Exploration and Communication: A Researcher's Journey

Fourth Grade Research Unit

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Background

Exploration and Communication is a curriculum unit designed to help students explore a variety of non-fiction texts and expand their skills in research, writing, and reading comprehension strategies. Through this unit, students will develop a sense of themselves as researchers as they focus on the dual concepts of exploration and communication in research.

Using the metaphor of researcher as explorer, students will learn how to channel their interest in an area, person, or topic into a worthwhile research project. Students will set out on a "knowledge expedition" by framing initial research questions and searching, organizing, and evaluating information from different kinds of texts. Students will explore how multiple perspectives can be brought to a topic and examine how perspective shapes the way we interpret and share information. Using the concept of researcher as communicator, students will learn how to share their findings with a specified audience in clear and meaningful ways, including writing and speaking.

To structure their research, students will learn and use the Big6™ research process. Developed by Michael B. Eisenberg and Robert E. Berkowitz, the Big6™ is an information problem-solving model that enables students to search for information and use skills systematically to find, use, apply, and evaluate information in texts for specific tasks. For more on Big6, visit: www.big6.com.

The activities and assessment products included in this unit are designed to help students develop essential research skills that can be applied across a range of disciplines. Students will have the opportunity to work with sources and ideas that suit their individual interests and need for challenge. Students should walk away with an understanding that research is an organized and systematic way of finding answers to important questions. By the end of the unit, each student will have designed and conducted a complete research project, which will be shared with an audience of students, parents, and teachers at a classroom "Research Gala."

Objectives/ Standards

This unit is designed to be consistent with common state fourth and fifth-grade reading and writing standards, and national standards outlined by the National Council of Teachers of English (NCTE) and the International Literacy Association (ILA). This unit addresses the following objectives:

NCTE/ILA National Standards:

1. Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the work place; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
2. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts; they draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their work identification strategies, and their understanding of textual features.
3. Students conduct research on issues and interests by generating ideas and questions and by posing problems. They gather, evaluate and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.
4. Students use a variety of technological and information resources to gather and synthesize information and to create and communicate knowledge.

Students will know the following:

- *Research* is a detailed study of a subject, especially aimed at discovering (new) information or reaching (a new) understanding.
- A *source* is something such as a person or document that supplies information.
- An *expedition* is a journey undertaken by a group of people with a definite objective.
- *Plagiarism* is using others' ideas and words without clearly acknowledging the source of that information.
- *Synthesis* is the combining of separate elements to form a whole.
- *Paraphrase* is a restatement of a text or passage giving the meaning in another form as for clearness; rewording.

Students will understand the following BIG IDEAS about reading and research:

- Exploration is a metaphor for understanding that research is an organized and systematic way of finding answers to questions
- Research is an organized and systematic way of finding answers to questions
- Readers can use strategies and structure to make meaning from texts
- Purposes and perspectives influence how readers and writers (explorers) interact with texts
- Values, experiences, and motivation contribute to the development of an explorer's (reader's) perspective and purpose
- The contributions of an explorer's journey can be analyzed from various perspectives

Students will develop and demonstrate the following skills:

Reading

- Apply self-monitoring strategies when reading
- Evaluate the effectiveness of a text for a particular purpose
- Compare and contrast similar text features in different sources
- Read a passage and paraphrase what was read (note-taking system)
- Access prior knowledge when reading
- Sort and classify texts by genre
- Determine text features
- Identify and compare text features in Internet sources and textbooks
- Determine multiple purposes for section headings in expository texts

Research and Writing

Designing Research Studies

- Clearly define a task
- Formulate research questions and hypotheses
- Examine multiple perspectives on a topic
- Determine incremental benchmarks to reach a goal

Locating and Evaluating Sources

- Identify appropriate resources to answer a research question
- Use particular strategies to locate sources
- Access a variety of sources
- Determine the accuracy and reliability of online sources
- Critically evaluate the quality of a source

Communicating Research Findings

- Cite evidence in support of opinions
- Synthesize multiple sources of information for communication
- Present a synthesis of various sources
- Present original research to an audience
- Determine a set of criteria on which to judge quality research
- Determine effective methods to communicate research findings
- Define plagiarism and describe its consequences
- Evaluate the work of peers using established criteria

Unit Outline

Lesson	Big Idea/s	Overview	Skills
▪ Unit Pre-Assessment			
1	▪ Exploration is a metaphor for understanding that research is an organized and systematic way of finding answers to	*Who are Explorers?* ▪ Consensus building activity ▪ Anticipation guide for introducing unit content	▪ Cite evidence in support of opinions ▪ Examine multiple perspectives

	questions.	▪ "Who Am I – An Exploration"	
▪ Formative Assessment 1			
2	▪ Research is an organized and systematic way of finding answers to questions.	*Concept Exploration* ▪ Students explore multiple concepts related to the unit and consider the relationships between concepts ▪ Students begin thinking about researchable questions ▪ Students are introduced to the knowledge expedition	▪ Synthesize knowledge for communication ▪ Compare and contrast various concepts ▪ Formulate hypotheses
3	▪ Purposes and perspectives influence how readers and writers ("explorers") interact with texts. ▪ Readers can use strategies and structure to make meaning from texts. ▪ Research is an organized and systematic way of finding answers to questions.	*Fiction and Nonfiction—What's the Difference?* ▪ Students examine and analyze the features of nonfiction texts ▪ Students are introduced to the Big6	▪ Sort and classify texts by genre ▪ Determine text features
▪ Formative Assessment 2			
4	▪ Research is an organized and systematic way of finding answers to questions. ▪ Values, experiences, and motivation contribute to the development of an explorer's (reader's) perspective and purpose.	*What Do I Know and Where Do I Go?* ▪ Students examine research topics and explore information seeking strategies ▪ KWL	▪ Access prior knowledge through discussion ▪ Compile a list of research sources
▪ Formative Assessment 3			
5	▪ Readers can use strategies and structures to make meaning from texts. ▪ Research is an organized and	*Texts on the Internet: Friend or Foe?* ▪ Students further consider information seeking strategies	▪ Identify and compare text features within textbooks and Web page formats ▪ Use an organizational system to locate

	systematic way of finding answers to questions.	▪ Students compare/contrast texts ▪ Students conduct independent web investigation	information ▪ Determine the accuracy and reliability of online sources ▪ Identify appropriate resources to answer research question
6	▪ Research is an organized and systematic way of finding answers to questions. ▪ Purpose and perspectives influence how readers and writers interact with text.	*How to Create a Research Question* ▪ Students use an organizational system to focus on topics ▪ Students distinguish between thick and thin questions ▪ Students develop research questions	▪ Use an organizational system to focus on the specifics of a topic ▪ Determine the difference between thick and thin questions ▪ Identify appropriate purposes in reading texts for information
7	▪ Readers can use strategies and structure to make meaning from texts. ▪ Research is an organized and systematic way of finding answers to questions.	*Exploring Texts—Metacognition and Marking* ▪ Students learn strategies for taking notes and monitoring reading comprehension using nonfiction texts	▪ Monitor comprehension (metacognition) ▪ Work cooperatively and independently to apply INSERT strategy ▪ Locate and access various library materials
8	▪ Research is an organized and systematic way of finding answers.	*A Return Expedition: Working as Researchers* ▪ Students locate and evaluate nonfiction texts in the library	▪ Locate and access various library materials
9	▪ Research is an organized and systematic way of finding answers to questions.	*Working as Researchers—Exploring Texts and Organizing Ideas* ▪ Students are introduced to the concept of plagiarism and discuss and evaluate scenarios involving plagiarism ▪ Students learn to paraphrase passages using a note-taking	▪ Define plagiarism and describe its consequences ▪ Collect and analyze information relevant to the topic/question ▪ Read a passage and paraphrase what was read (note-taking system)

		system	
▪ Formative Assessment 4			
10	▪ Research is an organized and systematic way of finding answers to questions.	*Working as Researchers—Re-exploring Texts and Reorganizing Ideas* ▪ Students evaluate their progress as researchers and engage in independent research	▪ Locate and access various library materials ▪ Identify an area for improvement
11	▪ Research is an organized and systematic way of finding answers to questions.	*Researchers as Project Designers* ▪ Students consider different presentation options and design their independent research projects	▪ Determine effective methods to communicate research findings ▪ Determine incremental benchmarks to reach a goal
12	▪ Research is an organized and systematic way of finding answers to questions.	*Researcher as Presenter* ▪ Students collaborate to determine a list of characteristics of and criteria for effective presentations	▪ Determine a set of criteria on which to judge quality research ▪ Conduct independent research
13 &14	▪ Research is an organized and systematic way of finding answers to questions.	*Preparation for Gala* • Students finalize their projects and prepare for the Research Gala. *Preparation for Gala: The Dress Rehearsal* ▪ Students participate in a dress rehearsal for the Research Gala	▪ Synthesize multiple sources of information ▪ Present a synthesis of various sources
15	▪ The contributions of an explorer's journey can be analyzed from various perspectives. ▪ Research is an organized and systematic way of finding answers to questions.	*Research Gala* ▪ Students present their research projects to peers, parents, and other visitors at a Research Gala	▪ Present original research to an audience

16	▪ Research is an organized and systematic way of finding answers to questions.	*Final Performance Task: Research Gala*	
Lesson 16: *Performance Task* (Summative Assessment)			

Preparing to Teach the Unit

Resources and Materials
The texts used to model reading strategies came from a public domain database called Project Gutenberg (https://gutenberg.org).

Suggested supplemental reading for the teacher before starting the unit:

- Handbooks of best practice reading strategies:

  http://www.dr-hatfield.com/EDUC536/docs/readingstrategiestoguidelearning.pdf

  https://www.tie.net/wp-content/uploads/2020/12/6MoreStrategiestoGuideLearningBookletReduced.pdf

Extra resources concerning the teacher's exploration into "Who Really Discovered America?" are listed below. Some possible discoverers of America include: Hoei-Shin, Saint Brendan the Bold, Bjarni Herjólfsson, Prince Madoc of Wales, Leif Eriksson, Christopher Columbus, and Chief Howling Wind of the Cree Nation.

- Exploration of North America: http://www.history.com/topics/exploration/exploration-of-north-america
- Saint Brendan: https://blogs.loc.gov/maps/2021/04/searching-for-saint-brendans-island/
- Hoei-Shin: http://history.howstuffworks.com/history-vs-myth/chinese-beat-columbus.htm
- Bjarni Herjulfsson: https://www.britannica.com/biography/Bjarni-Herjulfsson
- Prince Madoc of Wales: https://www.cnn.com/2019/07/20/uk/welsh-americas-history-intl-hnk/index.html
- Leif Eriksson: http://www.history.com/topics/exploration/leif-eriksson or http://www.biography.com/people/leif-eriksson-9378184

- Christopher Columbus: http://www.biography.com/people/christopher-columbus-9254209 or http://www.history.com/topics/exploration/christopher-columbus

Big6™

The unit delves into the Big6™ research method and requires students to think and act like real researchers. The unit uses a number of Big6™ resources to support the research process including the Big6™ Research Handbook, the Big6™ Research Process Poster, the Big6™ Instructions for Teachers, and the Big6™ Unit/Product Evaluation Form.[1]

Many additional resources concerning Big6™ can be found online. Please consult the following websites below for more information on this process. A simple search on a search engine like Google will yield multiple resources.

- http://www.big6.com
- http://www.crlsresearchguide.org/Big_Six_Steps.asp

[1]The "Big6™" is copyright © (1987) Michael B. Eisenberg and Robert E. Berkowitz. For more on Big6, visit: www.big6.com

Classroom Environment

The teacher is encouraged to set up a classroom environment that is conducive to individual exploration and independent work. Establishing a daily routine and a consistent classroom physical environment is imperative. Here are some practical tips to help you execute a successful unit:

- Establish "homes" for all kinds of materials—journals, dictionaries, personal library books, etc.
- The teacher in this unit (you!) is exploring a question as well (e.g., Who really discovered America?). Prior to the start of the unit, ask the librarian in your school to compile resources pertaining to your chosen topic that you can keep on a cart in your classroom.
- Establish a "home base" where students will do independent work, probably their desks. When you say "go to home base," all students should know where to go and that the activity is a quiet/independent one.

Classroom Management

In order for students to be "exploring" material that is on their reading level and of interest to them, teachers must be flexible. Students will be working with texts that are of interest and appropriate readability for them. This will require the teacher to wear multiple hats and be attuned to the particular needs of each student.

Each student will need to have a research portfolio. If possible provide a 3-ring binder with tabs for each child. All work pertaining to the research investigation will be kept in this binder (or "research portfolio") in a marked area in the classroom. Students should rarely, if ever, take their binders home. You will need to routinely check these to monitor each student's progress.

Ongoing Assessment

The unit pre-assessment is administered to students prior to the first lesson. The purpose of the pre-assessment is (1) to assess what students already know about the purpose and structure of nonfiction texts as well as effective research strategies, which will help tailor the activities and group students appropriately, and (2) to provide a baseline for comparison at the end of the unit so that the teacher can assess the growth of each student throughout the course of the unit. A computer- and library-use pre-assessment is also included to help teachers see which students may need scaffolding in these areas.

The CLEAR Curriculum Model

This unit has been designed using the CLEAR Curriculum Model. **The CLEAR** (**C**hallenge **L**eading to **E**ngagement, **A**chievement and **R**esults) **Curriculum** incorporates elements from three research-based curriculum models: Differentiation,

Depth and Complexity, and The Schoolwide Enrichment Model by Carol Tomlinson, Sandra Kaplan, and Joseph Renzulli, respectively.

These elements are applied to a curriculum framework that is consistent with state and national standards in reading but builds layers of challenge and opportunities for more in-depth study authentic to the work of professionals within a discipline to better meet the needs of all students.

Differentiation is applied to design various learning opportunities for students who differ in their readiness levels (what they know, understand, and can do in relation to the content), interests, and learning profiles. Principles of differentiation, such as ongoing assessment, appropriate challenge, and flexible grouping, are applied throughout the units.

Depth and Complexity is used to build layers of challenge and meaning onto standards-based learning opportunities. Elements of depth (big ideas, language of the discipline, details, patterns, and rules) and complexity (multiple perspectives, interdisciplinary connections, unanswered questions, ethical issues, and changes over time) are used to help students explore the content.

The Schoolwide Enrichment Model emphasizes opportunities for students to work with the tools and methods of practicing professionals in a field, and for students to engage in long-term, real-world projects in an area of interest. These elements are also incorporated into the curriculum units.

Units within the CLEAR Curriculum are designed around five foundational elements:

- **C**ontinual Formative Assessment
- Clear **L**earning Goals
- Data-Driven Learning **E**xperiences
- **A**uthentic Products
- **R**ich Curriculum

Each of these elements is considered crucial for encouraging engagement, achievement, and growth in a variety of gifted learners.

<u>**C**ontinual Formative Assessment:</u> CLEAR Curriculum unit activities are informed by and adjusted according to ongoing, formative assessment of students. Assessment data is collected and utilized not only to evaluate student growth, but to provide a profile of student readiness levels, needs, interests, and preferred ways of learning and expressing their learning. Assessment is regarded as an important tool for allowing teachers to get to know students and tailor further instruction to meet their unique needs.

<u>Clear **L**earning Goals:</u> CLEAR Curriculum units are designed around learning goals that are meaningful, important, and clear. These learning goals reflect state and national

standards, but also reflect the key knowledge, skills, and understandings central to the area of study.

Data-Driven Learning **E**xperiences: Underlying the CLEAR Curriculum are the assumptions that learners (1) vary in their readiness levels, interests, and learning profiles and (2) learn best and most efficiently when their varied needs are met. As such, learning experiences within CLEAR Curriculum units are differentiated to meet the needs of a variety of learners, including the gifted. Continual collection of data through formative assessments allows teachers to assign students to learning experiences appropriate for their needs.

Authentic Products: Also underlying the CLEAR Curriculum is the assumption that learning is made most meaningful when students (1) develop the skills and knowledge needed by professionals in the field of study and (2) apply the knowledge and skills they have acquired in real-world and relevant contexts. CLEAR Curriculum units guide students in developing and carrying out projects on topics of their own choosing using the methods and tools of experts in the field.

Rich Curriculum: The CLEAR Curriculum is designed to take students beyond mere factual, rote knowledge to deep understandings of the essential knowledge, skills, and big ideas of a unit of study. High-level challenge is built into the units through having students utilize the vocabulary and language of the discipline; investigate the patterns, rules, varied perspectives, unanswered questions, and ethical issues within a unit of study; make connections across disciplines; and understand how unit concepts and ideas have changed over time.

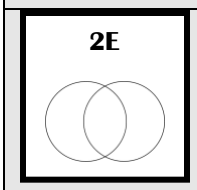
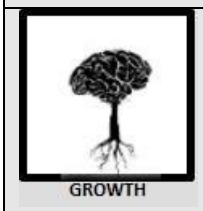
Icons Explained

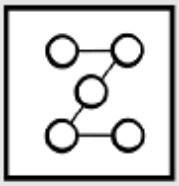
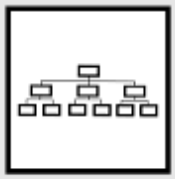
Integrated throughout the lesson plans are a series of icons or symbols intended to draw your attention to the particular content focus, learning objective, or instructional configuration of each learning activity. Some of these icons are derived from Sandra Kaplan's Depth and Complexity curriculum model, while others have been developed specifically for the CLEAR curriculum model used in these units.

	**Tip** This symbol is used to indicate an important note for the teacher. The tip might refer to something to watch out for, such as a potential classroom management issue or a particular type of talent potential, during a learning activity.
LESSON ORGANIZATION	

	**Whole-class Instruction.** The teacher leads an activity with the entire class together.
	**Small Group Work** Students engage in a learning task in pairs or small groups of 3-5.
	**Independent Work** Students work on their own in identifying a topic of study, conducting research, and writing or using other modes of expression to present information or demonstrate understanding.
	**Anchor Activity** As students work at different paces, there will be times when some students finish a task sooner than others. An anchor activity is a task on which students work (usually independently) after they complete other class work. An anchor activity is meaningfully related to the learning objectives of the lesson or unit, allowing students to explore essential ideas, rather than simply a time-filler. All students will have a chance to work on anchor activities over the course of a unit.
LITERACY FOCUS	
	**Word Study** Students are engaged in learning and practicing how to decode words by breaking them down into their component parts such as sounds, syllables, roots, prefixes, and suffixes. Each student works with words that match his or her own readiness level.
	**Reading Comprehension** Students are reading for the purpose of understanding and practicing comprehension strategies.

	**Writing** Students are engaged in one or more stages of the writing process.
	**Place** Students are engaged in tasks that are related to their lived experiences, often by making connections between the class material and their community.
	**Critical Literacy** Students are encouraged to read thoughtfully in order to better understand the dynamics of human relationships (like power, inequality, and injustice).
FOCUS ON STUDENT DIFFERENCES	
	**Differentiation by Readiness** Readiness-based differentiation is the process of adjusting learning experiences to match individual students' levels of past achievement and point of development. Readiness refers to what students already know, understand, and can do related to the learning objectives for a particular task, lesson, or unit. A student's level of readiness might vary depending on his or her background knowledge, prior learning experiences, and profile of competencies related to different topics or kinds of activities. When learning tasks are matched to a student's level of readiness (i.e., within the student's zone of proximal development), that student has the opportunity to work at something that is both challenging and rewarding. When a task is too challenging or not challenging enough for a student, learning is unlikely to occur. Thus, it is essential that general lesson plans be adjusted to better attend to differing levels of readiness among the group of students. Students might work in readiness groups or independently on tasks that are differentiated by readiness.
	**Differentiation by Interest** Interest-based differentiation refers to the process of adjusting learning experiences to match individual students' interests. When students have the opportunity to work in an area of personal interest to them, they are more likely to become motivated to learn and therefore actively engaged in the learning process. Teachers can attend to students' interests by offering a choice of several materials or topics, by inviting students to suggest their own topics for study, or by allowing students to sometimes

	work in interest-based groups.
	**Differentiation by Learning Profile** Learning-profile-based differentiation is the process of adjusting learning experiences to match individual students' pattern of strengths, weaknesses, and preferences that determines how he or she takes in, makes sense of, and expresses information. Learning profile is shaped by factors, such as culture, gender, and learning style preferences. Teachers can provide opportunities for students to work in ways that match their learning profile preferences by incorporating multiple modes of expression and ways of working into the life of the classroom.
	**Twice Exceptional** Twice-exceptional students are intellectually gifted children who have a disability. It is important to cultivate their intellectual abilities while still acknowledging that they may struggle in certain areas of the classroom and providing them with the necessary support to succeed.
	**Growth Mindset** Mindset is about how students think—if they have a fixed mindset, they believe their intelligence and talents are fixed abilities that cannot be changed. Students with a growth mindset believe their intelligence and talents can be developed. Teachers can encourage a growth mindset by incorporating activities that encourage students to persist through challenges and allow them to learn from mistakes.
DISCIPLINE EXPLORATION	
	**Big Idea** A big idea refers to an essential understanding about a topic or discipline that students should take away from the lesson or unit. It often helps to "unpack" or explain an important concept or the relationship between two or more concepts. Big ideas help students move beyond the facts and skills they are learning to focus on what is fundamentally important, enduring, and transferable about the topic. For example, in the poetry unit, students explore the big idea that *poetry helps readers see the extraordinary in the ordinary.* This is a big idea that guides the work of contemporary poets as they use concrete, sensory language and specific imagery to add layers of meaning to the description of everyday objects, events, and experiences. The big idea can be explored across different poems, poets, and periods of history. In this way, the big idea is a focal point that holds the unit together; students are gradually guided, through a range of learning activities, to arrive at a deep understanding of the big idea. The term big idea is sometimes used synonymously with principle, generalization, or understanding.

 LANGUAGE	**Language of the Discipline** The task helps students achieve greater depth of understanding by coming to know and apply the vocabulary of professionals in the academic discipline.
 TOOLS	**Tools of the Discipline** The task helps students achieve greater depth of understanding by coming to know and apply the ways of thinking and working of professionals in the academic discipline.
 REAL WORLD	**Real World Application** The task requires students to apply the language and tools of the discipline in an environment or activity similar to what an expert in the field would experience.
SUBJECT ANALYSIS	
 DETAILS	**Details** The task helps students achieve greater depth of understanding by studying the essential details relevant to what they are learning.
 PATTERNS	**Patterns** The task helps students achieve greater depth of understanding by analyzing the patterns and trends that can be identified in what they are learning.
 RULES	**Rules** The task helps students achieve greater depth of understanding by coming to know and apply the principles and rules that govern what they are learning.
 PERSPECTIVES	**Perspectives** The task helps students achieve a more complex level of understanding by encouraging them to understand the material from multiple perspectives.

 OVER TIME	**Over Time** The task helps students achieve a more complex level of understanding by guiding them to consider what they are learning from a historical perspective.
 QUESTIONS	**Unanswered Questions** The task helps students achieve a more complex level of understanding by allowing them to explore unanswered questions about the content they are learning.
 ETHICS	**Ethics** The task helps students achieve a more complex level of understanding by guiding them to explore ethical issues related to what they are learning.