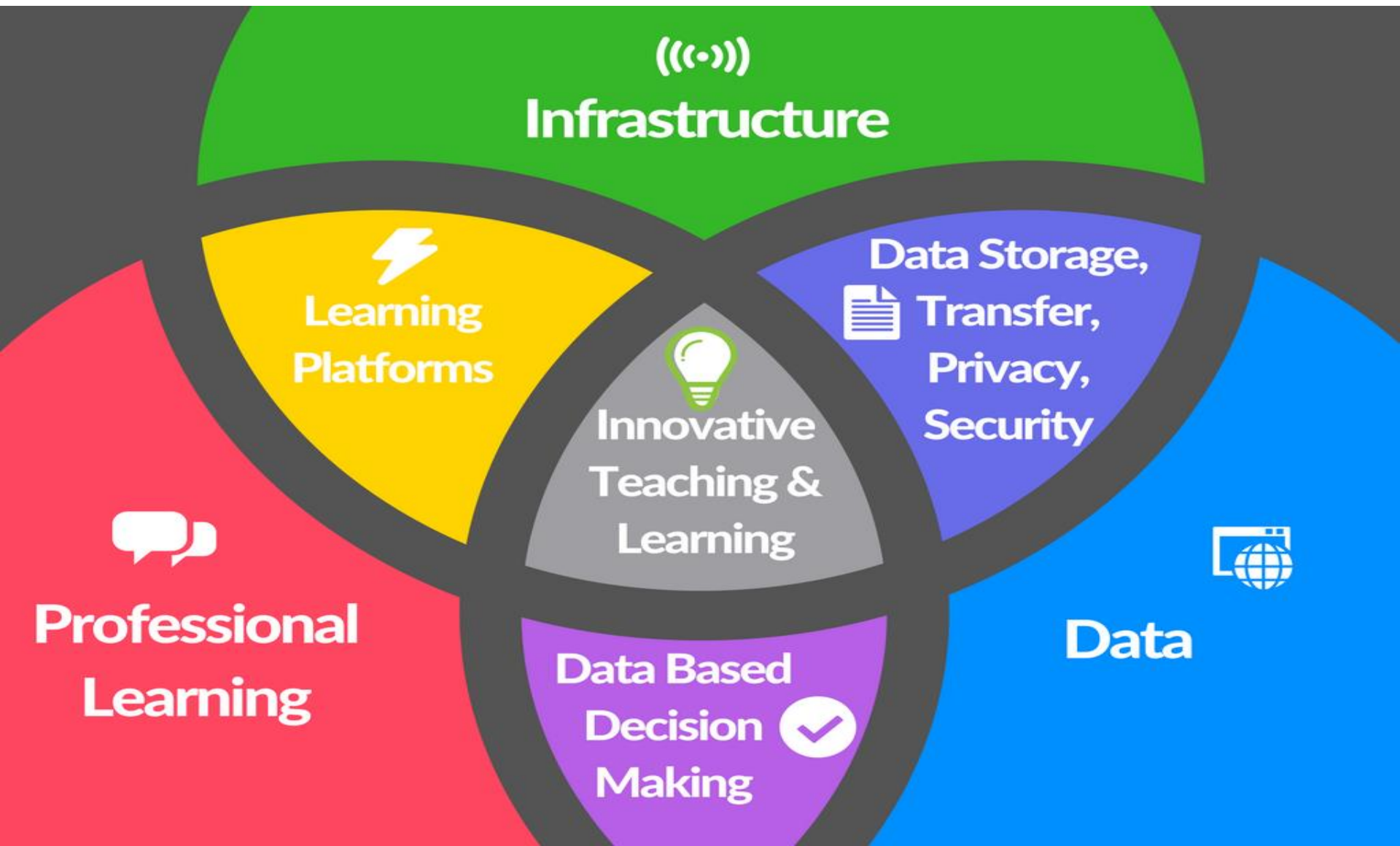
Innovative Teaching & Learning

Creating spaces, leveraging technology, and facilitating learning experiences

Why?

Technology Advancements

1 The accelerating pace of change …

| Agricultural Revolution | → 8,000 years → | Industrial Revolution | ← 120 years → | Light-bulb | ← 90 years → | Moon landing | ← 22 years → | World Wide Web | ← 9 years → | Human genome sequenced |

2 … and exponential growth in computing power …

Computer technology, shown here climbing dramatically by powers of 10, is now progressing more each hour than it did in its entire first 90 years

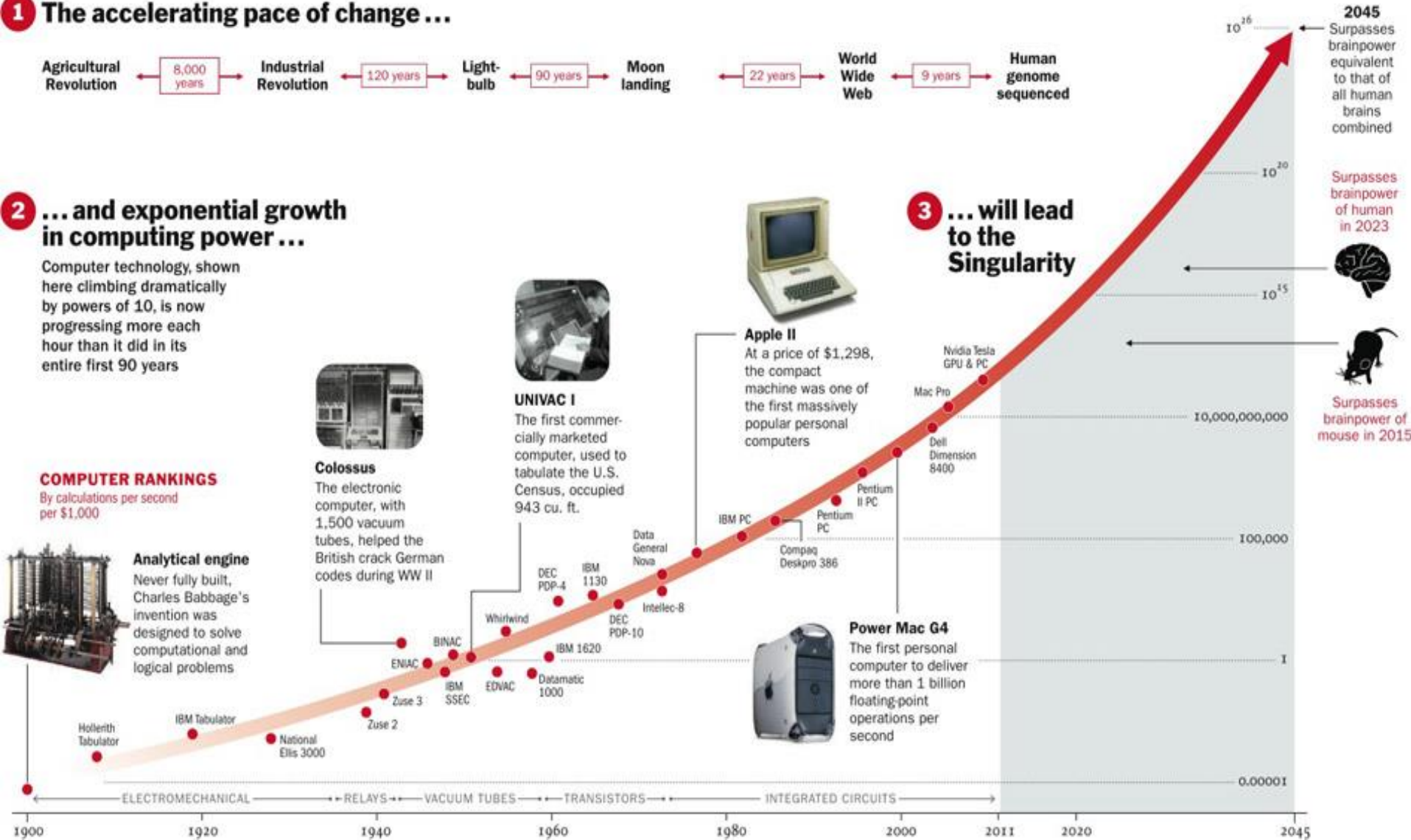**COMPUTER RANKINGS**
By calculations per second per $1,000

Analytical engine
Never fully built, Charles Babbage's invention was designed to solve computational and logical problems

Colossus
The electronic computer, with 1,500 vacuum tubes, helped the British crack German codes during WW II

UNIVAC I
The first commercially marketed computer, used to tabulate the U.S. Census, occupied 943 cu. ft.

Apple II
At a price of $1,298, the compact machine was one of the first massively popular personal computers

3 … will lead to the **Singularity**

Power Mac G4
The first personal computer to deliver more than 1 billion floating-point operations per second

2045
Surpasses brainpower equivalent to that of all human brains combined

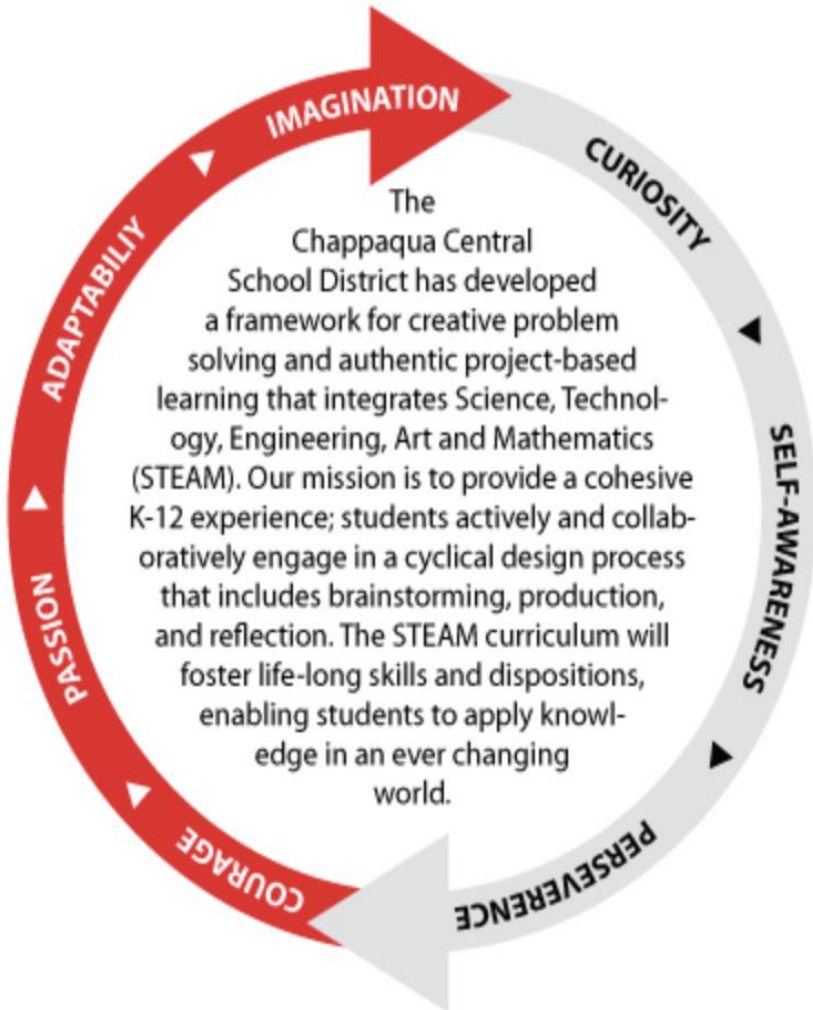Surpasses brainpower of human in 2023

Surpasses brainpower of mouse in 2015

Nvidia Tesla GPU & PC
Mac Pro
Dell Dimension 8400
Pentium II PC
Pentium II PC
Pentium PC
IBM PC
Compaq Deskpro 386
Data General Nova
DEC PDP-4
IBM 1130
Intellec-8
DEC PDP-10
Whirlwind
IBM 1620
BINAC
ENIAC
EDVAC
Datamatic 1000
IBM SSEC
Zuse 3
Zuse 2
IBM Tabulator
National Ellis 3000
Hollerith Tabulator

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ELECTROMECHANICAL — RELAYS — VACUUM TUBES — TRANSISTORS — INTEGRATED CIRCUITS

1900 1920 1940 1960 1980 2000 2011 2020 2045

How do we teach skills in our classrooms?

- **Student-Centered Learning Skills (knowing how to learn and problem solve)**
  - Process Skills - Dispositional Skills - Thinking Skills
- **Application Skills (knowing how to apply information to produce a solution)**
- **Content Knowledge (knowing the core information)**

STEAM

IMAGINATION

CURIOSITY

ADAPTABILIY

SELF-AWARENESS

PASSION

COURAGE

PERSEVERENCE

The Chappaqua Central School District has developed a framework for creative problem solving and authentic project-based learning that integrates Science, Technology, Engineering, Art and Mathematics (STEAM). Our mission is to provide a cohesive K-12 experience; students actively and collaboratively engage in a cyclical design process that includes brainstorming, production, and reflection. The STEAM curriculum will foster life-long skills and dispositions, enabling students to apply knowledge in an ever changing world.

Computer Science

- Develop a K-12 integrated Computer Science curriculum infused throughout our curriculum

Digital Learning Goals

Digital Learning Goal #1 - Support Chappaqua students to be thoughtful learners and critical thinkers by providing a technology-infused, active learning environment.

Digital Learning Goal #2 - Prepare Chappaqua students to become collaborative citizens.

Digital Learning Goal #3: Create an environment that increases the value and efficiency of learning time.

Digital Learning Goals

Chappaqua Central School District 1:1 Planning Summary					
Grade	17-'18	18-'19	19-'20	20-'21	21-'22
K & 1			Planning	Implementation	Evaluation
2		Planning	Implementation	Evaluation	
3 & 4	Planning	Implementation	Evaluation		
5 & 6	Planning	Implementation	Evaluation		
7 & 8		Planning	Implementation	Evaluation	
9-12		Planning*	Implementation*	Evaluation*	

*HGHS has a BYOD policy. There are also carts of computers students can borrow laptops from.

The next phase is to allocate school computers on a full-time basis to students that don't opt-in to the BYOD program.

Space

Professional Learning
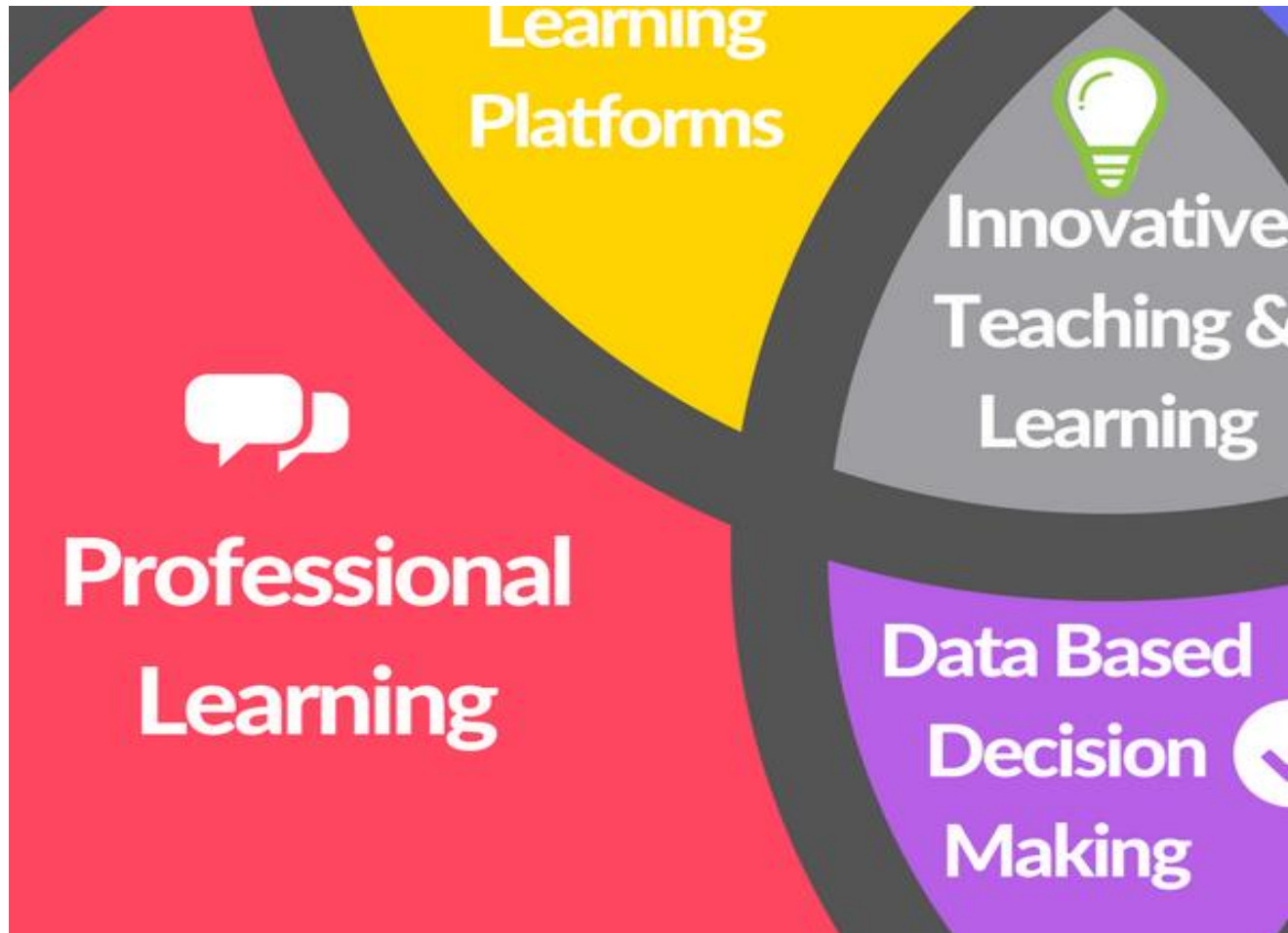
Professional Learning Opportunities

- Advanced Technology Fellows, Innovation Fellows, Collaborative Teaching Fellows, Teacher Action Research

- STEAM Learning Team, Summer Camp, Collaborative

- Classroom & Teacher Coaching

- Online & Hybrid PBL, STEAM & Technology In-Service Courses

- 3 & 4 Elementary School Computer Science Collaboration

- Professional Development Days: Learning Symposium, Canvas, Google Drive

- Global Learning Center Thought Leaders

- Elementary School Book Study Learning Teams (AMPLIFY, Habitudes)

- Summer Technology Institutes - Digital Learning Initiative

- New Teacher Mentorship & Digital Learning

Technology Professional Development Focus

- Grades 3 & 4 – 1:1 Computing & Digital Learning
- Grades 5 & 6 – 1:1 Computing & Digital Learning
- CS/STEAM & Maker Learning – Innovative Space
- Learning Management Systems – Canvas and Google Classroom
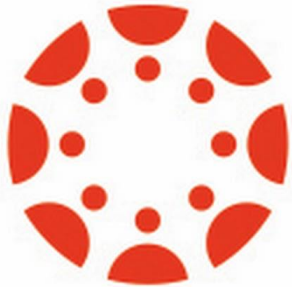- Cloud Computing Platforms – GSuite & Office 365

Infrastructure
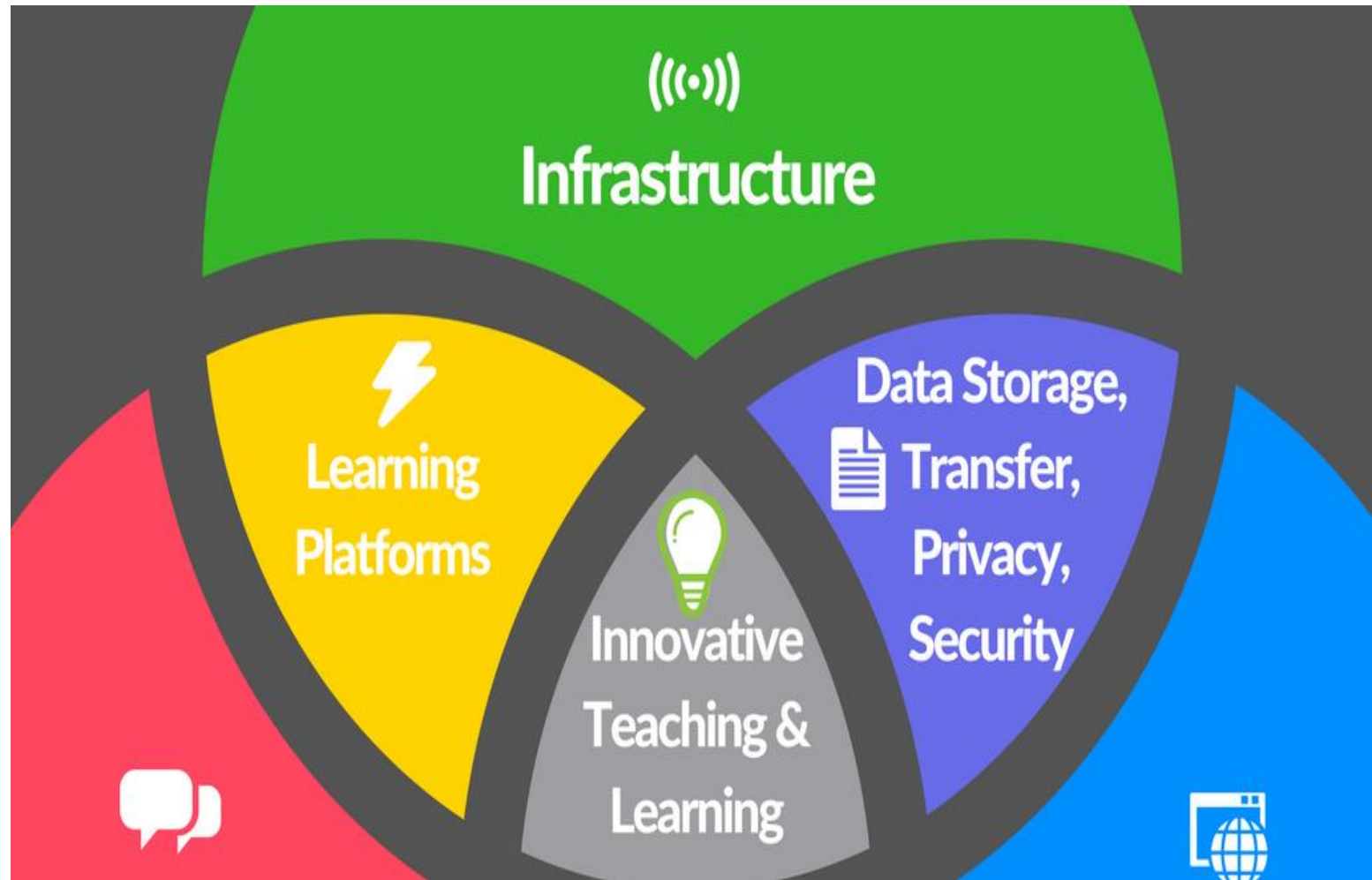
Seamlessly Integrated Systems

- Digital tools should seamlessly integrate with learning
- Members of our learning community should have similar technological experiences from location to location

Cloud Based Systems

Communications

- Finalsite - www.ccsd.ws
- Blackboard Connect - Emergency Communication System
- Infinite Campus - Community E-mail and Student Information System
- Social Media

Technology Inventory

Current Inventory	
District Servers	17
Desktop PCs	1337
Chromebooks	605
PC Laptops	1295
iPads	223
MacBooks	34
SmartBoards & LCD Flat Panel Displays	232
Printers	445
3D Printers	7

Hardware Inventory Forecast

Year	iPads	MacBooks	PC Laptops	PC Desktops
Current	223	34	1295	1337
2018–19	923	104	1995	1037
2019–20	1200	164	2145	750
2020–21	1300	204	2145	500

Technology Leases

Year Begin - Year End	Amount
2014/15 - 2018/19	$83,990
2015/16 - 2018/19	$82,612
2017/18 - 2019/20	$80,000
Proposed 2018/19 - 2020/21	$215,457
Total Annual Payments	$462,059

Data

Privacy, Protection, Reporting, Analyzing, Collecting
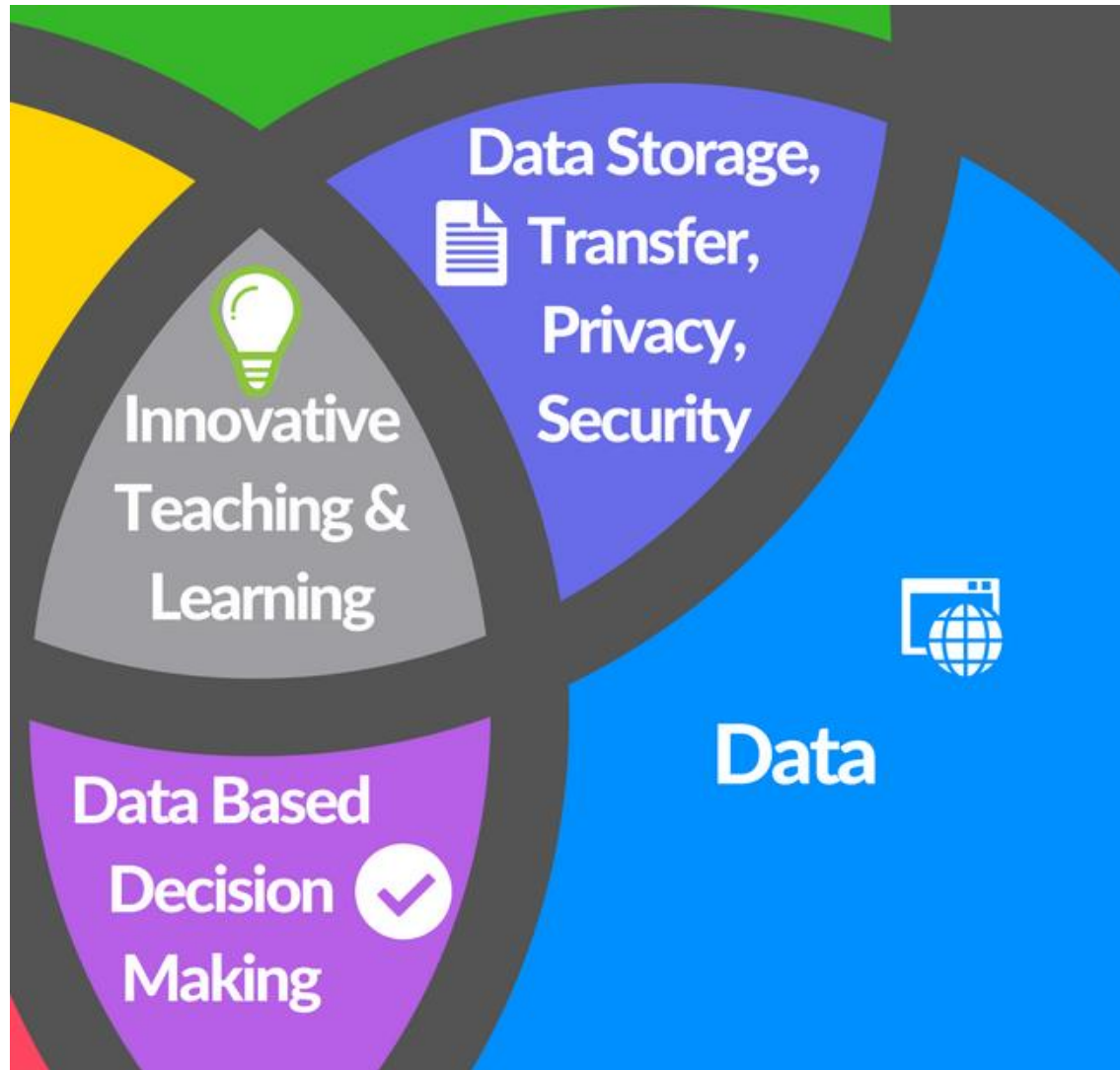
Privacy and Protection

- Children's Online Privacy Protection Rule ("COPPA")
- Children's Internet Protection Act (CIPA)
- Family Educational Rights and Privacy Act (FERPA)

Proposed Technology Budget

Computer Assisted Instruction	2016-17		2017-18		2018-19	Approved '17-'18 vs. Proposed '18-'19	
	Approved Budget	Year End Actual	Approved Budget	Year End Projection	Proposed Budget	Variance $	Variance %
Equipment	238,000	302,175	233,000	233,000	243,040		
Contract Services	1,116,199	1,252,303	1,210,900	1,236,900	1,273,900		
Travel/Conferences	2,500	2,012	2,500	2,500	2,500		
Technology Training	10,000	6,208	10,000	10,000	10,000		
Supplies	73,000	56,680	73,000	73,000	73,000		
State Aided Computer Software	106,920	120,370	150,960	124,960	160,000		
BOCES	-	-	30,000	30,000	30,000		
TOTAL	$1,546,619	$1,739,749	$1,710,360	$1,710,360	$1,792,440	$82,080	4.80%
Lease/Purchase Technology Principal & Interest	$349,448	$332,059	$412,059	$412,059	$462,059	$50,000	12.13%
TOTAL	$1,896,067	$2,071,808	$2,122,419	$2,122,419	$2,254,499	$132,080	6.22%