Inventions Unit
3rd Grade Enrichment Study Group

Title of Unit or Topic	Inventions	
Content Area	Science/Social Studies/ELA	**Grade Level:** 3
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NC State Standards

Science Power Standards:

- 3.P.1 Understand motion and factors that affect motion.
- 3.P.2 Understand the structure and properties of matter before and after they undergo a change.
- 3.P.3 Recognize how energy can be transferred from one object to another.

Social Studies Power Standards:

- 3.H.2 Use historical thinking to understand the context of events, people, and places.
- 4.C.1 Understand the impact of various cultural groups on North Carolina (will be expanded beyond just NC)

English Language Arts:

- L.3.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L.3.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L.3.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- RF.3.4 Read with sufficient accuracy and fluency to support comprehension.
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure in a text, using language that pertains to time, sequence, and cause/effect.
- RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- RI.3.5 Use text features and search tools to locate information relevant to a given topic.
- RI.3.6 Distinguish own point of view from that of the author of the text.
- W.3.2 Write informative/explanatory text to examine a topic and convey ideas and information clearly.
- W.3.4 With guidance, produce writing in which the development and organization are appropriate to task and purpose.
- W.3.6 With guidance, use technology to produce and publish writing as well as to interact and collaborate with others.
- W.3.7 Conduct short research projects that build understanding about a topic.
- W.3.8 Recall information from experiences or gather information from print and digital sources, take brief notes on sources and sort evidence into provided categories.
- SL.3.1 Engage effectively in a range of collaborative discussions.

ACS Instructional Framework Connections

Engage Students in Relevant and Rigorous Learning
Provide a Student Centered Learning Environment
Implement Digital Learning
Ensure Instructional Innovation

Know	Understand (that)	Do
Students will know the characteristics of an inventor. Students will know the reasons inventors choose to invent. Students will know the history of several key inventions. Students will know how to conduct research, take notes, create a diagram, and build a prototype of an invention.	Students will understand that inventions involve science, social studies, math, and language arts skills. Students will understand how inventions change a society. Students will understand how to utilize both creative and critical thinking in the develop of an invention.	Students will develop their own definition of inventor. Students will read non-fiction text, utilizing both text and verbal features, in order to learn the history of some important inventions and inventors. Students will create a timeline highlighting inventions they judge to be most important in history. Students will conduct research on an invention they choose. Students will develop an invention flyer to share what they learned. Students will learn to make a detailed diagram and will create a fairy tale invention diagram explaining how an invention they design helps a fairy tale character with a problem they face. Students will learn about Rube Goldberg by exploring his biography and inventions. Students will design and build a simple Rube Goldberg design. Students will design and build their own inventions and will document the process through a journal.

Essential Questions
● What characteristics to inventors possess? ● How do inventors change the world? ● Why is it important to learn about historical contributions to society?

Assessments - Evidence of Student Learning

Pre-assessment:

- Students will fill in a concept map sharing what they already think they know about inventors and inventions.

Mid-Way Assessment:

- Students will complete an Invention Research Project.

Post-assessment:

- Students will show mastery of their understanding by designing and developing their own inventions.
- Students will complete an invention journal that reflects the process of their invention development.

I, We, You

This unit is a combination of direct instruction, independent student work and collaborative student work with the teacher facilitating. Students will have the opportunity to develop creative and critical thinking as well as collaboration and organizational skills. They will deepen their abilities in time management and meeting requirements. They will use multiple forms of technology to create products that share their understanding and creative thinking.

List of Instructional Activities and Experiences (Lessons)

Day 1:
What is an inventor?

Day 2:
Understanding why inventors invent
Concept development activity : Famous Inventions
List 20-25
Sort into groups
Regroup
Generalize- What can you say about inventions that you did not think before?

Day 3:
History of a Few Inventions Activity - jigsaw

Day 4-5:
Reading nonfiction text
Kids Discover Inventions magazine: read and discuss
Activity: Poster reflections/Gallery Walk

Days 6-8:
Invention Research Project
Students research an invention and the inventor.
Students use Google Drawing to develop an invention flyer in order to share what they learned.

Days 9-10:
Fairy Tale Invention Diagrams

Days 11-12:

Rube Goldberg
History
Rube Goldberg student journals for designing
Rube Goldberg Team Invention

Day 13-15:
Final Project: Become an Inventor
Students develop their own inventions and complete an invention journal with all details.
Students build a small scale model of their invention.

Intervention and Enrichment	
Students who "need more support"	**Students who are "already there"**
Students will have the choice to work independently or with a partner during different parts of the unit. Instruction is provided in a way so that the teacher can support those students needing extra help while others are working independently.	The content of this unit goes beyond the 3rd grade essential standards. The unit is structured to provide students with opportunities for critical thinking, problem solving, and collaboration. Students drive the learning and must make decisions based on their knowledge and opinions. Students are exposed to a wide range of reading materials that allow them to deepen their abilities to infer, interpret, and respond.

Integration with Other Content Areas
This unit integrates science, social studies and ELA. Students will have the opportunity to explore concepts through the lense of inventions. They will develop historical perspective by studying inventions and inventors of different time periods. They will develop reading, writing, and speaking, and research skills throughout the unit by participating in a variety of lessons and projects. They will be exposed to a variety of technologies both as tools for research and product development.

Teacher Reflection
At the end of your unit, write a brief reflection about how your plans worked as you carried them out. What worked well? What did not work well? How did your students engage with the content?