



Mississippi Department of Education

SCHOOL LIBRARY PROGRAM

MISSISSIPPI DEPARTMENT OF EDUCATION

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MISSISSIPPI DEPARTMENT OF EDUCATION

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INTRODUCTION

This document provides guidance to help librarians integrate instruction into the Mississippi Department of Education College- and-Career Readiness Library Learning Standards. School librarians play a critical role in teaching information literacy skills to ensure students can acquire, evaluate, interpret, and apply the information that will be introduced throughout life. The librarians are no longer the "keeper of books" but are crucial in preparing students for life after graduation. School libraries are now where high-quality print and digital resources are used efficiently to teach reading comprehension, literature appreciation, and information literacy skills. For these skills to be effective, librarians and classroom teachers must work as a team to incorporate them into the College- and-Career Readiness Standards. The goal for the Lesson Plans for Libraries is to reinforce classroom curriculum content with relevant library resources.

HOW TO READ THE LESSON

Each lesson has several different elements: Grade Level, Summary/Overview, Collaboration, Pre/Post Assessments, Objectives, Tasks, and Resources. Each activity gives the librarian a foundation for teaching the skill or objective; however, the librarian can differentiate as needed for the students. The resource lists optional books or materials to be used with the activity, but any resource that supports the lesson can be used.

SCHOOL LIBRARIAN PROFESSIONAL GROWTH RUBRIC ALIGNMENT

- **I.1:** Consults with teachers, administrators, and school library advocacy committee to create Student Learning Outcome and School Library Program SMART Goals to plan for and provide necessary resources, technology, and instructional services aligned with the Mississippi Library Learning Standards and supports the Mississippi CCR Standards.
- **1.2:** Plans instruction and provides print and digital resources that meet the diversity of students' backgrounds, cultures, skills, learning levels, language proficiencies, interests, and special needs by working with teachers, administrators, and the school library advocacy committee.
- II.5: Collaboratively plans and teaches engaging inquiry-based informational and digital literacy lessons that incorporate multiple literacies and foster critical thinking as an integral part of the Mississippi Library Learning Standards and the Mississippi CCR Standards.

DIFFERENTIATION

The school library is a learning space for students and teachers to study, research, read, question, discover and connect to the global community. It is an information- and technology-rich learning environment that all students should have open access to highquality diverse resources and technology. It is not possible to offer all these options to learners in an isolated classroom. The following elements provide some examples of how school librarians can differentiate library lessons.

CONTENT

- Ensure a variety of resource types are available to support content in all subject areas (e.g., fiction, nonfiction, periodicals, digital resources)
- Build a diverse collection that reflects and enhances the school demographics as well as connects to the global community
- Introduce students to a wide range of genres to expand their reading horizons
- Develop reading lists and pathfinders to support specific lessons and units
- Help students to be responsible users of information and ideas
- Provide high interest-low level books in accordance with units being studied or for literature appreciation

PROCESS

- Repeat/reword/rephrase directions as needed
- Break information into steps and monitor comprehension at small stages
- Reduce the number of concepts presented in one lesson or activity
- Use assessment tools and strategies that help ALL students grow
- Extend time as needed or reconsider requirements

PRODUCT

- Share authentic product exemplars (e.g., posters, video, presentations)
- Provide authentic venues for building and sharing expertise
- Help students extend sharing or take action beyond the school walls

LEARNING ENVIRONMENT

- Provide preferential seating in an area free of distractions
- Provide multiple spaces for individual small-group and whole-class learning
- Match resources to students whatever their skill level
- Create flexible open spaces
- Arrange quiet areas for study and relaxation
- Design virtual library spaces for study and support available 24/7

Differentiation accommodates all student needs, including students with low skill levels, English learners, limited background knowledge, and gifted learners. The following list provides specific examples of how school librarians can differentiate library lessons for specialized student needs.

- Analyze the demographics of your school population and their achievement levels to develop a well-rounded library collection
- Use elements of differentiation as a framework for developing SMART goals and budget proposals
- Share your student successes with the school community

COLLABORATIVE LESSON PLAN

Collaboration is an essential element that enhances student achievement and the school curriculum. The librarian and the grade/subject area teachers must work together to create a high-quality learning environment. The following is an example of a collaborative lesson plan and an explanation of how to collaborate with teachers.

Section 1: LESSON INFORMATION				
Title or Unit:	Title or Unit:			
Grade Level:	Content Area:			
Type of Instruction:	Est. Time & duration:			
Individual Instruction Small Group Whole Group	Content Topic:			
Type of Schedule: Stand-alone Lesson Lesson in a Unit Multiple Unit Lessons	Overview: summary of the lesson			
Level of Collaboration: Collaboration Coordination Cooperation	Learning Target:			

Section 2: STANDARDS CONNECTION		
MS CCR Standards: MS School Library Learning Skills:		
Essential Questions: Connect w/ students (prior learning, accessible language) Genuine inquiry (open-ended) Encourage transfer across a range of learning experiences	Critical Concepts/Vocabulary:	
Comments & Notes:		

Section 3: ASSESSMENT EVIDENCE

Performance Tasks: How will students demonstrate the desired understandings? By what criteria will performance be judged?

Final Student Product:

Product Criteria: To be entered into a rubric, checklist, graphic organizer.

Other Evidence: What other evidence will show that students have understood? (prompts, observations, journal, library data)

Literature Connection:

Technology Integration: What level of integration serves the product criteria & process/performance tasks?

Section 4: INSTRUCTION & LEARNING PLAN Resources Students will Use: Preparation: Books Reference Digital resources Audio/Visual materials Other (list):

Pre-Assessment:

Direct Instruction for Students:

Modeling & Guided Practice: How will students acquire the knowledge to practice the required skills? How will the formative assessment be used to give students feedback?

Independent Practice: How will they practice applying these skills? Give precise directions.

Post-Assessment: What did the students learn? How will we know?

Documents: Pathfinders, rubrics, checklists

Differentiation Strategies: How are we differentiating teaching and learning for all? How have we made provision for those learning in a language other than their native tongue? How have we considered those with special educational needs?

Section 5: REFLECTIONS & EVALUATION					
Complete evaluation: 1=poor; 2=below average; 3=average; 4=above average; 5=excellent					
Variety of materials are available (as required by the topic)	1	2	3	4	5
Materials span reading/viewing/ listening levels of students	1	2	3	4	5
Supplemental documents were easy to understand and helpful	1	2	3	4	5
Evaluate the success of overall lesson and activity	1	2	3	4	5
Comments & Notes:					

LEVELS OF COLLABORATION

Lev	Level Planning Service Subtype		Examples		
COLLABORATION	6	Coplanning Required Coplanning occurs when equal partners	Collaboration The school librarian and the classroom teacher should schedule formal planning time to design a lesson or unit of instruction to achieve shared goals and specific student learning outcomes. They complement the lesson or unit using one or more co-teaching approaches. Collaborators co-monitor student progress and share responsibility for assessing and analyzing student learning outcomes.	Team Teaching	After collaborative planning, educators coteach by assuming different roles during instruction.
	work together to design instruction. Educators begin with the end in mind – students' performance of the	design instruction. Educators begin with the end in mind – students' performance of the		Parallel Teaching	Each educator works with a portion of the class to teach the same or similar content using the same or different modalities. Groups may switch or reconvene as a whole class to share, debrief, or reflect.
	5	5 learning objectives. During coplanning, educators codesign assessment instruments and align students' learning		Station Teaching	After determining curriculum content for multiple learning stations, each educator takes responsibility for facilitating one or more learning centers, while in other centers, students work independently.
	4	tasks with objectives and assessments.		Alternative Teaching	One educator pre-teaches or re-teachers concepts to a small group while the other educator teaches a different lesson to the larger group.
IATION	3	Coplanning Required (see above)	Coordination Coordination requires mor communication than coope includes a shared mission a	eration. It	The school librarian aligns library instruction with the topic or learning objectives the classroom teacher is
COORDINATION	2	A brief conversation about a lesson topic or objective.	planning and can be suppo longer time period. Often t teacher will take the lead ir activities and the school lib along in a supporting role.	rted over a he classroom coordination	addressing in the classroom. OR The school librarian may support classroom teachers by helping them implement a new strategy, tool, or resources.
COOPERATION	1	A brief conversation about a lesson topic or objective.	Cooperation Compared with collaboration, cooperation tends to be more informal, short term, and often lacks a focused planning effort. The classroom teacher and school librarian may not have a shared mission, but rather provide supporting resources or materials to help student achievement.		The school librarian provides print, digital, or technical resources for students' and classroom teacher's use in the classroom or in the library. The school librarian is not involved in the instruction.

RESOURCE Berg, K., Kramer, J., & Werle, M. (2019). Implementing & Evaluating Instructional Partnerships. Knowledge Quest, 47(3), 32-38.

SCOPE AND SEQUENCE

Due to collaboration between school librarians and classroom teachers, the Lesson Plans for Libraries does not address a specific scope and sequence of each skill. Each skill should be covered at some point during the school year. There are skills such as Library Conduct that will need to be addressed at the beginning of the school year. Other skills such as **Literature Appreciation** can be repeated several times throughout the year in collaboration with classroom content. The following instructional framework gives the librarians an example of how to plan library lessons according to classroom curriculum, school library programs, and reading foundational skills.

INSTRUCTIONAL FRAMEWORK

MONTH	LIBRARY LEARNING STANDARDS
August	 LIB.IL.1.1-2; LIB.LU.2.1-2 Reinforce/Master the media center and its sections, the librarian, book care, expectations LIB.LU.2.3 Reinforce book selection procedure RED.PB.3.1-4 Reinforce parts of books
September Collaborate with the public library to promote Library Card Sign-up Month	 LiB.IL.1.3; LiB.IL.1.6 Reinforce online catalog elements (e.g., type of material, publication, location, call number) LiB.IL.1.4-5 Continue to introduce all numbers and the Dewey Decimal System LiB.IL.1.7-9 Introduce other online catalog elements (e.g., keywords, ILL, and interactive features) LiB.LU.2.3 Continue to book selection procedure RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 Engage students through story time, including folktales, and to promote The Magnolia Book Awards and Hispanic Heritage Month RES.PR.2.1; RES.PR.2.4; RES.PR.2.6 Reinforce Dictionary/ Thesaurus skills to support classroom instruction

October

Adopt a Genre lesson plan

• LIB.IL.1.4-5

Continue to introduce all numbers and the Dewey Decimal System

LIB.IL.1.7-9

Continue to introduce other online catalog elements (e.g., keywords, ILL, and interactive features)

RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9

Continue to engage students through story time to promote The Magnolia Book Awards and Bullying Prevention Month

RED.LV.1.3; RED.LA.2.4-7; RED.LA.2.10

Focus on topical information to promote **Bullying Prevention Month**

RED.LA.2.2

Continue to introduce fiction section, genres, and fiction books that are appropriate for grade level.

RED.LA.2.11

Introduce reading programs

November

American Revolutionary War and Creating Bibliographies lesson plans

• LIB.IL.1.1; LIB.LU.2.1-2

Master proper library behavior

• LIB.IL.1.4-5

Continue to introduce all numbers and the Dewey Decimal System

RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9

Continue to engage through story time to promote The Magnolia Book Awards, Read for the Record Book, and Native American **Heritage Month**

• RED.LV.1.3; RED.LA.2.4-7; RED.LA.2.10

Focus on topical information to celebrate Native American Heritage Month

• RED.LA.2.3

Discuss award winners

RES.PR.2.1; RES.PR.2.4; RES.PR.2.6

Teach Atlases and Almanacs skills to support classroom instruction

RES.PR.2.2-3; RES.EV.3.1-5

Teach Bibliography skills to support classroom instruction

Bobbing Boats lesson plan **December** • LIB.IL.1.1; LIB.LU.2.1-2 Reinforce proper library behavior LIB.IL.1.3; LIB.IL.1.6 Continue to introduce online catalog elements (e.g., type of material, publication, location, call number) RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 Continue to engage through story time to promote The Magnolia Book Awards and celebrate different holidays RED.LA.2.2 Discuss series and authors • RES.ID.1.1-4; RES.EV.3.1-5; RES.CO.4.1; RES.RE.5.1-2 Reinforce research to support classroom instruction **Reporting the News** lesson plan January • RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 Continue to engage through story time to promote The Magnolia Book Awards RED.LA.2.2 Reinforcement of skills learned to date, including titles, authors, and illustrators RES.PR.2.2-3; RES.EV.3.1-5 Teach Bibliography skills to support classroom instruction DIG.CI.2.1-4 Teach Copyright and Fair Use skills to support digital research instruction RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 **February** Continue to engage through story time to promote The Magnolia Book Awards and African American History Month Reinforcement of skills learned to date, including titles, authors, and illustrators RES.PR.2.3; RES.PR.2.5; RES.EV.3.1-5; RES.CO.4.1-3; RES.RE.5.1-2; DIG.CO.1.1-4 Reinforce digital resources and collaboration to support African American History Month RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 March Continue to engage through story time to celebrate Women's History Month and National Nutrition Month RED.LV.1.3; RED.LA.2.4-7; RED.LA.2.10; RED.PB.3.4 Focus on topical information to celebrate Women's History Month and National Nutrition Month

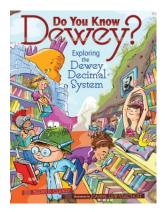
	 RED.LA.2.2 Reinforcement of skills learned to date, including titles, authors, and illustrators RES.PR.2.3; RES.PR.2.5; RES.EV.3.1-5; RES.CO.4.1-3; RES.RE.5.1-2; DIG.CO.1.1-4; DIG.PR.3.1-3 Teach digital resources and presentation skills to support Women's History Month and National Nutrition Month
April	 RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 Engage through Reader's Theater to celebrate Earth Day and Children's Book Day RED.LV.1.3; RED.LA.2.4-7; RED.LA.2.10; RED.PB.3.4 Focus on topical information to celebrate Poetry Month, Earth Day, and Children's Book Day RED.LA.2.2 Reinforcement of skills learned to date, including titles, authors, and illustrators
May Collaborate with the public library to promote Summer Reading	 RED.LV.1.1-2; RED.LA.2.4; RED.LA.2.8-9 Engage through Reader's Theater to promote summer reading RED.LV.1.3; RED.LA.2.4-7; RED.LA.2.10; RED.PB.3.4 Focus on topical information to promote summer reading RED.LA.2.2 Reinforcement of skills learned to date, including titles, authors, and illustrators

DEWEY DECIMAL SYSTEM

Library Skills Topic: Dewey Decimal System

MAGNOLIA: Lesson Plans and Activities for PK12 Librarians and Classroom Teachers

SUMMARY



Beginning with explaining why Melvil Dewey made a system to organize books, this book shows how the Dewey decimal system keeps books grouped by subject. Written in rhyme, the book gives a short, fun explanation of what can be found under each of the general Dewey numbers. Humorous, lively illustrations depict the adventures young readers can find while searching topics. There is a good explanation of how to use the Dewey system and what call numbers are used. This is a book librarians will turn to over and over again as they introduce the Dewey

decimal system to young students.

COLLABORATION

- These lessons should be collaboratively planned with the grade level teacher(s) and the librarian. The OPAC Scavenger hunt could include topics related to what is being taught in the classroom.
- If the library's fiction section is organized by genres, an additional lesson can be taught to introduce students to the fiction section.
- It should take no longer than 3 class library visits to complete the lessons.

PRE-ASSESSMENT

Students will read "A Story about the Dewey Decimal System of Classification" from the School Library Journal ("A Story about the Dewey Decimal System of Classification." School Library Journal, vol. 22, no. 6, Feb. 1976, p. 20.) Students will use the Padlet App to write interesting facts about the library's organizational system.

CURRICULUM CONNECTIONS

MSCCRS Library

LIB.IL.1.3 Use the library's automated catalog system to find resources for academic assignments and/or personal growth.

LIB.IL.1.4 Define call number, why it is used and where it is found.

LIB.IL.1.5 Locate books by using Dewey Decimal Classification System or other classification systems such as genre or Library of Congress.

LIB.IL.1.6 Interpret information in the library's automated system (e.g., type of material, publication, location, call number).

LIB.IL.1.7 Convert guide or keywords into subject headings that will be found in the automated system.

RED.LA.2.1 Distinguish literature (fiction) from informational (non-fiction) text.

MSCCRS English

RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information and provide a list of sources.

MSCCRS Computer Science

DA.1B.3 Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.

LESSON 1

INTRODUCTION (Library)

Objective

• Students will demonstrate an understanding of the Dewey Decimal System by searching and locating non-fiction books of interest and identifying principles of classification and major classes of classification.

Duration

1 class period

Materials

- **Dewey Decimal poster**
- "The Decimal Rap"
- Do You Know Dewey? By **Brian Cleary**
- Map of your library (print or online)

- 1. Introduce the library and location of main areas, including fiction and nonfiction books.
- 2. Lead a discussion about why organizing books is important and the background of the Dewey Decimal System using the Do You Know Dewey?: Exploring the Dewey Decimal System (2013).
- 3. Solicit suggestions for how books might be organized and remind students about call numbers.
- 4. Indicate signs and shelf markers used to indicate the ten major classes of the Dewey Decimal System.
- 5. Point out specific areas of known student interest (Guinness books, sports, dinosaurs, pets, graphic novels, etc.)
- 6. Watch "The Decimal Rap" https://youtu.be/NHiUQb5xg7A.



LESSON 2 ORGANIZATION (Library)

Objective

 Students will use the OPAC to search for books by keywords, titles, authors, and other criteria.

Duration

1 class period

Materials

- Computer with Internet access to the library's **OPAC**
- "The Dewey Decimal System" Prezi
- OPAC Scavenger Hunt

TASKS

- 1. Use an introductory activity based on "Hunting for Books."
 - (Hoover, Janet Flynn, and Michael Palan. "Hunting for Books." Jack & Jill, vol. 56, no. 7, Oct. 1994, p. 36. Explora)
- 2. Teach students how to use the search feature in the automated system to find titles, authors, subjects, or series.
- 3. Showcase a holdings record for a book in the automated system and ask students to describe the different parts of the record.



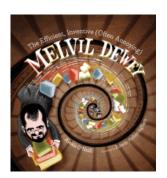
- 4. Remind students that the same information can be found on the title or copyright page of the print resource.
- 5. Have students complete the OPAC Scavenger Hunt using the school library's OPAC system. (Use Scavr, Quickhunts, or Goose Chase to create the hunt.)

POST-ASSESSMENT

Students will have multiple opportunities to use the OPAC to identify fiction and nonfiction books. Students will practice organizing nonfiction books by playing Shelver http://www.mrs-lodges-library.com/play-shelver/.

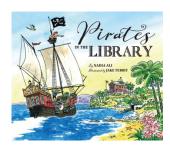
RESOURCE PATHFINDER

Print Resources



Efficient, Inventive Melvil Dewey by Alexi O'Neill - FIC ONE

When Melvil Dewey realized every library organized their books differently, he wondered if he could invent a system all libraries could use to organize them efficiently. A rat-a-tat speaker, Melvil was a persistent (and noisy) advocate for free public libraries. And while he made enemies along the way as he pushed for changes--like his battle to establish the first library school with women as students, through it all, he was EFFICIENT, INVENTIVE, and often ANNOYING as he made big changes in the world of public libraries--changes still found in the libraries of today!



Pirates in the Library by Nadia Ali - FIC ALI

Prepare to set sail for the adventure of a lifetime as the fierce Captain Jake discovers a treasure map that leads him and his pirate crew (and parrot, too) right to the library. Ms. Benitez, the librarian, welcomes the pirates to the library as long as they behave! And the search is on for the treasure promised to be hidden within the library. It's not too long before all the pirates (and the parrot, too) are captivated by the jewels they find on the bookshelves. Now the dilemma is how to get all the newfound treasure back to the pirate ship?

Non-Print Resources

Common Sense Education

www.commonsense.org/education/lesson-plans/learning-applying-the-dewey-decimal-system Site includes lesson plans and scavenger hunts

Staying Cool in the Library

www.stayingcoolinthelibrary.us/making-dewey-fun-roundup-of-ideas-games/ Site provides activities and games for students to play

MAGNOLIA Resources

- Cassidy, T. K. "The Dewey Game: An Activity for Third to Fifth Graders." Library Talk, vol. 13, no. 4, Sept. 2000, p. 18.
- Hogsett, Nancy. "Teaching Dewey." Library Media Connection, vol. 24, no. 4, Jan. 2006, pp. 28-31.

CREATING BIBLIOGRAPHIES

Science Topic: Animals

OVERVIEW

Students want to learn more about topics that interest them either for personal or academic reasons. Creating booklists and using the various features on the library's online automated system will allow students to curate resources to share with others. This lesson will teach students how to read the different elements of a record, how to place a book on hold, and how to add a book review or a rating. The lesson can be taught using different lists such as people, animals, or fiction genres to help students delve deeper into what is being taught in the classroom.

COLLABORATION

- These lessons should be collaboratively planned with the grade level teacher(s) and the librarian.
- It should take no longer than 3 days to complete the lessons 1 day in the classroom and 2 class library visits.

PRE-ASSESSMENT

Students will complete a quick writing activity describing how they keep track of books that they want to read and explaining how students can tell if the books will contain helpful information.



CURRICULUM CONNECTIONS

MSCCRS Library

LIB.IL.1.6 Interpret information in the library's automated system (e.g., type of material, publication, location, and call number).

LIB.IL.1.7 Convert guide or keywords into subject headings that will be found in the automated system.

LIB.IL.1.8 Place holds on materials using the library's automated catalog system or request materials through ILL (Inter Library Loans) using other online catalogs (e.g., public library or World Cat).

LIB.IL.1.9 Utilize interactive features of the online catalog such as book reviews, book lists, and ratings.

RED.LA.2.2 Select books on subjects that are on the student's academic/interest levels and explore particular authors, illustrators, series, genres, and diverse perspectives.

RED.LA.2.10 Apply reading strategies across the content areas.

RED.LA.2.11 Encourage other students to read through book reviews and book talks while respecting others' reading choices.

DIG.CO.1.1-4 Collaboration and Communication Standard

MSCCRS English

W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

W.4.6 With some guidance and support from adults, use technology, including the Interne, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills.

SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

MSCCRS Science

L.4.2 Students will demonstrate an understanding of life cycles, including familiar plants and animals (e.g., reptiles, amphibians, or birds).

L.4.2.1 Compare and contrast life cycles of familiar plants and animals.

L.4.2.2 Develop and use models to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, or butterflies) including commonalities (e.g., birth, growth, reproduction, or death).

LESSON 1

INTRODUCTION (Classroom)

Objective

 Students will locate helpful resources to answer questions regarding their chosen animal.

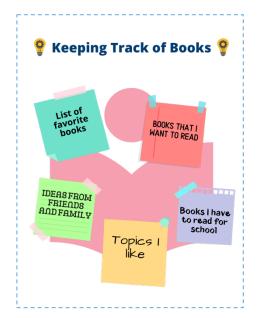
Duration

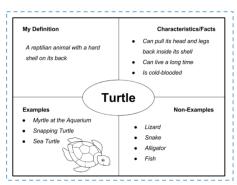
• 1 class period

Materials

- Example of Keeping Track of Books anchor chart
- Frayer Model worksheet
- List of animals for each group
- Markers, pencils, and sticky notes

- 1. Divide students into small groups and allow each group to select an animal for the activity.
- 2. Have each group complete a Frayer Model worksheet based on their prior knowledge of the chosen animal.
- 3. Discuss that the Frayer Model will help students create keywords or search terms when using the library's automated system.
- 4. Explain that the students will work together to create a list of books about their animal and discuss ways to keep track of books using the Examples of Keeping Track of Books anchor chart.





LESSON 2 CURATING A BOOKLIST (Library)

Objective

 Students will curate a booklist based on their chosen animal.

Duration

1 class period

Materials

- Animals
- Book List tutorial
- Computer with Internet access
- Example of Book Record
- Frayer Model

- 1. Discuss what kind of information should students to learn more about the chosen animal.
- 2. Remind students how to search using the library's automated system and use the Frayer Model to create search terms to find information about the animal.
- 3. Distribute students' usernames and passwords to access the library's automated system.
- 4. Explain to students how to create a list or bibliography of nonfiction books about the animal.
- 5. Once each group has created a book list, show students how to use the hold feature of the library's automated system.
- 6. While students are working on the assignment, they can check out books on their chosen animal. These books will be used in the final part of this lesson.



PRESENTATION (Library) LESSON 3

Objective

• Students will write a book review and read reviews from other students.

Duration

1 class period

Materials

- Book Reviews anchor chart
- Book Review tutorial
- Computer with Internet access
- Markers, pencils, and sticky notes
- Nonfiction books

TASKS

- 1. Introduce the lesson by asking students why book reviews are important.
- 2. Discuss the components of a book review and write them on the Book Review anchor chart. (e.g., start by engaging the reader with a question or an interesting statement).
- 3. Demonstrate how to review a book on the library's automated system and explain that students should write a review on the book they checked out on the animal.
- 4. Distribute students' usernames and passwords to access the library's automated system.

POST-ASSESSMENT

Students will complete a quick writing activity describing how book reviews, keywords, and book lists can help search for appropriate library resources.

RESOURCE PATHFINDER

Print Resources



The Big Book of Beasts by Yuval Zommer - 590 ZOM

The *Big Book of Beasts* approaches the world of beasts thematically, looking at mythical beasts, Ice Age beasts, beasts on your street, and how to save beasts in danger of extinction.

Appears on the Equipped: MS Booklist for All



The Blue Whale by Jenni Desmond - 599 DES

A small boy wearing a striped shirt and a red crown guides readers through the many amazing features of a blue whale, from its three-ton tongue to a mouth that boasts standing room for up to 50 people, while offering up facts about the diet, behaviors, and life cycle of blue whales.

Appears on the Equipped: MS Booklist for All



Fur, Feather, Fin by Diane Lang - 590 LAN

There are so many wild and wonderful animals in our world. Some have fur, some have feathers, some have fins, but all are connected. This factfilled exploration of the diversity of the animal kingdom celebrates mammals, birds, insects, fish, reptiles, amphibians, and more!

Appears on the Equipped: MS Booklist for All



Ocean Emporium by Susie Brooks - 591 BRO

Beneath the ocean waves lies a web of life that ties together creatures great and small. Fan favorites like hermit crabs and great white sharks share space with mysterious bottom-dwellers like mimic octopuses and giant sea spiders in this gorgeous exploration of the sea.

Appears on the Equipped: MS Booklist for All

REPORTING THE NEWS

Science Topic: Technological Breakthroughs

OVERVIEW

Students use technology every day, but do they ever stop and wonder about the inventors who made certain technology possible? This lesson encourages students to investigate inventors such as Alessandro Volta, Michael Faraday, Nicola Tesla, and Thomas Edison through researching news articles and reading their biographies. As students read, gather, and present information about the inventory, they learn how these inventions changed and shaped the past and influenced the future of technology. Further, students examine how inventions directly impact their own lives.

COLLABORATION

- The lesson can be completed in no more than seven class periods.
- Research can be introduced and concluded in the library while the writing, editing, and rewriting can be accomplished in the classroom.

PRE-ASSESSMENT

Students will complete a quick writing activity describing what they already know about the inventors or the inventions. In the description, students should include how those inventions help students throughout their day.

CURRICULUM CONNECTIONS

MSCCRS Library

RED.LA.2.6 Read to understand history, current events, cultural relevancy, and personal decisions within the global community.

RED.LA.2.11 Encourage other students to read through book reviews and book talks while respecting others' reading choices.

RES.ID.1.3 Develop, select, clarify, and use research questions, keywords, search terms (Boolean search operators), or strategies to guide inquiry, narrowing or broadening the topic as necessary.

RES.PR.2.1 Use various reference resources (e.g., encyclopedia, newspaper, magazine, almanac, atlas, biographical sources, internet source, and dictionary) to find information.

RES.PR.2.5 Identify and use MAGNOLIA, selected Internet sites, or other databases for credible research resources.

RES.PR.2.6 Select and use tools within sources to access content (e.g., table of contents, indexes, keyword searches, sidebars, and related subjects).

RES.EV.3.1 Evaluate information for accuracy, validity, importance, relevance, readability, and bias.

RES.EV.3.3 Select, record, and organize information from multiple sources that addresses the information problem, answers guiding questions, and completes an evaluation criterion.

RES.CO.4.1 Discuss and apply intellectual property, copyright, plagiarism, and fair use guidelines.

RES.CO.4.2 Generate accurate notes to create quotes, paraphrase information, and develop citations to avoid plagiarism when gathering, presenting, or publishing information.

RES.CO.4.3 Follow standard bibliographic formats to use and cite sources.

DIG.PR.3.3 Present information and sources using a variety of presentation techniques (e.g., writing, speaking, and media) to communicate new understandings.

MSCCRS English

- RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- W.4.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- **SL.4.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

MSCCRS Science

P.4.6A.5 Use informational text and technology resources to communicate technological breakthroughs (e.g., Alessandro Volta, Michael Faraday, Nicola Tesla, Thomas Edison)

LESSON 1 INTRODUCTION (Library)

Objective

• Students will describe the contents of magazines and newspapers in the library.

Duration

• 1 class period

Materials

- Computer with Internet access to MAGNOLIA
- Periodicals
- Pre-labeled sticky notes

- 1. Model the different elements of magazines and newspapers located in the library's periodical collection. If the library does not have print periodicals, then show students examples from EXPLORA located on MAGNOLIA.
- 2. Have the students browse through the collection (print or digital) to choose one magazine and one newspaper and use the pre-labeled sticky notes to help identify the different elements of each type.
- 3. Have students write a summary of the magazine or newspaper article.
- 4. Allow students to volunteer to read their magazine or newspaper summary to the class.



Objective

• Students will write a current event summary based on an article in a periodical.

Duration

• 1 class period

Materials

- Age-appropriate periodicals
- Computer with Internet access to MAGNOLIA
- Current event worksheet or writing rubric
- Publication citation guide

- 1. Refresh students on periodicals (magazines/newspapers) and how to use EXPLORA on MAGNOLIA to find a current issue of a periodical.
- 2. Have students individually research and select a current event topic regarding technological breakthroughs.
- 3. Ask students to complete the current event worksheet to write a summary of the topic.
- 4. Model/refresh how to cite publications for the current event summary.
- 5. Allow students the opportunity to share their summary and why the student chose the topic.



LESSON 3 **RESEARCH** (Library)

Objective

• Students will list and describe different types of biographical sources.

Duration

1 class period

Materials

- Age-appropriate biographical sources
- Computer with Internet access to MAGNOLIA
- Web graphic organizer

- 1. Create a slideshow or some type of presentation to explain the difference between biography, autobiography, and collective biography.
- 2. Compile a collection of print or digital biographical resources on inventors such as Tesla, Edison, Faraday.
- 3. Have students brainstorm questions about each scientist's life and then work with students to organize or categorize questions.
- 4. Place students in small groups to research their selected scientists using a biographical source.
- 5. Model how to a use web graphic organizer to gather facts about the person.
- 6. Refresh students on creating citations for each source used to complete the activity.

LESSON 4

SHARING (Library)

Objective

 Students will select a book and write a review of the text.

Duration

- 1 class library period
- Finish book trailer in class

Materials

- Book trailer creator app
- Book trailer rubric or script template
- Example of a book trailer

TASKS

- 1. Introduce the concept of a book trailer and how talking about books enhances their understanding and enjoyment.
- 2. Distribute index cards to students and explain how the students will take notes about what they want to share with other readers.
- 3. Model how to ask questions or make comments that would entice other students to read the book or learn more about the book's author, topic, or theme.



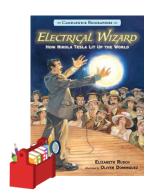
- 4. Watch a book trailer so students will have a better understanding of how the video promotes reading.
- 5. Model how to use the book trailer template/rubric to create a rough draft script.
- 6. Model how to create a book trailer using Powtoon, Biteable, Animoto, Adobe Spark, or iMovie.

POST-ASSESSMENT

Students will review their pre-assessment writing activity to determine if they have learned more about the inventor that they researched. Have students describe the new information that they learned during the lesson.

RESOURCE PATHFINDER

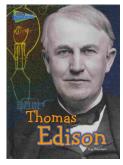
Print Resources



Electrical Wizard Elizabeth Rusch - 621 RUS

A brief biography of Serbian-American scientist Nikola Tesla, whose early fascination with electricity caused him to go on to invent alternating current and many devices that helped bring electricity to American households and, eventually, the rest of the world, at the turn of the twentieth century.

Appears on the Equipped: MS Booklist for All



Thomas Edison by Kay Barnham - 621 BAR

This book traces the life of Thomas Edison, from his early childhood and education through his sources of inspiration and challenges faced, early successes, and the many inventions for which he is best known. A timeline at the end of the book summarizes key milestones and achievements of Edison's life.

Non-Print Resources

MLA Citation Poster

https://resources.finalsite.net/images/v1555702011/lwsdorg/edri2k0hrmrmkga7dygn/MLA8-Poster.pdf

Site explains the MLA 8 citation for periodicals

- Time for Kids https://www.timeforkids.com/g34/sections/technology/ Site includes grade-appropriate articles in the areas of technology and science
- TurtleDiary Biographies for Kids https://www.turtlediary.com/biographies.html Site provides digital biographies on different scientists

MAGNOLIA Resources

Explora videos, magazine articles, and encyclopedia entries

AMERICAN REVOLUTIONARY WAR

Social Studies Topic: American Revolutionary War

MAGNOLIA: Lesson Plans and Activities for PK12 Librarians and Classroom Teachers

OVERVIEW

The American Revolution was a political battle that took place between 1765 and 1783 during which colonists in the Thirteen American Colonies rejected the British monarchy and aristocracy, overthrew the authority of Great Britain, and founded the United States of America. The British government attempted to pass laws, enforce several taxes, and increase its control over the colonies. The colonies strongly objected to these laws and taxes. They wanted England to have no control over them. Students will learn about taxation without representation and boycotts in the Colonial days and where battles took place during the American Revolutionary War.

COLLABORATION

- These lessons should be collaboratively planned with the grade level teacher(s) and librarian.
- The activity may take three or four visits to complete or be introduced in the library and completed in the classroom.

PRE-ASSESSMENT

- Use Kahoot or another online quiz game to test the students' knowledge of the American Revolutionary War.
- Ask general questions regarding the key players, dates, locations, and causes.

CURRICULUM CONNECTIONS

MSCCRS Library

RES.PR.2.1 Use various reference resources (e.g., encyclopedia, newspaper, magazine, almanac, atlas, biographical sources, internet source, and dictionary) to find information.

RES.PR.2.5 Identify and use MAGNOLIA, selected Internet sites, or other databases for credible research resources.

RES.CO.4.2 Generate accurate notes to create quotes, paraphrase information, and develop citations to avoid plagiarism when gathering, presenting, or publishing information.

RES.CO.4.3 Follow standard bibliographic formats to use and cite sources.

DIG.CO.1.1-4 Collaboration and Communication Standard

DIG.PR.3.3 Present information and sources using a variety of presentation techniques (e.g., writing, speaking, and media) to communicate new understandings.

MSCCRS English

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.5.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.

RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

R1.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

RI.5.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

W.5.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

W.5.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

MSCCRS English

- W.5.6 With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills.
- W.5.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W.5.8 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.
- W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
- SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

MSCCRS Social Studies

- H.5.4 Explain major events of the American Revolution and their outcomes.
- H.5.5 Chart the causes and events leading to the American Revolution. Cite the reasons for the establishment of early colonies in North America.
- **H.5.7** Describe the impact of significant historical figures and events.
- **G.5.2** Describe the physical features of the environment.
- **G.5.3** Recognize maps, graphs, and other representations of the earth.

MSCCRS Computer Science

- DA.1B.3 Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.
- IC.1B.4 Use public domain or creative commons media and refrain from copying or using material created by others without permission.

INTRODUCTION (Classroom)

Objective

• Students will utilize atlases to locate places regarding the American Revolutionary War.

Duration

• 1 class period

Materials

- Atlas
- Google Maps
- List of events

- 1. Explain the difference between an atlas (map) and a globe.
- 2. Review students on terminology such as map, globe, ocean, continent, latitude, longitude, degrees, hemisphere, poles, equator, prime meridian, and grid.
- 3. Model the different elements on the globe and atlas and explain how to use the atlas index to find different.
- 4. Have students find places where major events of the American Revolution took place.
- 5. Ask students to write the name of the event and the location's latitude and longitude. To extend the lesson, the students can search the name using Google Maps to learn about each location.



LESSON 2 RESEARCH (Library)

Objective

 Students will research how different taxes led to the American Revolutionary War.

Duration

1 class period

Materials

- Citation form
- Computers with Internet access to MAGNOLIA
- Four-square graphic organizer
- Topics

TASKS

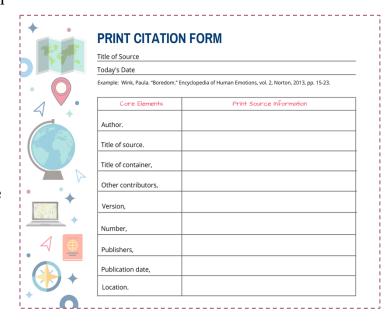
1. Divide the class into small groups and pass out a topic regarding the American Revolutionary War.

2. Model how students will paraphrase information found on their topic and show

the students how to write a citation

for each source.

- 3. Guide students to appropriate articles for research topics using EBSCO limiters to narrow search results by format, Lexile level, or date.
- 4. Have students participate "Give One, Get One" by sharing evidence (gathered from research) with another group member on a different topic. This will further their understanding of a different topic and prepare them for future research.



5. Model how students will complete a four-square graphic organizer based on their notes in which they state the claim and supporting evidence.

LESSON 3 **PRESENTATION** (Classroom)

Objective

• Students will write a five-paragraph summary about the American Revolutionary War supported with evidence from the text.

Duration

• 2 class periods

Materials

- Computers with access to a collaborative writing program
- Four-square graphic organizer
- Writing rubric

TASKS

- 1. Discuss the writing rubric before students beginning to write a five-paragraph summary about their American Revolutionary War topic. Students will use a collaborative writing program to complete the summary as a group.
- 2. Model how students can add comments, suggestions, and questions using the comment feature. Students will finalize their summary using comments from the peer-review session to make corrections and revisions.

POST-ASSESSMENT

- Use the same online guiz game to play Jeopardy with assigned small groups.
- Ask specific questions regarding the key players, dates, locations, and causes that students should have learned about through their research.

RESOURCE PATHFINDER

Print Resources



Anna Strong by Sarah Glenn Marsh - 973 MAR

Anna Smith Strong was a fearless woman who acted as a spy for George Washington during the Revolutionary War. One of her cleverer devices was to hang laundry on the line in a planned fashion so that other spies could read the "message".

Appears on the Equipped: MS Booklist for All



Most Wanted by Sarah Jane Marsh – 973 MAR

John Hancock and Samuel Adams were an unlikely pair of troublemakers. Hancock was young and dashing. Adams was old and stodgy. But working together, they rallied the people of Boston against the unfair policies of Great Britain and inspired American resistance.

Appears on the Equipped: MS Booklist for All

Non-Print Resources

- American Battlefield Trust www.battlefields.org/learn/revolutionary-war Site includes battles, timeline, and facts
- The American Revolution theamerican revolution.org/default.aspx Site includes timelines, documents, and videos
- **PBS Learning Media**

www.pbslearningmedia.org/subjects/social-studies/elementary-social-studies/us-history/americanrevolution/

Site provides videos, lesson plans, and image galleries

MAGNOLIA Resources

Explora videos, magazine articles, and encyclopedia entries

ADOPT A GENRE

Library Skills Topic: Curation

Deskins, Liz. Content-Area Collaborations for Secondary Grades. ALA Editions, 2020.

OVERVIEW

Students need the skills to curate for themselves, skills they will continue to use throughout their lives. The focus for the curation might not always be school resources. But whatever needs classifying, authenticating, verifying, or dating in their lives, these students will be able to tackle the task successfully. These lessons will combine curation, collaboration, and creativity as students in English classes curate displays in the school library. English teachers – and other content areas, if interested – will sign up for a genre and a time slot on the school library calendar, beginning the collaboration between school librarian and classroom teacher. Students will be guided through the steps of curating as they create a display for the school library's physical space and online space.

COLLABORATION

- These lessons should be collaboratively planned with the grade level teacher(s) and librarian.
- The activity should take no more than seven class periods of visits to the library.

ESSENTIAL QUESTIONS

- In what way does curation benefit students?
- Why is curation a life skill?
- How can there be multiple ways to curate a collection?

PRE-ASSESSMENT

Ask students to take a quick survey to evaluate their understanding:

- What is the definition of curation?
- What might be included when curating the planets? Make a list.
- I curate when I

CURRICULUM CONNECTIONS

MSCCRS Library

LIB.IL.1.3 Use the library's automated catalog system to find resources for academic assignments and/or personal growth.

LIB.IL.1.5 Locate books by using Dewey Decimal Classification System or other classification systems such as genre or Library of Congress.

RED.LA.2.1 Distinguish literature (fiction) from informational (non-fiction) text.

RED.LA.2.2 Select books on subjects that are on the student's academic/interest levels and explore particular authors, illustrators, series, genres, and diverse perspectives.

RED.LA.2.11 Encourage other students to read through book reviews and book talks while respecting others' reading choices.

DIG.CO.1.1 Use appropriate language when communicating with others while participating in and advocating for safe and ethical communication.

DIG.CO.1.2 Collaborate with others to exchange ideas, make decisions, and solve problems which will broaden and deepen understanding.

DIG.PR.3.3 Present information and sources using a variety of presentation techniques (e.g., writing, speaking, and media) to communicate new understandings.

MSCCRS English

RL.5.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.

RI.5.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.

RI.5.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

SL.5.1c Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

INTRODUCTION (Library)

Objective

 Students will begin to understand the power and purpose of curation, using observation and discussion.

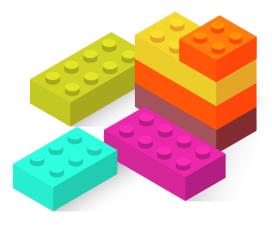
Duration

• 1 class period

Materials

- Boxes of building blocks
- Computers with Internet access to the school library's automated catalog

- 1. Explain to students what curation entails and the topic or genre they will be curating. The explanation should include that a successful curation requires locating all the information available and then evaluating that information using factors such as accuracy, validity, bias, and interests.
- 2. Form small groups and give each group a box of building blocks to challenge them to organize or curate the items in the box.
- 3. When the groups are done, ask each group to discuss their curation or organization and allow them to compare how their curations turned out and what is different about each.
- 4. Explain to students that they will be curating a display for the school library related to the genre topic their classroom teacher selected for the class.
- 5. Ask students to be thinking about the genre topic and possible additions for the curation and be prepared to share their ideas during the next class visit.



CURATE (Classroom)

Objective

• Students will work in small groups to collect resources for the curation project.

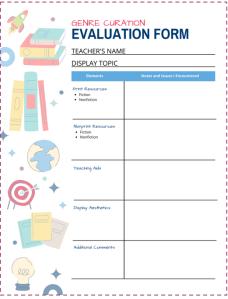
Duration

 3 class periods which include small group trips to the library

Materials

- Computers with Internet access to the school library's automated catalog
- Genre Curation
 Evaluation Form
- Padlet collaboration app

- 1. Have students use Padlet to begin brainstorming ideas about the genre topic with the class and creating a list of items they may want to search for to add to their curation.
- 2. Ask the teacher to decide the best way to divide the work and assign students to small groups. Allow students to sign up for groups in charge of different pieces of the curated displays, as in the following examples:
 - a. Book finders students that will find fiction and nonfiction books
 - Researchers students will use databases
 (MAGNOLIA) and the Internet to find journal articles and websites
 - c. Designers students who work on the displays
- 3. Explain that the small group will visit the school library as needed to work on the project. The school librarian may offer open library time for small groups to have individual guidance in using the school library tools during their search.
- 4. Schedule a class period for students to visit the library, set up their genre display and formally present the curated display to the school librarian, explaining how each item was chosen and how it fits into the curation.
- 5. Complete the Genre Curation Evaluation Form to be shared with the students and classroom teacher.



LESSON 3 **DIGITAL PRESENTATION** (Library)

Objective

• Students will create multimedia displays, ethically using other's works.

Duration

• 2 class periods

Materials

- Computer with Internet access
- Video-recording device

- 1. Explain to students that the critical piece in the curation process is sharing the resources.
- 2. Inform students that they will create a digital version of their physical display to be accessible for everyone.
- 3. Explain to students that the digital collection will be posted on both the school's learning management system and the school library's website.
- 4. Have the students develop a plan for promoting the digital curation.
- 5. Facilitate and support students in creating and recording a short video showcasing all the materials curated in the genre topic display.

LESSON 4 SHARING (Library)

Objective

• Students will use data collected to analyze the usefulness of the curation and display.

Duration

• 1 class period

Materials

- Collected data
- Computer with Internet access

TASKS

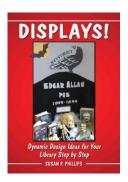
- 1. After one month of promotion, download the circulation data and retrieve database usage for the materials featured in the curated genre topic display.
- 2. Remove any personal information from the collected data before sharing it with the classroom teacher and students.
- 3. Allow students to analyze the data. With the classroom teacher, lead a discussion with students about how they could revise their curation, display, or promotion to generate more interest and higher circulation.

POST-ASSESSMENT

Students will write a brief essay reflecting on the genre topic curation project. They should reflect on their role in the curation process, the overall project, the challenges of finding materials, the usefulness of having access to curations like the one they created, and how the curation skills developed in this unit will benefit them in future projects.

RESOURCE PATHFINDER

Print Resources



Displays! by Susan Phillips - PF

This volume offers ideas on a wide range of subjects, including women of note, news-worthy events, Mother Nature, great moments in time, prominent figures in history, global cultures, and more. Each display topic includes a comprehensive background discussion and detailed assembly instructions, an explanation of the genesis of the idea, and suggestions on ways to adapt these designs to fit into larger spaces.



Ready-made Book Displays by Nancy Henkel - PF

Providing more than 50 fiction display descriptions, this book identifies themes for the entire year and includes titles for signage, annotated booklists, prop and material ideas, as well as photographs that show how to pull it all together.

Non-Print Resources

- **Curation in School Libraries American Library Association** https://journals.ala.org/index.php/ltr/article/view/4791/5737 Site includes various school librarians talk about the importance of curation to a school's learning culture
- **Teaching Student Curation** https://vimeo.com/241749350 Video explains tools and processes for teaching student curation
- To Boost Higher-Order Thinking, Try Curation https://www.cultofpedagogy.com/curation/ Article explains how teaching students to curate can boost higher-order thinking skills

MAGNOLIA Resources

Moorefield-Lang, Heather. "Digital Communication 'for' Curation with Your Collection." Knowledge Quest, vol. 48, no. 2, Jan. 2019, pp. 30-33. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EI1233106&site=ehostlive&scope=site.

BOBBING BOATS: FLOATING AND SINKING

Science Topic: Density and Volume

Rinio, D. STEAM Activities in 30 Minutes for Elementary Learners. ALA Editions, 2020.

OVERVIEW

Students will explore why things float or sink by building boats. After a demonstration, students will apply the principles of air volume and density to build self-righting boats using the available materials. After students explore buoyancy in these introductory activities in the school library, the classroom educator can build on the lesson by introducing measurement. Students can measure the density of various objects by calculating the air volume and the weight to determine which objects are most likely to float and which will sink.

COLLABORATION

- These lessons should be collaboratively planned with the grade-level teacher(s), librarian, and art teacher.
- The activities can be split into more days if necessary. It should take no longer than four days to complete the lessons.

ESSENTIAL QUESTIONS

- What is density?
- What is the relationship between density and whether something floats or sinks?

SCIENCE BACKGROUND FOR EDUCATORS

Whether or not something floats is a matter nor of its weight but its density. Density can be calculated as mass divided by volume. The density of water is 1 gram per cubic centimeter. Things with a lower density than water will float in water, and things with a higher density will sink.

When something is floating in water, it displaces water. The water that is being displaced pushes back with an upward force. This force is called buoyancy. Archimedes (287-212 BC) discovered that an object would displace the same amount of water as the object's volume. For example, if the



volume of stone is 3 grams, it will displace 3 grams of water. Items that float also displace water, but they will displace only an amount equal to the portion of the object that is under the water. For example, a ball floating in water displaces only a small amount of water, not the entire volume of the ball. Archimedes also realized that the water pushes back against a floating or sinking object. The object will sink until its weight is equaled by the upward force of the water.

CURRICULUM CONNECTIONS

MSCCRS Library

RED.LA.2.5 Demonstrate reading for meaning by finding the main purpose and supporting details while evaluating evidence, drawing conclusions, and/or forming opinions.

RED.LA.2.10 Apply reading strategies across the content areas.

RES.ID.1.1 Follow an inquiry-based process to seek knowledge on a topic for personal interests or for a learning goal.

RES.ID.1.2 Apply prior knowledge to new learning and continue to ask "I Wonder" questions to the new information.

DIG.CO.1.1-4 Collaboration and Communication Standard

MSCCRS Science

P.5.5A Students will demonstrate an understanding of the physical properties of matter.

P.5.5B Students will demonstrate an understanding of mixtures and solutions.

MSCCRS Visual Arts

VA: Cn10.1.5 Synthesize and relate knowledge and personal experiences to make art.

MSCCRS Computer Science

DA.1B.1 Organize and present collected data visually to highlight relationships and support a claim.

DA.1B.2 Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.

DA.1B.3 Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.

MSCCRS Math

5.MD.1 Convert like measurement units within a given measurement system

5.MD.2 Represent and interpret data

DA.1B.3-4 Geometric measurement: understand concepts of volume and relate volume to multiplication and to additional

LESSON 1 INTRODUCTION (Classroom)

Objective

• Students will apply the principles of air volume and density to build self-righting boats using available materials.

Duration

3 class periods

Materials

- Aluminum foil
- Flat lids (large and small)
- Miscellaneous items to add weight to the boat (e.g., rice, putty, etc.)
- Oranges (2 per class)
- Tub with water

TASKS - Day 1

- 1. Fill a bowl with water. Ask all students to predict what will happen when you put an orange in the bowl of water.
- 2. Place the orange in the bowl and ask students to observe what happens. Retrieve the orange and peel it.
- 3. Ask students what they think will happen when you put the peeled orange in the water. Then place the peeled orange in the water.
- 4. Ask students if they can guess why the unpeeled orange floated and the peeled orange did not.
- 5. Explain that the skin of the orange has air in it. This air helps keep the orange afloat in the water. When the skin is removed, the air pockets are removed, and now the orange will sink. The peel is like a life jacket for the orange.
- 6. Introduce the word *density*. Explain that whether an object sinks or floats depends on its density. If the object is denser than the water, it will sink; if it is less dense, it will float. An unpeeled is less dense than water, so it floats. A peeled is denser than water, so it does not float.
- 7. Show students a tub of water, two flat lids, and some weights. Place the small lid on the water and stack the weights on it until it sinks.
- 8. Ask students to predict whether the large lid will sink with less, more, or the same amount of weight. Ask students to justify their predictions.
- 9. Put the same amount of weight on the large lid. Explain that the greater surface area of the large lid allows it to hold more weight and still float. This feature is called *surface* tension and plays a role in why things float or sink.

- 10. Explain to students that another thing that influences whether something floats or sinks is the amount of air it contains. The amount of air in an object affects its density, and density affects whether something floats or sinks. Objects with a greater density than water will sink in water, and objects with a lower density will float.
- 11. Demonstrate by crushing a piece of foil into a loose ball. Place the foil ball in the water; it should float. Then tighten the ball and return it to the water; it should sink.
- 12. Explain that both objects have the same amount of foil and the same weight, but the looser ball is less dense because it has more air.

TASKS - Day 2

- 1. Form groups of students and challenge them to use the materials (e.g., cardboard, plastic food trays, etc.) to design a boat that will hold the greatest amount of weight before sinking.
- 2. Each group will use the tub of water to test their boats when they are ready.
- 3. Ask students to see which boat can hold the most weight.
- 4. As students are designing, ask them questions about their choices, such as, "What do you think will happen if you...?" and "Why did you choose to...?"
- 5. Encourage students to remember the demonstrations at the beginning of the activity.

TASKS - Day 3

- 1. Ask students to compare their results. Did all groups get similar results? Discuss why or why not. Discuss which boat performed best and why.
- 2. Ask students what they would do differently next time to build a better boat. What did they learn from each other's designs?

ASSESSMENT

Do students' boat design choices reflect an understanding of surface tension?

TECHNOLOGY INTEGRATION (Library)

Objective

• Students will collect data in a spreadsheet about the materials used to fill their plastic bottles to explore volume and density.

Duration

• 1 class period

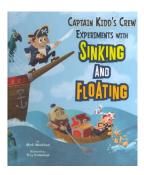
Materials

- Plastic bottles (1 per group)
- Rice
- Scale
- Spreadsheet
- Tub with water

- 1. Create a new spreadsheet, label cells A1 to E1 "Material Added (g)," Volume (ml)," "Density," "Float or sink," and "Water = 1g/mL."
- 2. Demonstrate how to measure the volume of rice in the cylinder.
- 3. Demonstrate how to measure the weight of rice in the bottle (measure the bottle while empty, measure the bottle with rice, then subtract the two values).
- 4. Show learners how to enter the equation for Density (density = mass/volume) in column D by typing "=B1/C1" in cell D1 and then copying the equation to the rest of the column D. Add a "1" to cell E1 and Copy down the rest of column E.
- 5. Guide learners to compare the density of their bottle (column D) with the density of water (column E) to guess whether it will float or sink before testing it in the tub of water.

RESOURCE PATHFINDER

Print Resources



Captain Kidd's Crew Experiment with Sinking and Floating by Mark Weakland - 532 WEA

Captain Kidd and his crew explain why things float and why some sink, including explanations of terms like gravity, buoyancy, and density. Ave, ave, matey! Captain Kidd here, and I'm on an adventure on the high seas. I've always wondered why my boat floats but me treasure sinks. Follow my crew to find out all about sinking and floating!



Things that Float and Things that Don't by David A. Adler - 532 ADL

It can be surprising which objects float and which don't. An apple floats, but a ball of aluminum foil does not. If that same ball of foil is shaped into a boat, it floats! Why? And how is it possible that a huge ship made of steel can float? Answering these questions about density and flotation is David A. Adler's clear, concise text, paired with Anna Raff's delightful illustrations. Activities that demonstrate the properties of flotation are included.

Non-Print Resources

- ActiveWild www.activewild.com/density-for-kids/ Site provides facts, definitions, and external links to scientific articles
- **Cool Science Experiments Headquarters** coolscienceexperimentshg.com/simple-experiments-to-learn-about-density/ Site includes eight simple density science experiments, including the orange trick
- Science Buddies www.sciencebuddies.org/ Site includes activities, lesson plans, and videos

MAGNOLIA Resources

- **Explora** videos, magazine articles, and encyclopedia entries
- **Great Websites for Kids** science games and websites
- **PhET Interactive Simulations** a large collection of simulations and activities