Technology and Library Media Department

School Committee Presentation – October 25, 2022

Bedford Public Schools

2021-2024

DISTRICT IMPROVEMENT PLAN

Diversity, Equity & Inclusion

Student-Centered Curriculum, Instruction and Assessment

Social-Emotional Learning

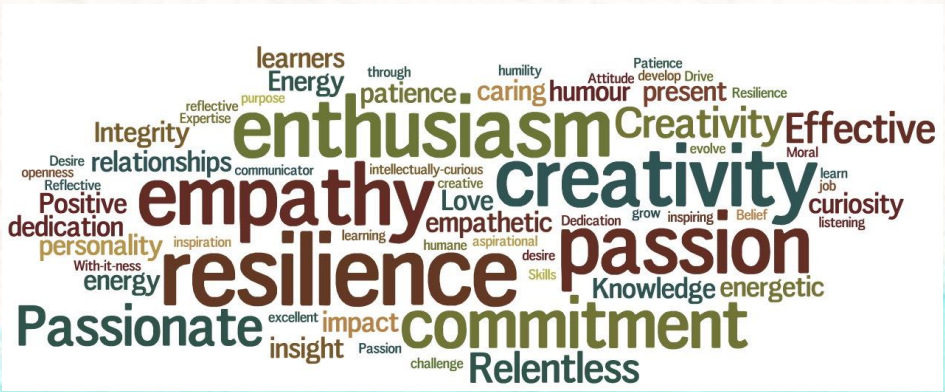
Strategic Objective 1
Diversity, Equity, and Inclusion: Provide each student with the academic, social, and emotional support and services they need.

Strategic Objective 2
Student-Centered Curriculum, Instruction, and Assessment: We believe that by creating a curriculum that is student-centered we can implement instructional strategies that prioritize the student experience.

Strategic Objective 3
Social-Emotional Learning: We believe that Social Emotional Learning (SEL) is an integral part of a student's education. Students learn to develop healthy identities, emotions, achieve goals, show empathy, establish and maintain healthy relationships and make responsible and caring decisions.

How can the Bedford Public Schools' Technology and Library Media Department best support district and school-based goals to ***better enhance teaching and learning?***

Collaborative data-driven decisions that support district and school-based goals and are aligned with DESE curricula frameworks



Digital Literacy and Computer Science (DLCS) Overview

Bedford's Technology and Library Media Department's work is guided by the Massachusetts Digital Literacy and Computer Science Frameworks.

DESE's Vision – To engage students in digital literacy and computer science skills and concepts through the integration of practices, while making connections to what they know and the world they live in.

Framework designed to:

- Integrate practices necessary for success in a technological world
- Present coherent progressions of core concepts and practices from K – 12
- Complement other Massachusetts Curriculum Frameworks
  - Overlap with standards from other academic disciplines
  - **Integrate core concepts and practices across the curriculum**

DESE's Six Guiding Principles for Effective Digital Literacy and Computer Science Education

The goal of the Guiding Principles is to help educators create relevant, rigorous, and coherent programs that support student engagement, curiosity, computational thinking, and excitement for learning over time.

Guiding Principle 1: Learning
- Explores ideas in ways that stimulate curiosity, create enjoyment and develop depth of understanding.

Guiding Principle 2: Teaching
- Provides a carefully designed set of content standards that are clear, specific, focused, and articulated over time.

Guiding Principle 3: Equity
- Conveys high academic expectations for all students.

Guiding Principle 4: Literacy Across the Content Areas
- Builds upon and develops students' literacy skills and knowledge.

Guiding Principle 5: Assessment
- Uses regular assessment to inform student learning, guide instruction, and evaluate student progress.

Guiding Principle 6: Planning and Support
- Requires coherent district-wide planning and ongoing support for implementation.

2016 Massachusetts Digital Literacy and Computer Science (DLCS) Framework - Strands

Computing and Society (***Digital Citizenship***)

- Principles of privacy, ethics, security, and copyright law influence digital safety and security, as well as interpersonal and societal relations.

Digital Tools and Collaboration (***Digital Literacy)***

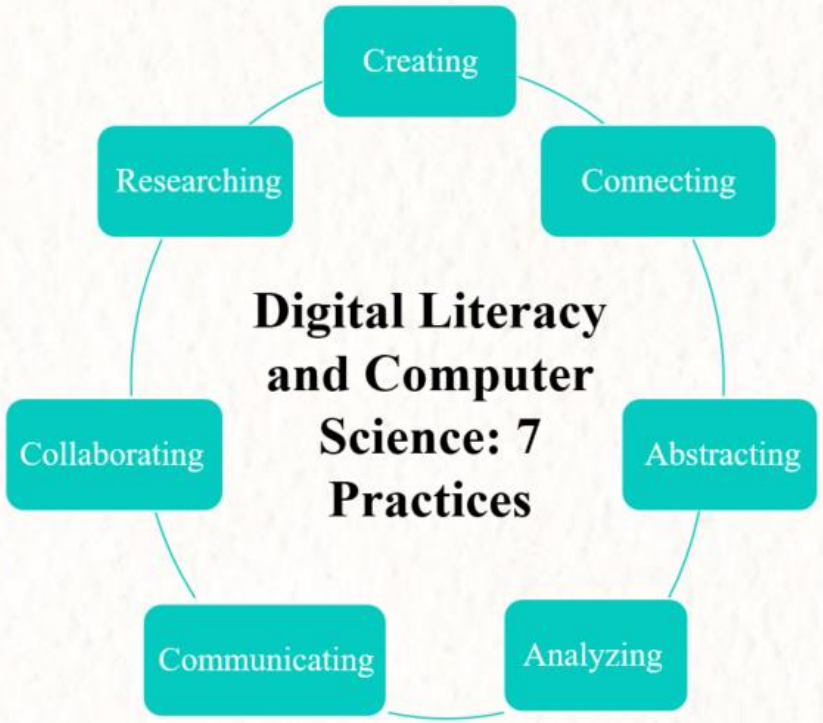
- Digital tools are critical for conducting research, communicating, collaborating, and creating in social, work, and personal environments.

Computing Systems (***Digital Literacy***, ***Coding, Engineering Design)***

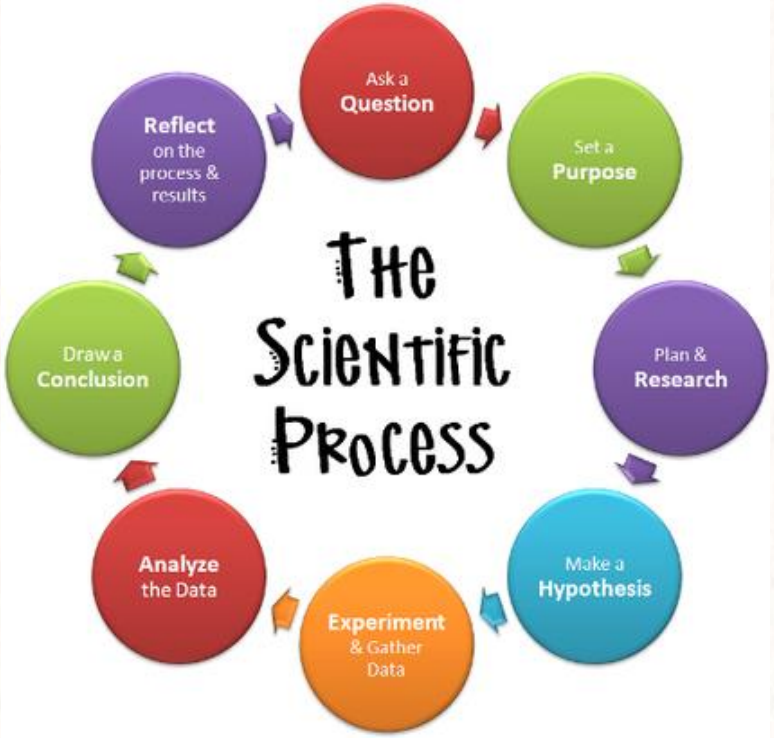
- Computer systems empower people to create, collaborate, and learn via human computer partnerships. The design of many computing systems empowers people to debug, extend and create new systems.

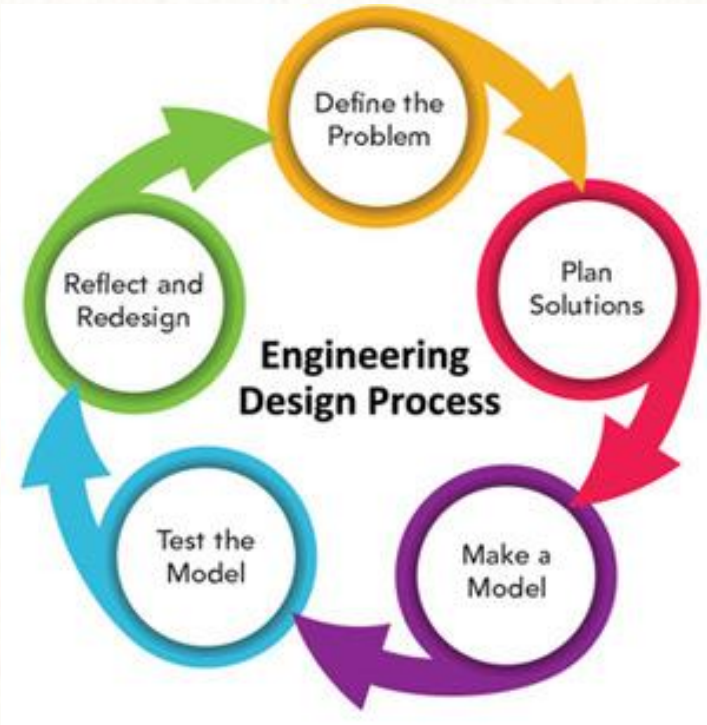
Computational Thinking (***Digital Literacy***, ***Coding, Engineering Design)***

- Computational thinking is a problem-solving process that requires people to think in new ways to enable effective use of computing to solve problems and create solutions.



Inquiry-Based
Literacy
Critical Thinking
Creativity



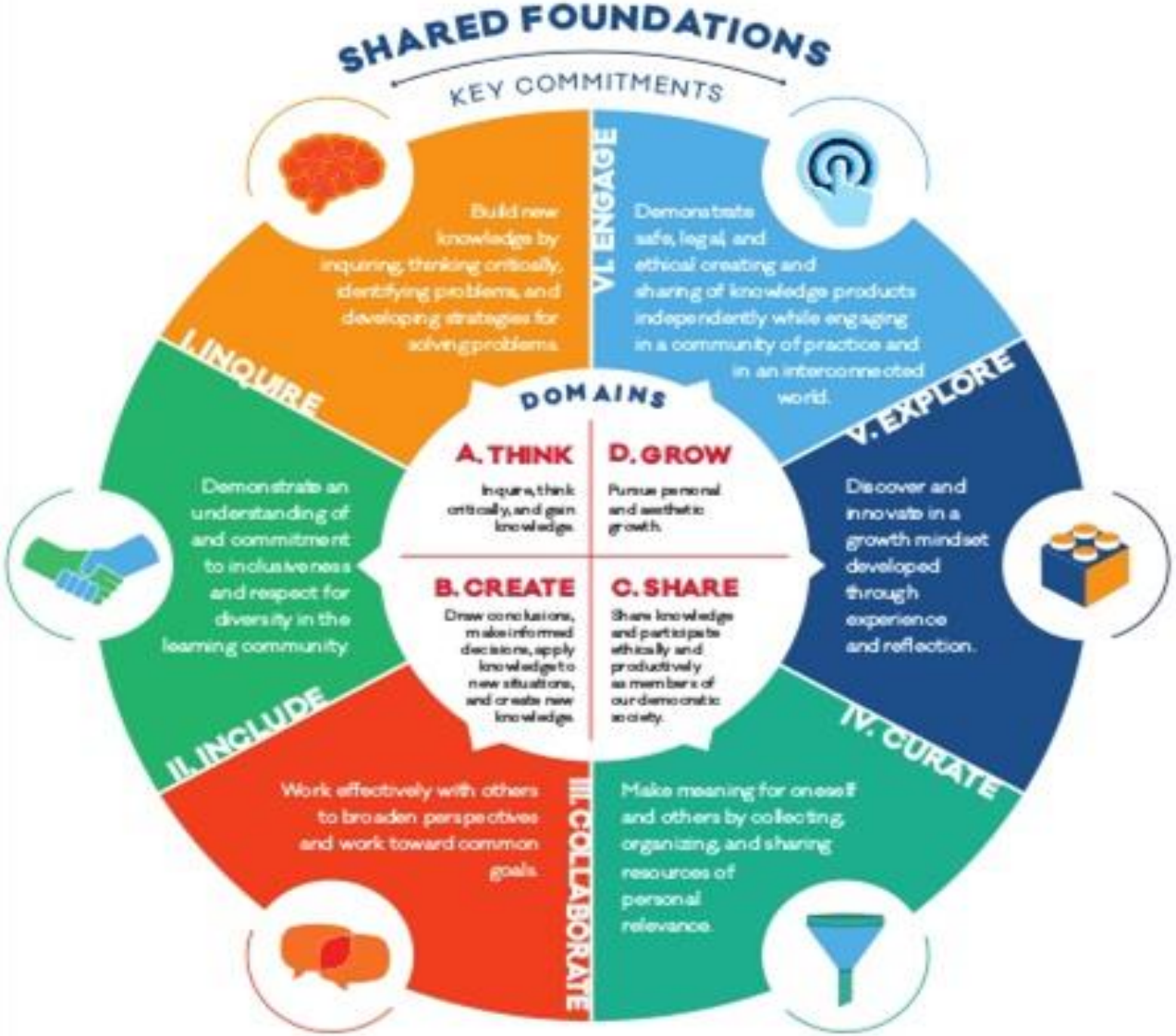


Multi-Modal
Hands-on & Minds-on
Performance-Based

Interdisciplinary
Problem-Solving
Reflection

American Association of School Librarians

TRANSFORMING LEARNING



An Overview of the AASL National School Library Standards

The AASL National School Library Standards encourage learners to:

INQUIRE

- Formulate questions
- Seek knowledge
- Connect to prior knowledge
- Use evidence
- Plan an investigation
- Share knowledge
- Provide feedback
- Make informed decisions

INCLUDE

- Interact with others
- Engage in discussion and debate
- Consider multiple viewpoints
- Analyze point of view
- Reflect on own perspective
- Recognize contributions of others

COLLABORATE

- Involve diverse perspectives
- Solicit feedback from others
- Participate in discussions
- Solve problems as a group
- Learn from others
- Connect to shared knowledge

CURATE

- Gather information
- Determine need for information
- Choose sources carefully
- Use a variety of sources
- Question the accuracy of info
- Organize information
- Reflect on resources and research

EXPLORE

- Read, write, and create
- Reflect and ask questions
- Engage in self-directed learning
- Strategically solve problems
- Express curiosity
- Engage in self-reflection
- Be open to feedback
- Persist in discovery

ENGAGE

- Apply info and resources to learning
- Use information ethically
- Evaluate information
- Avoid plagiarism
- Share information
- Practice safety
- Show respect

Digital Literacy and Computer Science (DLCS) Overview

Vision
Digital Literacy and Computer Science (DLCS) knowledge, reasoning, and skills are essential both to prepare students for personal and civic efficacy in the twenty-first century and to prepare and inspire a much larger and more diverse number of students to pursue the innovative and creative careers of the future. The abilities to effectively use and create technology to solve complex problems are the new and essential literacy skills of the twenty-first century.

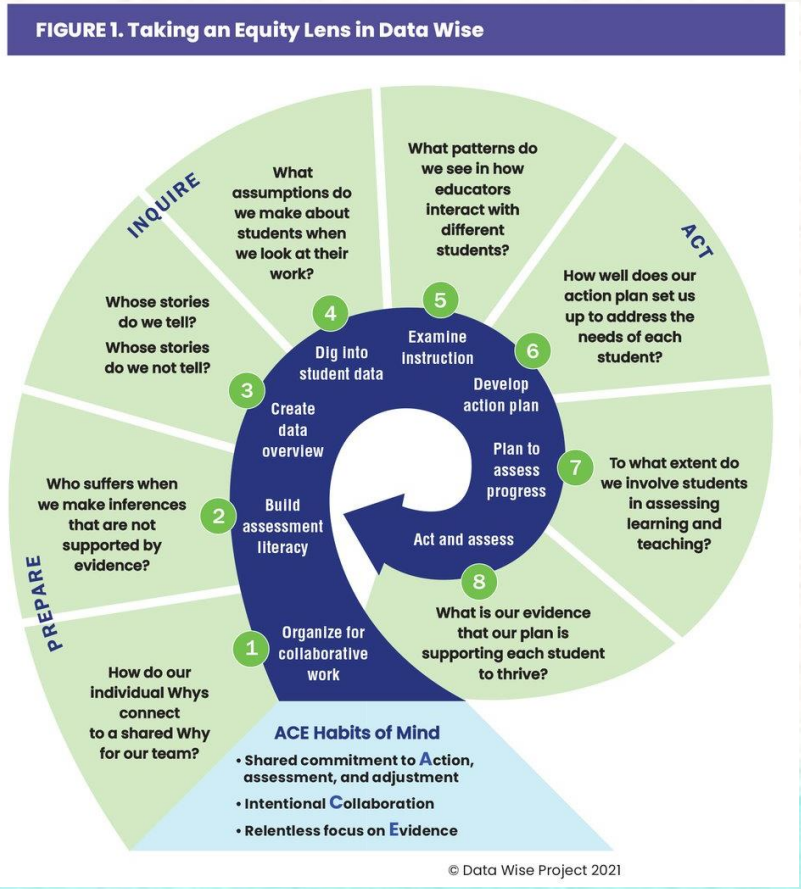
Learning Progression

Grade Spans	*Digital Citizenship*	*Digital Literacy*	Strands	*Digital Literacy, Coding, Engineering Design*
K-2 3-5 6-8 9-12	**CAS: Computing and Society** a. Safety and Security b. Ethics and Laws c. Interpersonal and Societal Impact	**DTC: Digital Tools and Collaboration** a. Digital Tools b. Collaboration and Communication c. Research	**CS: Computing Systems** a. Computing Devices b. Human and Computer Partnerships c. Networks d. Services	**CT: Computational Thinking** a. Abstraction b. Algorithms c. Data d. Programming and Development e. Modeling and Simulation

Practices: Connecting, Creating, Abstracting, Analyzing, Communicating, Collaborating, Research

How can the Bedford Public Schools' Technology and Library Media Department best support district and school-based goals to **better enhance teaching and learning**?

- Collaborative informed decisions that support district and school-based goals and are aligned with DESE curricula frameworks
- Data-driven decisions
  - Data Wise teams both district-wide and school-based
    - District-wide department needs district and school-based lenses
    - Standardized and benchmark assessments (i.e. MCAS, Track My Progress, Dibels, iReady)
    - K-5 Data Dashboard (ELA and math)
  - Data collection from faculty, staff, administrators, students and families
    - Surveys, observations, meetings, assessments
  - Work we do with teachers
    - Theory to practice
    - Application of skills
  - Professional development work
  - Research
- Changes over the years to better support district and school-based plans and goals, as well as DESE curricula frameworks
  - Updated systems, hardware and tools
  - Programmatic changes to enhance teaching and learning
  - Personnel changes in faculty, staff, technical and administrative positions
    - Librarians, Instructional Technology Specialists, Instructional Coaches



Library Programs: Developmentally Appropriate

All library programs focus on:

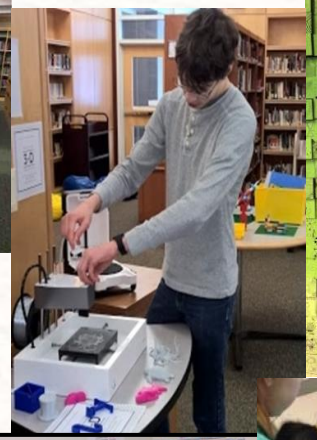
- Creating student-centered collaborative spaces
- Promoting literacy and a love of reading
- Serving as a professional resource for students and colleagues
- Encouraging creative problem-solving, computational thinking, and engineering design
- Advocating for the development of research skills
- Supporting classroom curricula

Elementary Programs (both schools prior to the current school year)

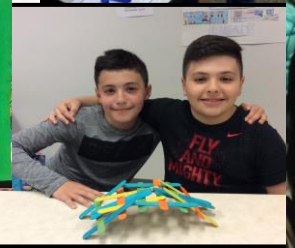
- Assigned classes 1 x 40/45 minutes
- Book exchange
- Digital citizenship
- Research
- Computational thinking

Secondary Programs

- No assigned classes
  - JGMS Design Lab 1 period within a six day cycle (pre-pandemic)
- Classes and students come to the library and librarians go to classrooms
- Ongoing collaborations (i.e. resources, author visits, celebration of reading, research projects, independent reading projects, class assignments and projects)
- Students come independently to select books, access resources, get support, do research, work on projects, work in an alternate space, access the Makerspace
- Makerspaces include Design Lab at JGMS (pre-pandemic) and Fab Lab at BHS: projects, explore interests and passions



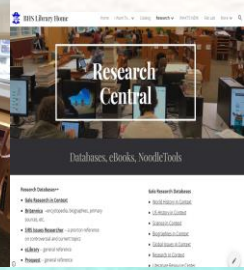








Instructional Technology Specialists (ITS)

- Integration of technology to enhance teaching and learning
- No direct teaching responsibilities
- Available to assist teachers when needed
- Strong interpersonal skills
- Current and emerging technologies
- Curricula knowledge
- Best teaching practices
- STEAM learning
- Data to inform decisions and practices
- Provide professional development to enhance teaching and learning

Levels of Technology Integration

Entry	• Teacher uses technology to technology to deliver curriculum content to students.
Adoption	• Teacher directs students in the conventional use of tool-based software.
Adaptation	• Teacher encourages adaptation of tool-based software by allowing students to select and modify a tool to accomplish the task at hand.
Infusion	• Teacher consistently provides the infusion of technology tools with understanding, applying, analyzing, and evaluating learning tasks.
Transformation	• Teacher cultivates a rich learning environment, where blending choice of technology tools with student-initiated investigations, discussions, compositions, or projects, across any content area, is promoted.

Image created based on information from:
TIM Arizona Technology Integration Matrix. (2012). Arizona K12 Center. Retrieved from http://www.azk12.org/tim/

The Bedford Public Schools believe in integrating technology in new and effective ways to enhance teaching and learning.

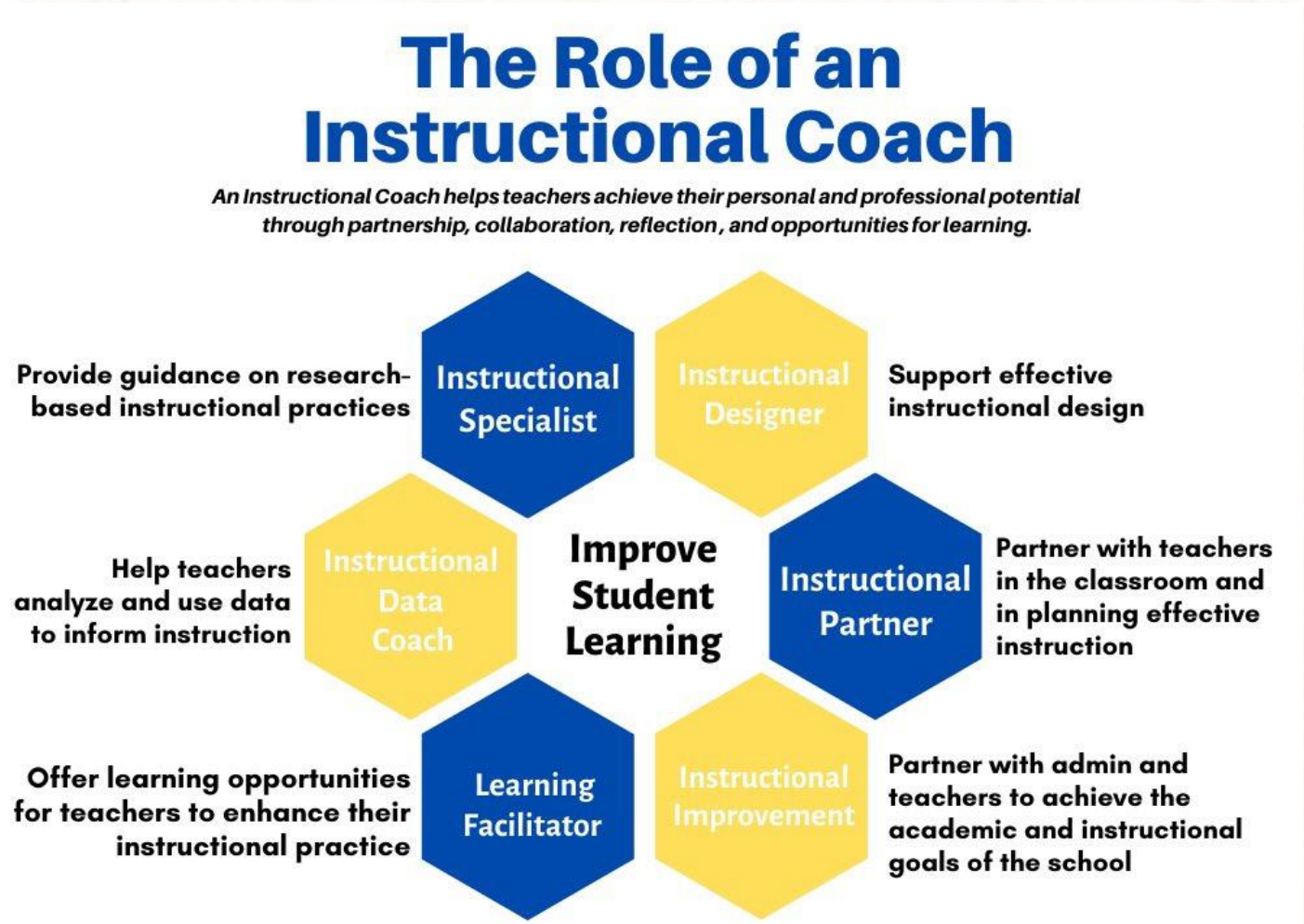
We want our students to be:

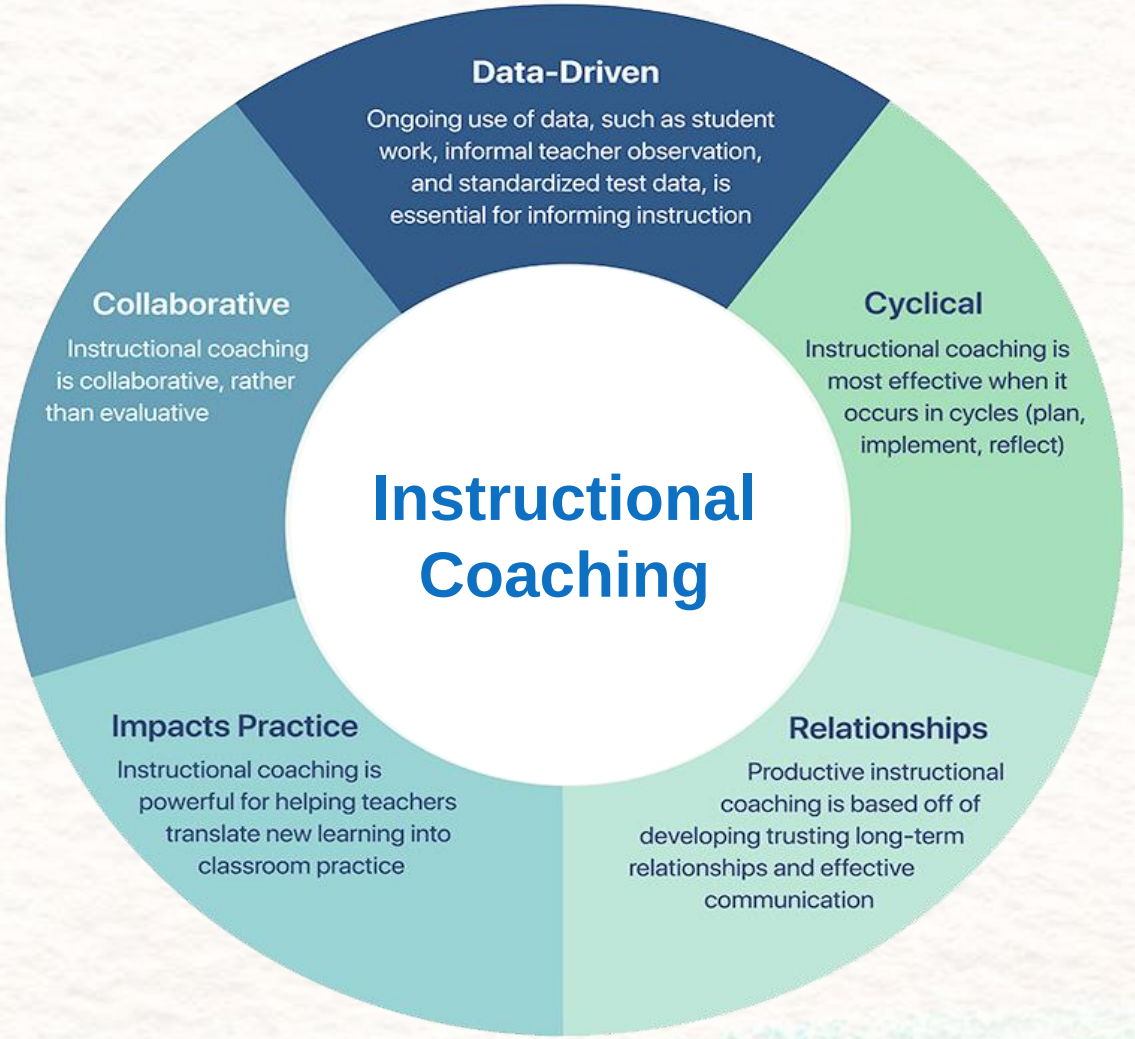
- Reflective learners
- Creators/curators of knowledge
- Critical thinkers and problem-solvers of real-world issues
- Digitally literate
- Good digital citizens

We promote:

- Inquiry-based, hands-on, minds-on learning
- Multi-modal means of learning and demonstrating understanding through creative expression
- Project-based learning
- Interdisciplinary learning that integrates digital literacy
- An emphasis on learning processes – i.e. engineering design process

Instructional Coaching: Role of the ITS and More



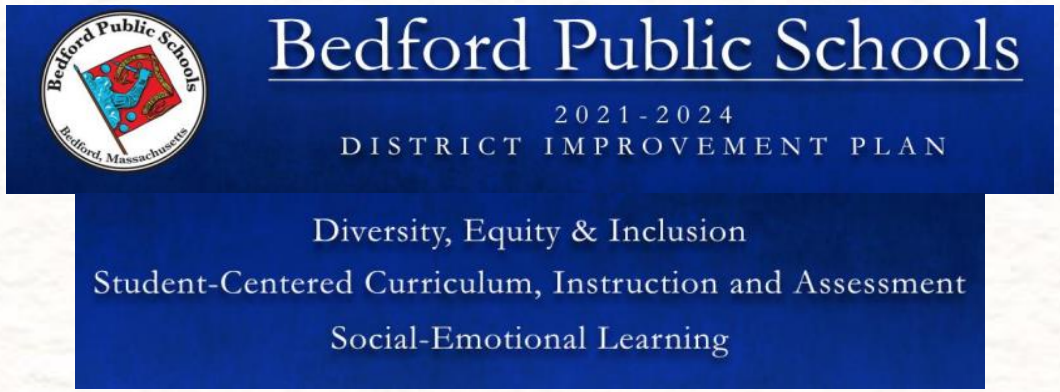


Instructional Personnel

	? - 6/2006		9/2006 - 6/2011		9/2011 - 6/2012		9/2012 - 6/2013		9/2013 - 6/2015		9/2015 - 6/2017			9/2017 - 6/2019		
			5 Years		1 Year		1 Year		2 Years		2 Years			2 Years		
	ITS	Library	ITS	Library	ITS	Library	ITS	Library	ITS	Library	ITS	Instructional Coach	Library	ITS	Instructional Coach	Library
DAVIS	0.5	1.0	0.5	1.0	0.0	1.0	0.5	1.0	0.5	1.0	0.5	0.0	1.0	0.5	0.0	1.0
LANE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	0.5	0.0	1.0	0.5	0.0	1.0
JGMS	1.0	1.0	0.6	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.0	0.7	1.0	0.0	0.8	1.0
BHS	0.5	1.0	0.5	1.0	0.6	1.0	0.6	1.0	0.5	1.0	0.0	0.7	1.0	0.0	0.8	1.0
Group Totals:	3.0	4.0	2.6	4.0	2.1	4.0	2.6	4.0	2.0	4.0	1.0	1.4	4.0	1.0	1.6	4.0
Instructional Faculty Total:	7.0		6.6		6.1		6.6		6.0		6.4			6.6		
Administrator:	0	0	0.4	0	0.4	0	0.4	0	1		1			1		

	9/2017 - 6/2019			9/2019 - 6/2020			9/2020 - 1/2021			1/2021 - 6/2022			9/2022 - Now		
	2 Years			1 Year (March)			1 Year			1 Year					
	ITS	Instructional Coach	Library	ITS	Instructional Coach	Library	ITS	Instructional Coach	Library	ITS	Instructional Coach	Library	ITS	Instructional Coach	Library
DAVIS	0.5	0.0	1.0	0.5	0.0	1.0	0.5	0.0	1.0	0.5	0.0	1.0	0.0	1.0	1.0
LANE	0.5	0.0	1.0	0.5	0.0	1.0	0.5	0.0	1.0	0.5	0.0	1.0	0.0	1.0	0.0
JGMS	0.0	0.8	1.0	0.0	0.9	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0
BHS	0.0	0.8	1.0	0.0	0.9	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0
Group Totals:	1.0	1.6	4.0	1.0	1.8	4.0	1.0	1.0	4.0	1.0	1.0	4.0	0.0	3.0	3.0
Instructional Faculty Total:	6.6			6.8			6.0			6.0			6.0		
Administrator:	1			1			1			1			1		

How can the Bedford Public Schools' Technology and Library Media Department best support district and school-based goals to **better enhance teaching and learning**?



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Social-Emotional Learning: We believe that Social Emotional Learning (SEL) is an integral part of a student's education. Students learn to develop healthy identities, emotions, achieve goals, show empathy, establish and maintain healthy relationships and make responsible and caring decisions.

Data Driven Decisions:

- District and school-based data wise teams
- Formative and summative assessments
- Standardized and benchmark assessments (i.e. MCAS, Track My Progress, Dibels, iReady)
- K-5 Data Dashboard (ELA and math)
- Observations, walkthroughs, meetings
- Surveys
- Teacher input
- Professional development
- Research
- Theory to practice
- Application of skills

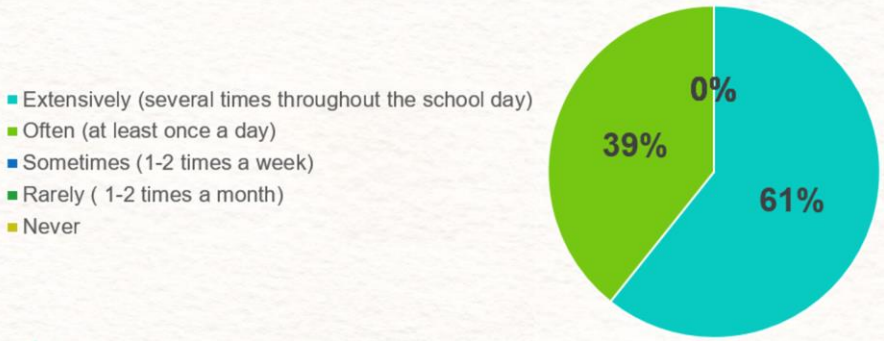
'22-'23 School Year – 1 Department

Library	Instructional Coach	Technology
• 1.0 librarian Davis • 1.0 educational assistant Lane • 1.0 librarian JGMS • 1.0 librarian BHS	• 1.0 Davis • 1.0 Lane • .5 JGMS • .5 BHS	• 4.0 technicians • 1.0 data compliance specialist • 1.0 network server engineer • 1.0 director of information systems

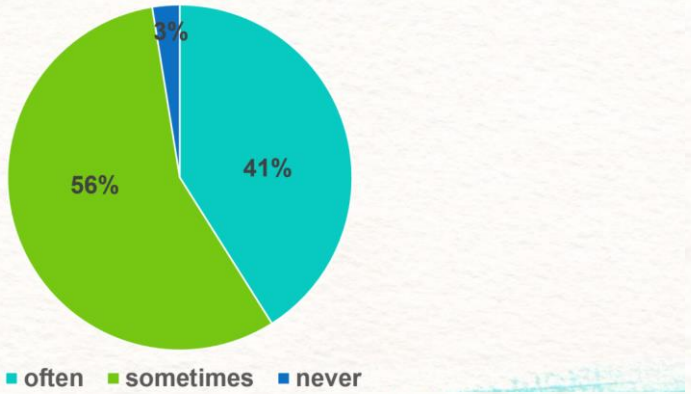
1.0 Director of Technology and Library Media

Lane Faculty Technology Survey: Spring of 2021

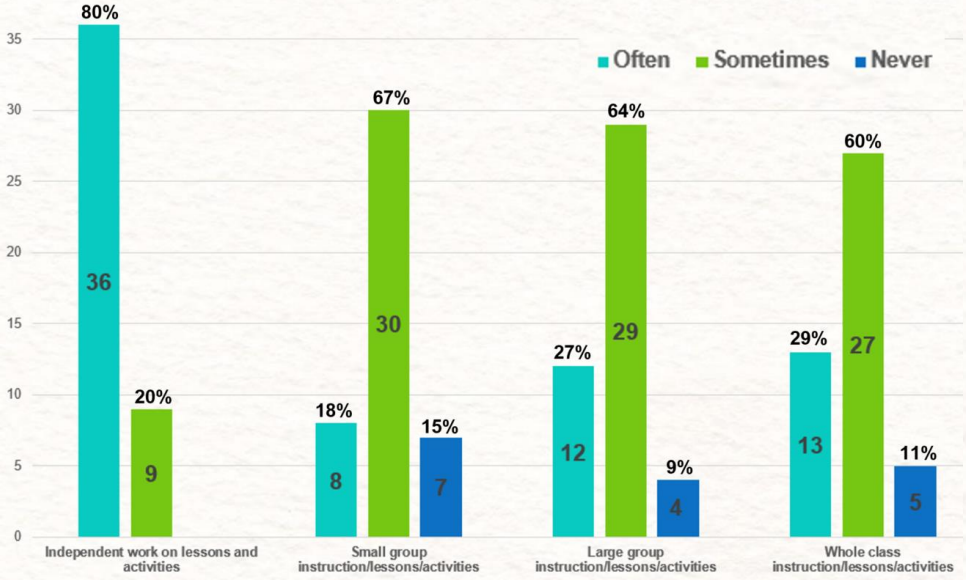
Classroom Teachers Response - How often do students use Chromebooks in your classes?



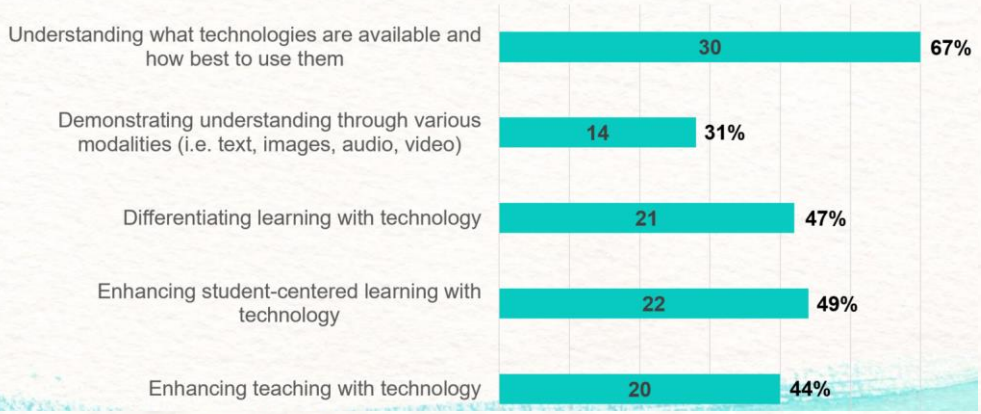
Students in my class use Chromebooks for conducting research.



Chromebooks are used during…



Which of the following professional development opportunities would you find helpful? Select all that apply.



Participants had the option to select "Other" to list alternate PD opportunities they would like.

- How to use advanced tools within Google Slides and Adobe
- Want to learn newer programs like Kahoot and Nearpod
- Want better information on tech-related items

Lane Faculty Technology Survey: Is there anything else you would like to share in regards to technology at Lane?

"It would be incredibly helpful to have someone here at Lane to help us problem solve."

"Having someone at Lane that can help with the Chromebooks like we have had in the past is needed."

"I have a smart board in my classroom and would love some ideas on using the smart board to improve instruction (not just to use as a whiteboard)."

"PLEASE, PLEASE,PLEASE have a technology person dedicated to the Lane School and Davis to share at the very least! It's hard to use technology if we don't have technology support to help us!"

"We need a tech help person at Lane!!"

"Every school should have a full time tech teacher!"

"I do find it frustrating when there is a technological difficulty there is not a person to help remedy this. Like all technology it needs to be monitored and as glitches arise teachers do not have support for this."

Digital Citizenship: Developmentally Appropriate

Digital Literacy and Computer Science (DLCS) Overview

Vision

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Learning Progression

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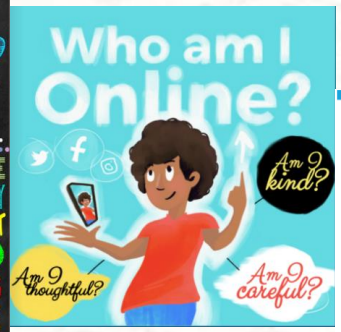
3-5				
6-8				
9-12				

Practices: Connecting, Creating, Abstracting, Analyzing, Communicating, Collaborating, Research

Grade Span	*Grade Span Integration*
Davis School: K-2	· Davis Library program · Reinforced by classroom teachers
Lane School: Grades 3-5	· Lane Library program · Reinforced by classroom teachers
JGMS: Grades 6-8	· JGMS health curriculum · JGMS Tech Ed and digital art classes · Reinforced by classroom teachers
High School: Grades 9-12	· High School health curriculum · High School Tech Ed and digital art classes · Reinforced by classroom teachers



Davis Library Program

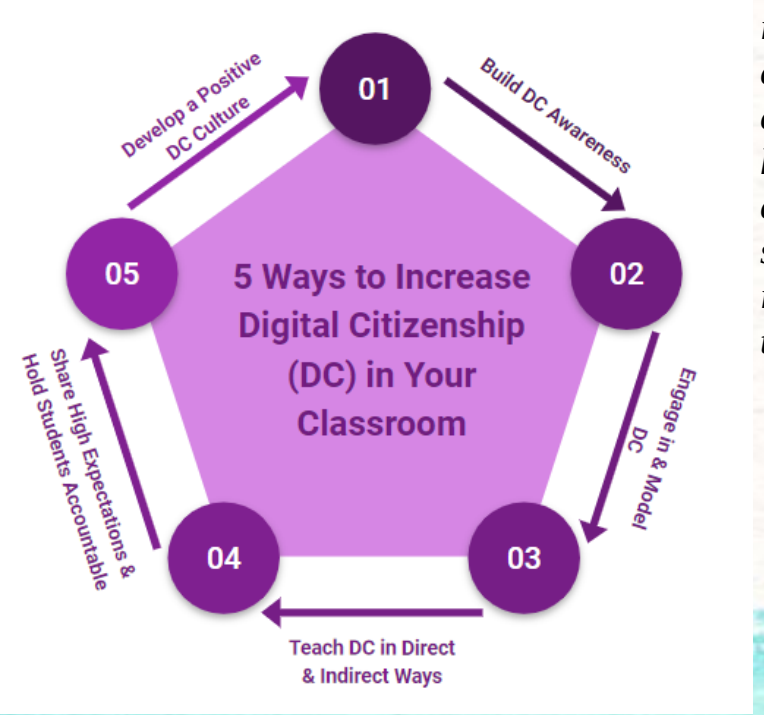
- Emerging reading and writers
- Classroom set of iPads
- Read alouds and community building in library
- Student-centered collaborative learning (i.e. Code.org, Google Earth)
- Demonstrate understanding of content
- Connected to classroom (i.e. Responsive Classroom, Davis Town)
- Work together in online communities to problem-solve and create with Minecraft Education
- Promotes technical skills (i.e. use of physical keyboard, mouse)

Lane Library Program

- Reading to learn and writing for a variety of audiences and purposes
- 1:1 Chromebooks in classrooms
- Digital citizenship unit of study in grades 3-5
- Check for understanding using formative and summative assessments
  - End of unit quizzes
  - Interactive learning
  - Public Service Announcements (PSAs)
  - Digital Citizenship posters
- Demonstrate understanding of content
- Not carrying over to the classroom
- Students using technology more in classrooms, including accessing digital tools for communication, collaboration, information gathering, creation and critical thinking

Digital Citizenship at Lane School

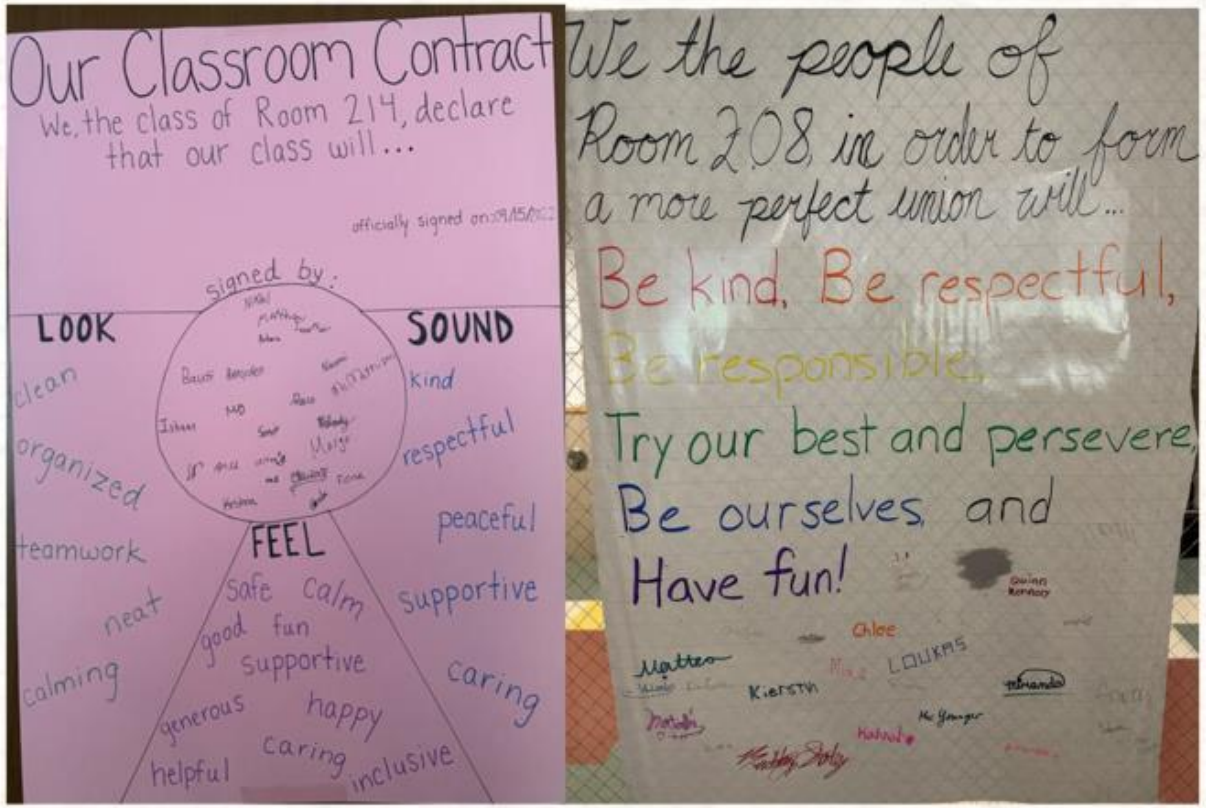
- Lane is a 1:1 learning environment with Chromebooks
- Students using technology more in classrooms, including accessing digital tools for communication, collaboration, information gathering, creation and critical thinking
- Teach students how to use technology safely and responsibly
- Digital citizenship skills from library program are not carrying over to the classroom
- Learn how to navigate in both physical and digital worlds
- Digital citizenship aligns with Responsive Classroom (SEL)
- Explicit connection between digital citizenship and work in classrooms for students and teachers
- Common vocabulary and definitions (i.e. citizenship, community, responsibility, digital citizens)
- Bring awareness and make direct connections to responsibilities and expectations within physical and digital classroom communities
- Provide safe physical and digital spaces for students to engage, apply, and reflect on community building and citizenship practices and experiences



"The Responsive Classroom approach to teaching is comprised of a set of well-designed practices intended to create safe, joyful, and engaging classrooms and school communities. The emphasis is on helping students develop their academic, social, and emotional skills in a learning environment that is developmentally responsive to their strengths and needs."

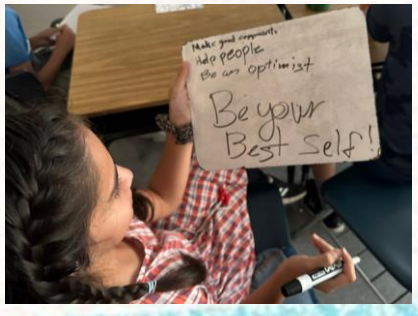
Lane Digital Citizenship: Classroom Connections – Responsive Classroom

Responsive Classroom: Class Contracts



What can you do in your life to be a good digital citizen?

Make good comments
Help people
Be an optimist
Be your best self!



Digital Citizenship: Common Sense Media – Rings of Responsibility

- How do digital citizens take responsibility for themselves, their communities, and their world?

What responsibilities do you have to **yourself**?

What responsibilities do you have to **your community**?

What responsibilities do you have to **your world**?

- **Self**: The center ring represents responsibilities you have to yourself, such as keeping yourself safe and healthy.
- **Community**: The middle ring stands for responsibilities you have to your community, like friends, family, and other people you know and interact with on a regular basis. But it can also include people you interact with but don't know well, such as grocery store clerks or a friend in an online gaming community.
- **World**: The outer ring stands for your responsibilities to the larger world. This would include people who might be affected by your actions, even if you don't know them well.

"You have spent the month of September working on your classroom community. You are all citizens of this classroom, as well as citizens of Lane School! Today we are going to talk about ANOTHER community of which you are a citizen - the digital community."

Lane Digital Citizenship: Classroom Connections

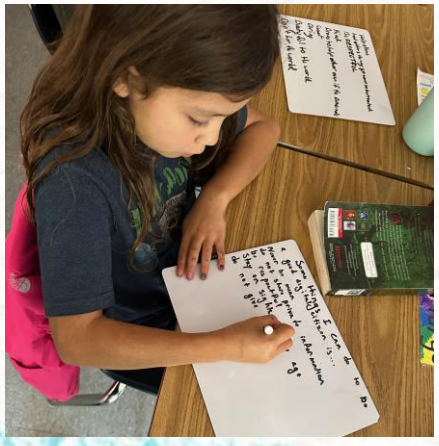
CASEL FOCUS: Self-Awareness

Learning Objectives

- Use the rings of responsibility to think about how behavior affects selves and others.
- Recognize the relationship between behaviors and emotions.
- Identify examples of how they can be their best selves when using technology.

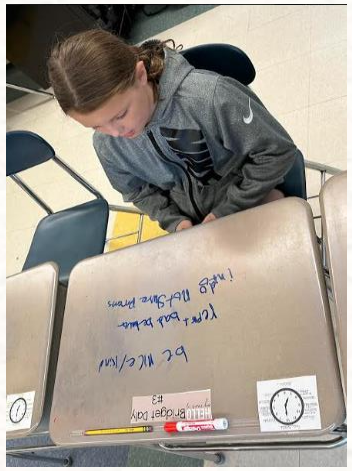
Do not post something that is not true

What can you do in your life to be a good digital citizen?

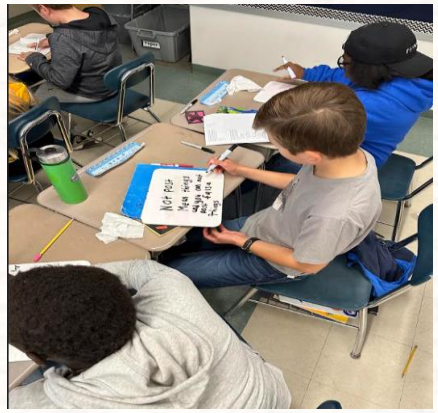


Some things I can do to be a good digital citizen…
Never be mean
Do do not share private information
Be respectful
Stay on sites for my age

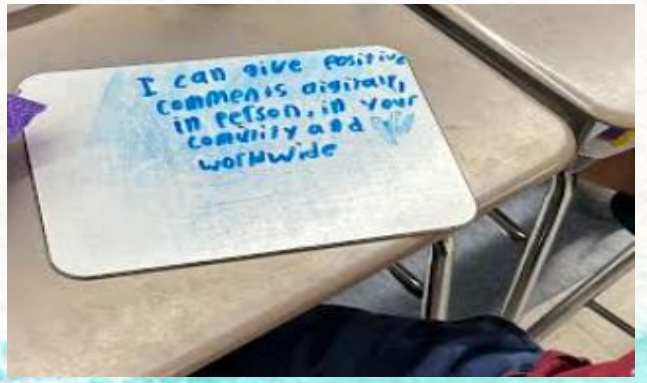
Be nice/kind
Report bad behavior
Do not share peoples info



Not post mean things and you can not post false things



I can give positive comments digitally, in person, in your community and worldwide



Research: Developmentally Appropriate

Digital Literacy and Computer Science (DLCS) Overview

Vision

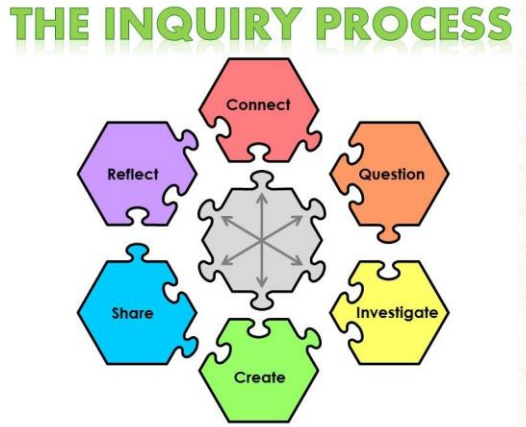
Digital Literacy and Computer Science (DLCS) knowledge, reasoning, and skills are essential both to prepare students for personal and civic efficacy in the twenty-first century and to prepare and inspire a much larger and more diverse number of students to pursue the innovative and creative careers of the future. The abilities to effectively use and create technology to solve complex problems are the new and essential literacy skills of the twenty-first century.

Learning Progression

Grade Spans	*Digital Citizenship*	*Digital Literacy*	Strands *Digital Literacy, Coding, Engineering Design*	
K-2	**CAS: Computing and Society** a. Safety and Security b. Ethics and Laws c. Interpersonal and Societal Impact	**DTC: Digital Tools and Collaboration** a. Digital Tools b. Collaboration and Communication c. Research	**CS: Computing Systems** a. Computing Devices b. Human and Computer Partnerships c. Networks d. Services	**CT: Computational Thinking** a. Abstraction b. Algorithms c. Data d. Programming and Development e. Modeling and Simulation
3-5				
6-8				
9-12				

Practices: Connecting, Creating, Abstracting, Analyzing, Communicating, Collaborating, Research

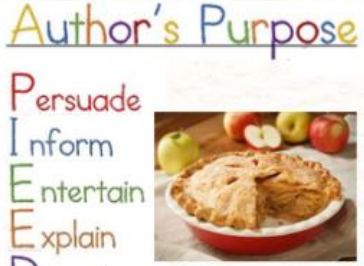
Grade Span	*Grade Span Integration*
Davis School: K-2	· Integrated into curricula/classroom work · Davis Library program
Lane School: Grades 3-5	· Integrated into curricula/classroom work · Lane Library program
JGMS: Grades 6-8	· Integrated into curricula/classroom work · JGMS Tech Ed and digital art classes · JGMS Library Design Lab
High School: Grades 9-12	· Integrated into curricula/classroom work · High School Tech Ed and digital art classes · High School Library Inquiry Lab



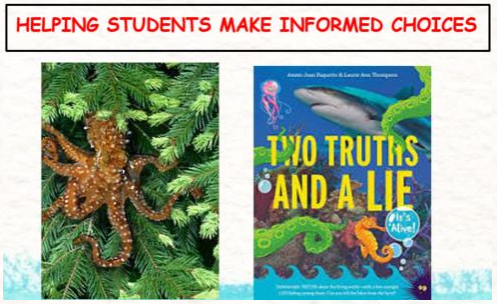
Davis Library Program

- Emerging reading and writers
- Classroom set of iPads
- Books and read alouds (print and digital)
- Connected to Lucy Calkins reading and writing units
- Genres, details, vocabulary, context cues, predictions, sequence of events, comprehension, compare and contrast, personal connections
- Student-centered collaborative learning to find information, solve problems and create (i.e. PebbleGo database, Google Earth, Minecraft Education, age appropriate websites)
- Demonstrate understanding of content
- Carrying over to the classroom

Lane Library Program

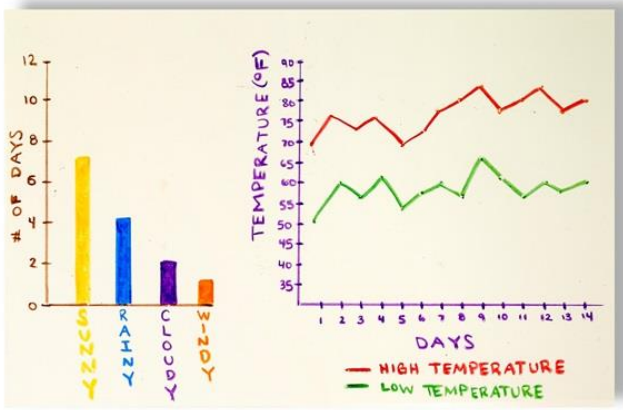


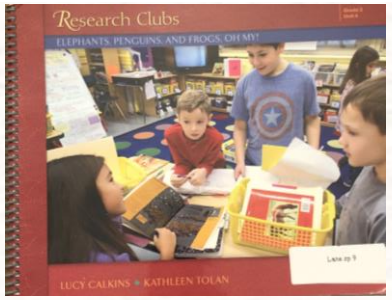
- Reading to learn and writing for a variety of audiences and purposes
- 1:1 Chromebooks in classrooms
- Research unit of study in grades 3-5 related to classroom curricula content (print and digital resources)
- Check for understanding using formative and summative assessments
  - End of unit quizzes
  - Find desired information efficiently and effectively
  - Evaluation of websites
- Demonstrate understanding of content
- Not carrying over to the classroom
- Students using technology more in classrooms, including accessing digital tools for communication, collaboration, information gathering, creation and critical thinking

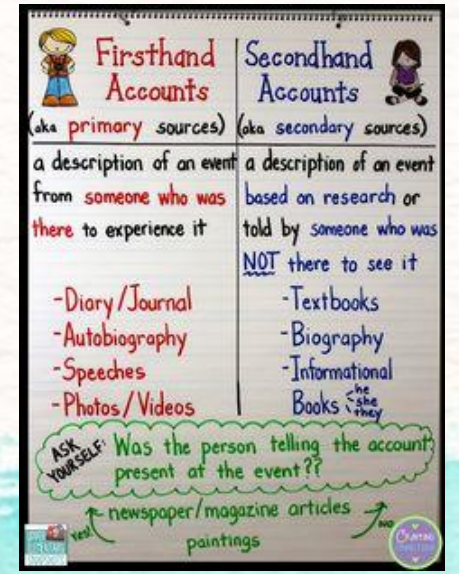


Research at Lane School

- Lane is a 1:1 learning environment with Chromebooks
- Students using technology more in classrooms, including accessing digital tools for communication, collaboration, information gathering, creation and critical thinking
- Teach students how to use technology safely, responsibly, efficiently and effectively
- Research skills from library program are not carrying over to the classroom
- Learn how to navigate in both physical and digital worlds
- Explicit connection between digital research skills and work in the classrooms for students and teachers
- Digital research skills align with Lucy Calkins ELA units and classroom curricula
- Broaden the view of research in classroom practices and make connections to prior experiences and knowledge
- Common vocabulary and definitions (i.e. research, audience, purpose, author, source, fact, etc.)
- Evaluate print and digital resources

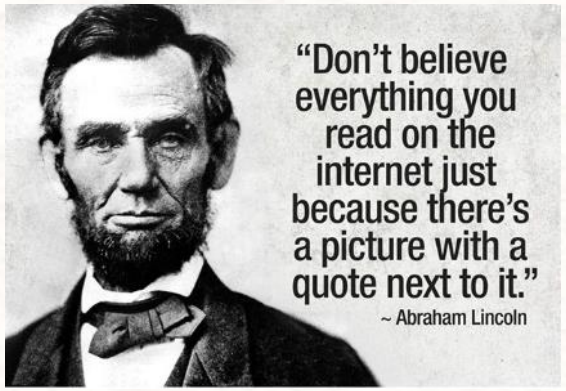




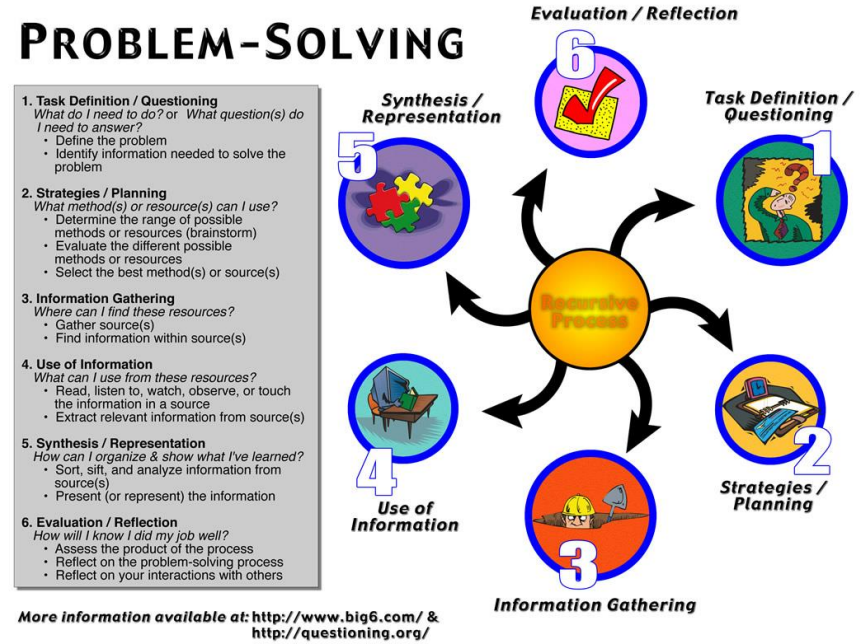


Lane Research Skills: Classroom Connections – Lucy Calkins & Curricula Ties

- Instructional Coach collaborates with K-5 ELA Curriculum Coordinator on making an explicit connection for students and teachers between Lucy Calkins research units and digital research
- Instructional Coach and K-5 ELA Curriculum Coordinator plan and facilitate PD for Lane faculty
- Establish common vocabulary and definitions (i.e. research, audience, purpose, author, source, fact, etc.)
- Establish common practices in research using print and digital resources, including learning how to evaluate sources (i.e. reading to learn, audience, purpose, citing sources, presenting findings, etc.)
- Broaden the view of research in classroom practices making connections to prior experiences and knowledge (i.e. data collection, observations, experiments, surveys, etc.)
- Instructional Coach collaborates with K-5 Math Coach and Curriculum Coordinator, Lane Science Coordinator, and faculty to integrate research skills into curricula
- Instructional Coach works with classroom teachers to integrate research skills into curricula
- Instructional Coach works with Lane curricula coordinators and faculty to create and facilitate PD opportunities
- Reintroduce Lane grade level "I Can" research statements



"Teaching research in elementary school helps students develop higher level questioning skills, understand how to take notes, paraphrase, and focuses on communicating ideas through the written word." Lucy Calkins



DESE English Language Arts
Literacy Framework
March 2017
Research to Build and Present Knowledge
Anchor Standards for Writing

	Standard 7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under inverstigation.	*Standard 8:* When researching, gather relevant information from mulitple print and digital sources, assess the credibility & accuracy of each source, & integrate the information while avoiding plagiarism.	*Standard 9:* Draw evidence from literary or informational texts to support analysis, interpretation, reflection, and research.
Gr. 3	Conduct short research projects that build knowledge about a topic.	Recall information from experiences or gather information from print & digital sources; take brief notes on sources & sort evidence into provided categories.	(Begins in grade 4.)
Gr. 4	Conduct short research projects that build knowledge through investigation of different aspects of a topic.	Recall relevant information from experiences or gather relevant information from print & digital sources; take notes and categorize information, and provide a list of sources.	Draw evidence from literary or informational texts to support written analysis, reflection, & research, applying 1 or more gr. 4 standards for Reading Literature or Reading Informational Text as needed.
Gr. 5	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.	Draw evidence from literary or informational texts to support written analysis, reflection, & research, applying 1 or more gr. 5 standards for Reading Literature or Reading Informational Text as needed.

Computing and Society (CAS)	Digital Tools and Collaboration (DTC)
3-5.CAS.b.2 Describe the difference between digital artifacts that are open or free and those that are protected by copyright.	3-5.DTC.c.1 Identify digital information sources to answer research questions (e.g., online library catalog, online encyclopedias, databases, websites).
3-5.CAS.b.3 Explain the guidelines for the fair use of downloading, sharing, or modifying of digital artifacts.	3-5.DTC.c.2 Perform searches to locate information using two or more key words and techniques to refine and limit such searches.
3-5.CAS.b.4 Describe the purpose of copyright and the possible consequences for inappropriate use of digital artifacts that are protected by copyright.	3-5.DTC.c.3 Evaluate digital sources for accuracy, relevancy, and appropriateness.
	3-5.DTC.c.4 Gather & organize information from digital sources by quoting, paraphrasing, and/or summarizing.
	3-5.DTC.c.5 Create an artifact that answers a research question and clearly communicates thoughts and ideas.
	3-5.DTC.c.6 Cite text-based sources using a school or district-adopted format.
	3-5.DTC.c.7 Provide basic source information (e.g., URL, date accessed) for non-text-based sources (e.g., images, audio, video).

DESE Digital Literacy
Computer Science Framework
June 2016
Curriculum Framework Grades 3-5

Research Integration (ELA Research and Digital Literacy): Lane "I Can" Statements

GRADE 3	GRADE 4	GRADE 5
· I can research a topic to answer a question.	· I can research different parts of a topic to answer a question.	· I can research different parts of a topic to answer a question.
· I can find information in a book or text to answer my question.	· I can use more than one resource to answer my question.	· I can use more than one relevant and accurate resource to answer my question.
· I can use two keywords to search and find information online to answer my question.	· I can use two or more keywords to search and find information to answer my question.	· I can use several keywords and other search techniques to find information to answer my question.
· I can choose the best information to answer my question.	· I can choose the best information to answer my question and support my thinking.	· I can choose the best information to answer my question and support my thinking.
· I can explain how the information I have found answers my question.	· I can explain how the information I found answers my question.	· I can explain how the information I found answers my question.
· I can organize the information I find into categories.	· I can take notes on and categorize the information I found.	· I can take notes on and write sentences and paragraphs about the information I found.
· I can put the information I find into my own words.	· I can put the information I found into my own words.	· I can put the information I found into my own words.
· I can create a visual, write an explanation, or present the answer to my question.	· I can create a visual, write an explanation or present the answer to my question.	· I can create a visual, write an explanation or present the answer to my question.
	· I can give credit to the authors of the resources I used to answer my question.	· I can give credit to the authors and creators of the resources I used to answer my question.

Computational Thinking: Developmentally Appropriate

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Vision

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3-5				
6-8				
9-12				

Practices: Connecting, Creating, Abstracting, Analyzing, Communicating, Collaborating, Research

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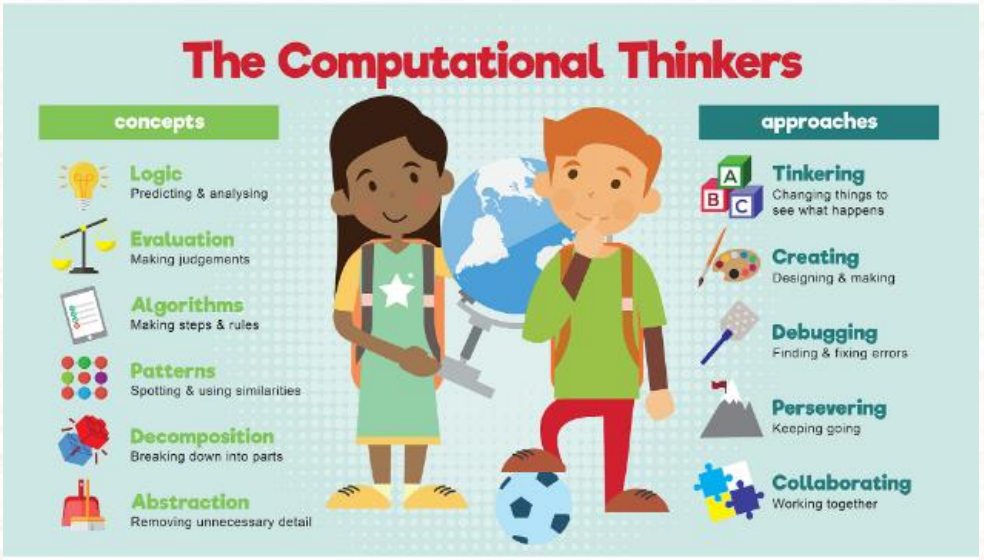
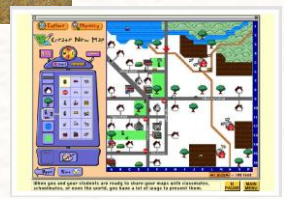


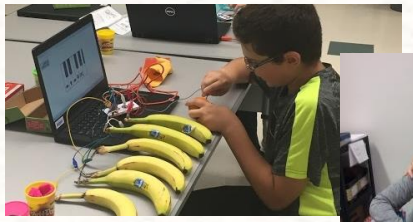
Davis Library Program

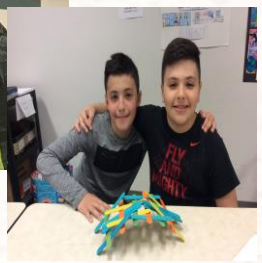
- Interdisciplinary project-based learning
- Engineering Design Process
- STEAM learning – high and low tech
- Start with drawings and building with Legos
- Minecraft Education
- Code.org in grades K-2
- Neighborhood Map Machine
- Demonstrate understanding of content
- Not carrying over to the classroom
- Connected to skills, practices and content from various content areas (i.e. math, science, reading)
- Students using technology more in classrooms. Need to connect to classroom content. Work of the former Instructional Technology Specialist and now Instructional Coach.



Lane Library Program

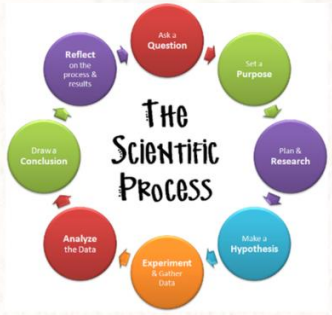
- Interdisciplinary project-based learning
- Engineering Design Process
- STEAM learning – high and low tech
- Code.org in grades 3-5
  - Unplugged: teach concepts
  - Online: apply knowledge
- Lego Robotics (Gr 3 & 4)
- Spheros - coding, relate to solving real world problems
- Invention Convention Gr. 5 - support for engineering and design with Leonardo diVinci unit
- TinkerCad - 3D design & printing
- Demonstrate understanding of the content
- Not carrying over into the classroom
- Connected to skills, practices and content from various content areas (i.e. math, science, reading)
- Students using technology more in classrooms. Need to connect to classroom content. Work of the former Instructional Technology Specialist and now Instructional Coach.



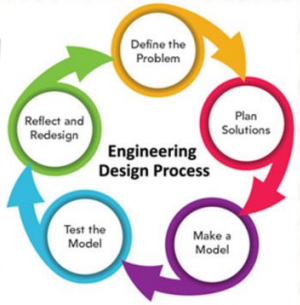


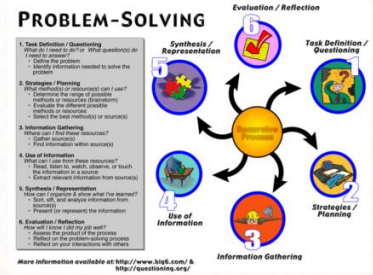
Computational Thinking: Davis and Lane Classroom Connections

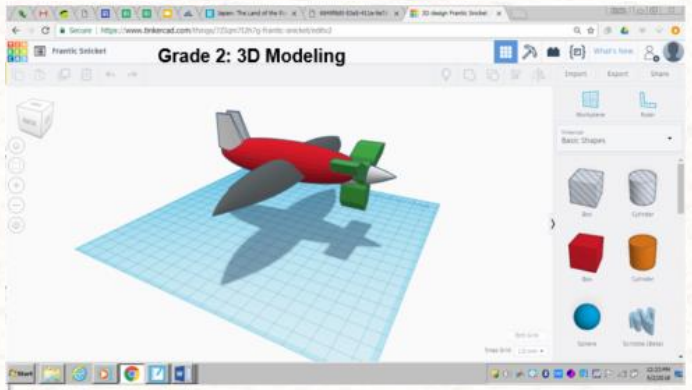
- Instructional Coaches collaborate with K-5 ELA Curriculum Coordinator, K-5 Math Coach and Curriculum Coordinator, and science curriculum coordinators on making explicit connections for students and teachers
- Instructional Coaches use data to inform practices, set goals, and create and facilitate PD
- Instructional Coaches collaborate with Lane faculty, K-5 curriculum coordinators, building administrators, and colleagues from the Technology and Library Media department to create and facilitate PD
- Establish common vocabulary and definitions (i.e. writing, patterns, problem, model, process, create, edit, etc.)
- Broaden the view of computational thinking in classroom practices making connections to prior experiences, knowledge and learning processes
- Instructional Coaches collaborate with classroom teachers to integrate computational thinking skills into curricula
- Instructional Coaches work with colleagues to integrate technology in new and effective ways to enhance teaching and learning

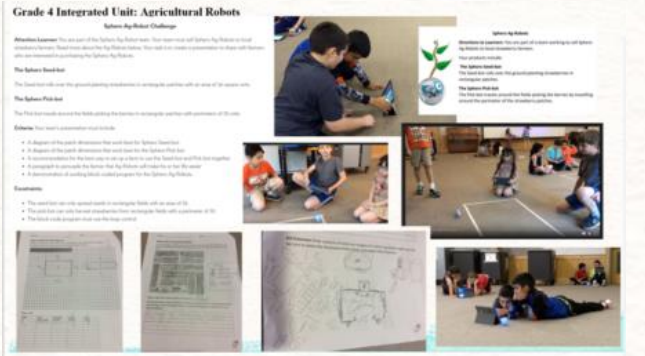


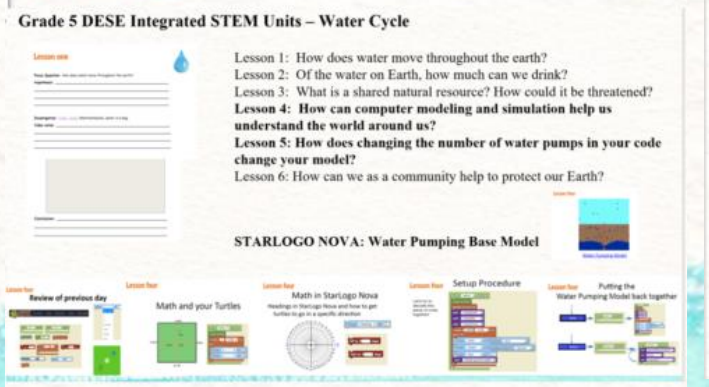
Common practices, processes, and vocabulary

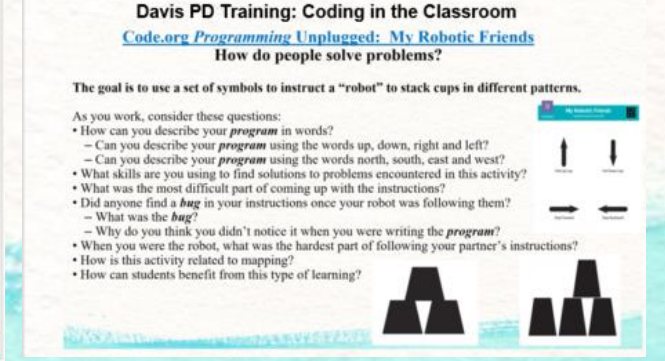




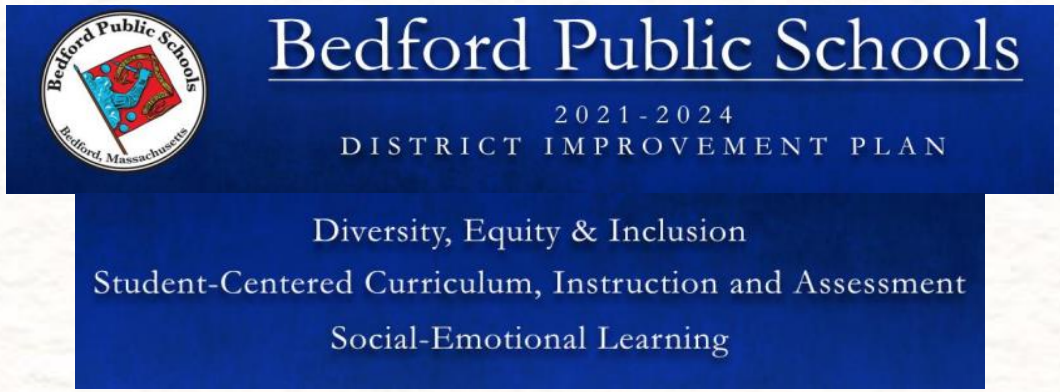








How can the Bedford Public Schools' Technology and Library Media Department best support district and school-based goals to **better enhance teaching and learning**?



Strategic Objective 1
Diversity, Equity, and Inclusion: Provide each student with the academic, social, and emotional support and services they need.

Strategic Objective 2
Student-Centered Curriculum, Instruction, and Assessment: We believe that by creating a curriculum that is student-centered we can implement instructional strategies that prioritize the student experience.

Strategic Objective 3
Social-Emotional Learning: We believe that Social Emotional Learning (SEL) is an integral part of a student's education. Students learn to develop healthy identities, emotions, achieve goals, show empathy, establish and maintain healthy relationships and make responsible and caring decisions.

Data Driven Decisions:

- District and school-based data wise teams
- Formative and summative assessments
- Standardized and benchmark assessments (i.e. MCAS, Track My Progress, Dibels, iReady)
- K-5 Data Dashboard (ELA and math)
- Observations, walkthroughs, meetings
- Surveys
- Teacher input
- Professional development
- Research
- Theory to practice
- Application of skills

'22-'23 School Year – 1 Department

Library	Instructional Coach	Technology
• 1.0 librarian Davis • 1.0 educational assistant Lane • 1.0 librarian JGMS • 1.0 librarian BHS	• 1.0 Davis • 1.0 Lane • .5 JGMS • .5 BHS	• 4.0 technicians • 1.0 data compliance specialist • 1.0 network server engineer • 1.0 director of information systems

1.0 Director of Technology and Library Media

Lane Library for the Current School Year

- 1.0 Educational Assistant (EA)
  - –17 years as an EA at Davis working in the Davis library and K-2 classrooms
- Collaborates with Lane faculty, staff and administration, Instructional Coach (housed in the library), K-5 ELA Curriculum Coordinator, PK-12 Librarians, Colleagues in the Technology and Library Media Department
- Administrative tasks, oversees the physical space and resources, and provides support to users of the library
  - Creates and maintains a welcoming environment
  - Sets up displays
  - Processes new books
  - Checks books in and out - book exchange scheduled 1 x week for all classes
  - Re-shelves books
  - Updates records in library database
  - Pulls books for teachers
  - Places orders for supplies
  - Provides support to classes using the library
    - –Library open for classes to sign up (i.e. books, research, projects, larger more open physical space, hands-on work (STEAM), etc.)
    - –Makerspace (i.e. 3D printer, poster printer, robotics, Legos, Cricut machine, etc.)
  - Oversight of and support for students sent to library independently (i.e. book exchange, work on projects, access equipment, etc.)
- Collaborates with and provides support to the K-5 ELA Curriculum Coordinator for Lane School Book Fair and ordering new books for the Lane Library

Instructional Coaches Combined Experience

- 53 years teaching experience
  - elementary school
  - middle school
  - high school
  - 43 years in Bedford Public Schools
- Classroom teaching experience
  - elementary classroom teacher, math and reading at middle school level, and all levels of math at high school level including Math Intensive, STEP, Algebra, Algebra II, Geometry, PreCalculus, Continuing Math courses, and Dual Enrollment Statistics
- Additional experience
  - Leadership positions
  - Science curriculum coordinator
  - Science curriculum developer
  - Math curriculum coordinator
  - Grade Level Leader
  - Elementary, Secondary and District-wide Data Wise Teams
  - Creator of K-5 Data Dashboard
  - Co-teaching facilitator

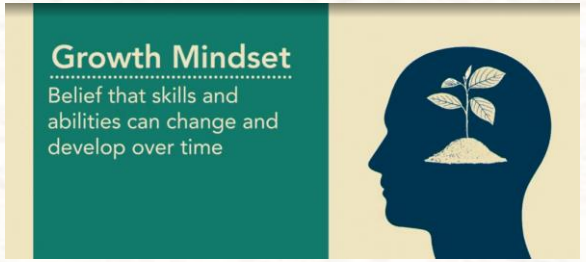
  - Co-chair/Chair of various committees/teams, some of which include hiring committees, Re-Opening committees, EdCamp committee, curricula committees, technology evaluation committees, Portrait of a Graduate committee, SST teams
  - Tenacity Coordinator at JGMS
  - Dual Enrollment Tech Coordinator
  - PD creator and facilitator
  - Formal training in ELL, STEM, school leadership
  - Members of various school-based committees

Examples of Instructional Coach Work District-wide

- Co-plan lessons with teachers around best practices and strategies to meet the diverse needs of all learners
- Co-teach to highlight workshop model
- Collaborate with co-teaching teams by attending common planning meetings and providing supports around lesson objectives, division of roles and responsibilities, useful resources
- Facilitate SST meetings that are solutions-oriented and focus on Tier 1 supports and strategies.
- Collaborate with teachers on designing units/lessons using UbD format, Skillful Teacher strategies, and UDL guidelines
- Determine the educational appropriateness of online applications, iPad apps, Chromebook extensions, etc.
- Developing digital resources to support Tier 1 instruction (digital checklists and choice boards to build student independence)
- Developing digital resources to support data collection around interventions (spreadsheets for common assessment data, Google Forms for student data)
- Supporting teachers as a central point of collaboration between a variety of practitioners
- Collaborating with building-based administrators, the K-5 Math Coach & Curriculum Coordinator, and the K-5 ELA Curriculum Coordinator to create data teams and determine the work that will happen
- Collaborate with classroom teachers on units of study with an eye on student engagement and understanding
- Collaborate with classroom teachers to streamline science units to ensure common experiences and common use of scientific language
- Support reading teachers with creating a data repository to track student progress, interventions and supports
- Collaborate with classroom teachers on developing and implementing digital citizenship lessons aligned with Responsive Classroom SEL work
- Support teachers with classroom management (observations, feedback, co-teaching, strategies, practices)
- Co-teach science lessons to model best practices and ways to maximize learning time
- Co-facilitate school-based data meeting with Principal around MCAS and Track My Progress data as a way to look at teaching practices and supports
- Support teachers who are looking for help with a particular class and/or student
- Working with teachers to analyze student data to inform practice
- Designed tutorials for use of various technology tools
- Analyzing district-wide technology survey data to inform decisions, goals, practice and PD opportunities
- Support teachers with instructional strategies and practices by observations and reflections. Share examples of best practices observed in classrooms with the larger school community and give credit to teacher
- Collaborate with teachers so all students know how to access built-in accessibility features on their Chromebooks

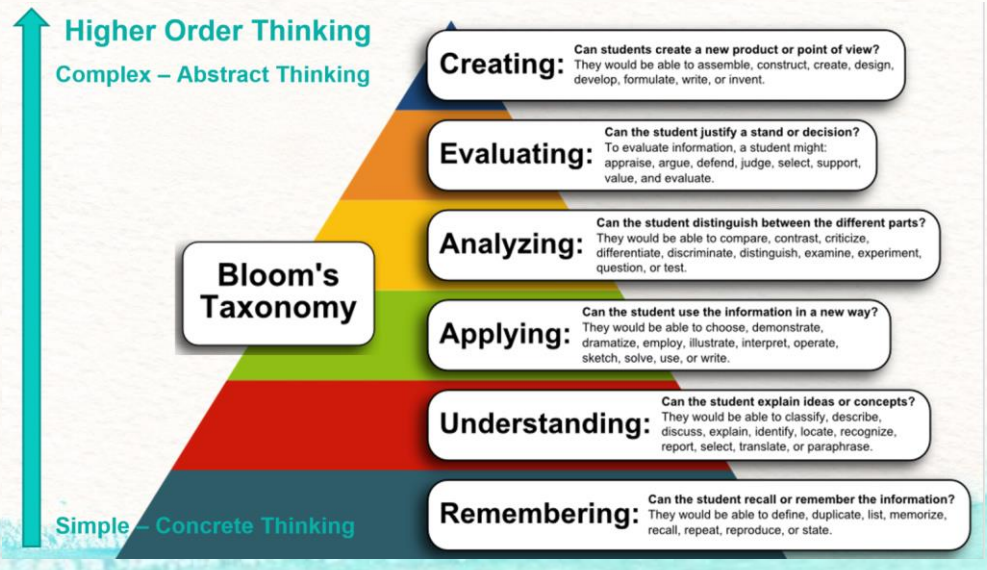
Examples of Instructional Coach Work District-wide

- Planning and facilitating school-wide PD to establish and maintain a data driven practice approach across all areas that engages paritcipants in a collaborative inquiry process
- Developing data collection and reporting tools around student growth and achievement
- Supporting teachers in integrating iPads in the classroom to enhance teaching and learning
- Collaborating with Kindergarten teachers to build student proficiency with accessing and using SeeSaw tools efficiently and effectively
- Working in classrooms with students to model how available digital tools and resources can be used to enhance teaching and learning
- Collaborating with teachers to incorporate technology into their practice to leverage student engagement
- Supporting teachers in their use of technology to meet the needs of all students, including those on the margins
- Collaborate with the art teacher on creating and implementing a digital art portfolio for 3rd graders
- Collaborate with K-5 Math Coach & Curriculum Coordinator to provide a workshop on the use of IXL, including reports to target student instruction
- Support classroom teachers new to Bedford and/or grade level (i.e. curricula, grade level expectations)
- Support teachers in using various technologies, i.e. SmartBoard, iPads, etc.
- Member of RULER Implementation Team – offer PD for staff and work with individual teachers to implement strategies in classrooms



"Coaches effectively improve teaching and learning, provide a deeper dimension of transformational change, build relationships based on trust to build capacity, and provide a tailored form of professional learning."

Instructional Coaching Group



Professional Development

- Ongoing
- District-wide Data Wise PD
- District-wide Research for Better Teaching Leadership PD
- Bi-weekly K-12 Instructional Coaches meeting with Director of Technology and Library Media
- Ongoing independent meetings with Director of Technology and Library Media
- Mentored by JGMS/BHS Instructional Coach
- K-12 department meetings with librarians
- Flexibility to meet with librarians as needed
- BHS Librarian provide research PD for Lane Instructional Coach and JGMS Librarian
- Professional groups and organizations

Jim Knight: Instructional Coaching Group

Summer PD for Davis and Lane Instructional Coaches:

Based on more than twenty years of research conducted by **Jim Knight** and researchers at The Instructional Coaching Group, this 8 week course is intended to give new coaches the essential knowledge they need to understand their role and get started.

Topics To Be Covered:

- How to enroll teachers in coaching
- How to partner effectively with your principal
- Discuss your role with your principal
- Determining what should and should not be shared with administrators
- Understanding your role and how to describe it
- Understanding and successfully addressing teacher resistance through the partnership principles
- Planning your coaching day
- Documenting what you do
- Helping teachers use video and other methods to get a clear picture of reality
- Identifying the highest-impact teaching strategies teachers can use to hit goals
- How to set goals with teachers
- What a typical goal might look like
- How to explain teaching strategies
- How to ensure teachers see what strategies look like in action
- How to gather data and what data to gather

BER – Bureau of Education & Research

PD for Lane Instructional Coach and JGMS Library Media Specialist

Bureau of Education & Research (BER) is the leading provider of professional development and PD training resources for educators in North America. This is specifically designed for School Librarians/ Media Specialists, Social Studies Teachers, English/Language Arts Teachers and Library Aides Serving Grades K-12

Teaching Media Literacy Skills in a Fake News World

Practical strategies to help students effectively navigate diverse media resources for **accurate, up-to-date, factual information**

Proven methods for teaching essential media literacy skills while avoiding heated or uncomfortable discussions

Innovative approaches for relevant and timely learning that builds media literacy skills that can be utilized across the curriculum

Receive an extensive digital resource handbook with practical strategies and resources