

SCIENTISTS & INVENTORS

Research Unit

PRINT VERSION

Sample Unit Outline

Here is a sample unit calendar that you can use as a guide during your unit may differ depending on your own schedule and which version you choose to use. Have students focus on 1-2 questions per their journals as you see fit.

M	T	W	Th	Fr
Assign partners	Using Table of Contents and Index Lesson or	Using Titles and Headings Lesson or	Students put together journals	Write about sci
Draw innovators	Using the Internet for Research Lesson	Finding Credible & Reliable Sources Online Lesson	Catch up/review text features	Write in
Send parent letter				Write in
Who are some well-known scientists?	Who are some well-known inventors?	What are some important	What are some	

Unit Preparation

Pages to Copy:

- Innovator Cards:** These will be put in a basket and drawn out by the students to assign each pair of students a leader. Past and current scientists and inventors are included with a picture of each one.
- Parent Letter:** This is the unit. It will inform the student's parents about the Innovation Fair.
- Innovation Fair Invite:** Invite home with student parents to the Innovation Fair.
- Table of Contents & Other Text Features:** Features Mini Lesson Using the Internet & Using the Internet f

Using the Table of Contents and Index

Fill in the information about the Table of Contents and the Index in the boxes below.

The Table of Contents is found at the _____ of the book.
The Table of Contents is _____ long.

Innovation Model Example



Cope heliocyte

What jobs did _____ have?

What were some that happened in _____

What do I already know about scientists?

Lower & Upper Grades

Unit Outline & Lesson Plans for Easy Planning

Sample Unit Outline

Here is a sample unit calendar that you can use as a guide during the unit. Your unit may differ depending on your own schedule and which journal version you choose to use. Have students focus on 1-2 questions per day in their journals as you see fit.

M	T	W	Th	F
Assign partners Draw innovators Send parent letter	Using Table of Contents and Index Lesson Using the Internet for Research Lesson	Using Titles and Headings Lesson or Finding Credible & Reliable Sources Online Lesson	Students put together journals Catch up/review text	What do I already know about scientists? What do I still need to know?
Who are some well-known scientists?	Who are some well-known inventors?	What are some important accomplishments of well-known scientists?	What are some important accomplishments of well-known inventors?	What are some important accomplishments of well-known scientists?
What do I already know about my innovator?	Where and when was my innovator born?	What was my innovator's childhood like?	What was my innovator's life like?	What was my innovator's life like?
What jobs did my innovator have?	What are some important events that happened in my innovator's life?	What obstacles did my innovator face and overcome?	What obstacles did my innovator face and overcome?	What obstacles did my innovator face and overcome?
Finish journals Report work day	Report & model work day	Report & model work day	Report & model work day	Report & model work day

Unit Preparation

Pages to Copy:

- Innovator Cards:** These will be put in a basket and drawn out by the students to assign each pair of students a leader. Past and current scientists and inventors are included with a picture of each one.
- Parent Letter:** This letter will be sent home on the first day of the unit. It will inform parents on the unit and ask them to send their student to school with informational texts about scientists and inventors. It will also inform them about the "I-".

Table of Contents & Index Mini Lesson

You Will Need:

- Table of Contents & Index Worksheet
- An informational text that includes a table of contents and index (Any topic will do. A scientists or inventor book with large text and pictures would be ideal.)

Instructions:

- Have students come to the floor. Tell the students that you will be showing them how to use two text features that can be found in informational texts. These text features will help them find the information they are looking for in the text.
- Bring out the table of contents and show it to the class. Ask the students to know what this page is called. (Call on students to tell the class that this page is called the table of contents.)

Innovation Model & Innovator Report

You Will Need:

- Construction paper
- Coloring supplies
- Glue
- Scissors

Innovation Model Directions:

- One of the pieces of information that students will be researching is accomplishments of their innovator. As a final piece of their unit, students will create a model that represents one of their innovator's accomplishments or inventions.
- Students can bring in supplies from home if they feel something that isn't supplied would benefit their creation. This must be student created and not just store bought by the student.

Innovator Report:

- Students will use the information they found while researching to write a short report about their scientist or inventor. They should include all the information from the assigned innovator section of their research journal.
- Students will write their rough draft on regular lined paper. Students will peer edit their papers (or you may edit them). Then they will write their final draft on the My Innovator Report page from this document.

Finding Credible & Reliable Sources Online and Citing the Source Mini Lesson

You Will Need:

- Finding Credible & Reliable Sources Online Worksheet
- A computer or tablet that can be projected (on a screen or TV) for the whole class to view

Instructions:

- Hand out the Finding Credible & Reliable Sources Online worksheet.
- Discuss the contents of the worksheet with students. Each tip included on the worksheet will help students with their online research.
- Tell students that including what sources they use for their research is important to give credit to the author. (Depending on the grade level of your class, you may choose how you'd like student to credit sources differently.)
- Students are not expected to credit sources with bibliographic information until 6th grade (according to CCSS). Students in 4th and 5th grade can easily include the name of the website they used as a way to credit sources.
 - For example, with this website <https://www.kidzone.walplanets/> students may use KidZone as the way to credit the source.
- Practice searching for websites and how to credit them.

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Table of Contents & Index Mini Lesson

You Will Need:

- Table of Contents & Index Worksheet
- An informational text that includes a table of contents and index (Any topic will do. A scientists or inventor book with large text and pictures would be ideal.)

Instructions:

- Have students come to the floor. Tell the students that you will be showing them how to use two text features that can be found in informational texts. These text features will help them find the information they are looking for in the text.
- Bring out the table of contents and show it to the class. Ask the students to know what this page is called. (Call on students to tell the class that this page is called the table of contents.)
- Show the index to the class. Ask the students to know what this page is called. (Call on students to tell the class that this page is called the index.)
- Show the students how to use the table of contents and index. Ask the students to find a specific topic they would like to find in this informational text. Then ask the students to tell you about the index table of Contents & Index worksheet. Walk around and as they fill out the Venn Diagram. Check for their as they work, if they need additional assistance you can provide again as a class.

The unit sample outline gives you an idea of how you could implement the unit into your schedule. (However, feel free to implement the activities however you see fit!) We have included lesson plans to prep your students for their research projects.


Parent Letter and Invitation to Keep Parents Involved

Dear Parent/Guardian,

We are starting a new unit about scientists and inventors. Students will begin researching general information about scientists and inventors, as well as an assigned innovator using informational text. Your child's leader is _____. If possible, please send your student with a book about this innovator and/or a book about scientists and inventors. These books could be from the public library, the school library, or from home. We will begin using the texts on _____. If you are unable to help them find a book, we will make sure there are still texts available for your student to use.

After students have finished their research, they will create a model of one of their innovator's accomplishments and write an innovator report about them. This will be presented to the class. After the presentations, we will have an Innovation Fair in which parents and other classes will be invited to see the student's work.

Please let me know if you have any questions!



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YOU'RE INVITED!

You are invited to our Innovation Fair! Students will be showcasing their own models created using their research. Information is below!

Date:

Location:

Time:

Details:



We Hope to See You There!

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We have included a letter to parents and an Innovation Fair invitation to help keep your students' parents and guardians involved and informed. You can type the dates and your name right into the letter.

Differentiated Student Worksheets to Teach Each Element of the Research Project

Name: _____

Using the Table of Contents and Index

Fill in the information about the Table of Contents and the Index in the boxes below.

The Table of Contents is found at the _____ of the book.

It is used to _____.

The Index _____.

It is used _____.

Name: _____

Using the Table of Contents and Index

Fill in the information about the Table of Contents and the Index in the boxes below.

The Table of Contents is found at the _____ of the book.

The Table of Contents is _____ long.

It is used to _____.

Name: _____

Examine the Table of Contents

It is important to understand the text features in order to understand the information within the text. Examine the Table of Contents and answer the questions below.

All About Bats

Bat Food	2
Bat Babies	4
Bat Homes	5
Predators	8
Index	

Using the Internet for Research

Practice coming up with keywords for the following research questions. Remember: be specific! Think about what it is you'd want to know if you were researching.

1. What is the state of Florida like?

2. What are tornados?

3. What are the planets in the solar system like?

4. Where are the world's ecosystems?

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Using the Table of Contents & Index

The table of contents and index are both tools that you will find in informational text. Write each criteria below where it belongs in the Venn Diagram.

found at the beginning of the book
found at the end of the book
helps you find information
3-2 pages long
lots of pages
lists topics and where they can be found
sorted in the order found in the book
sorted in alphabetical order
broad topics
specific topics

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Informational Text Features

Understanding the text features found in informational text is crucial to find the information you'll need about scientists and inventors. Write the definition for each text feature below. You will use this as a reference while you're doing your research.

Table of Contents: _____

Index: _____

Glossary: _____

Titles: _____

Headings: _____

Photos: _____

Captions: _____

Graphs/Charts: _____

Special Print: _____

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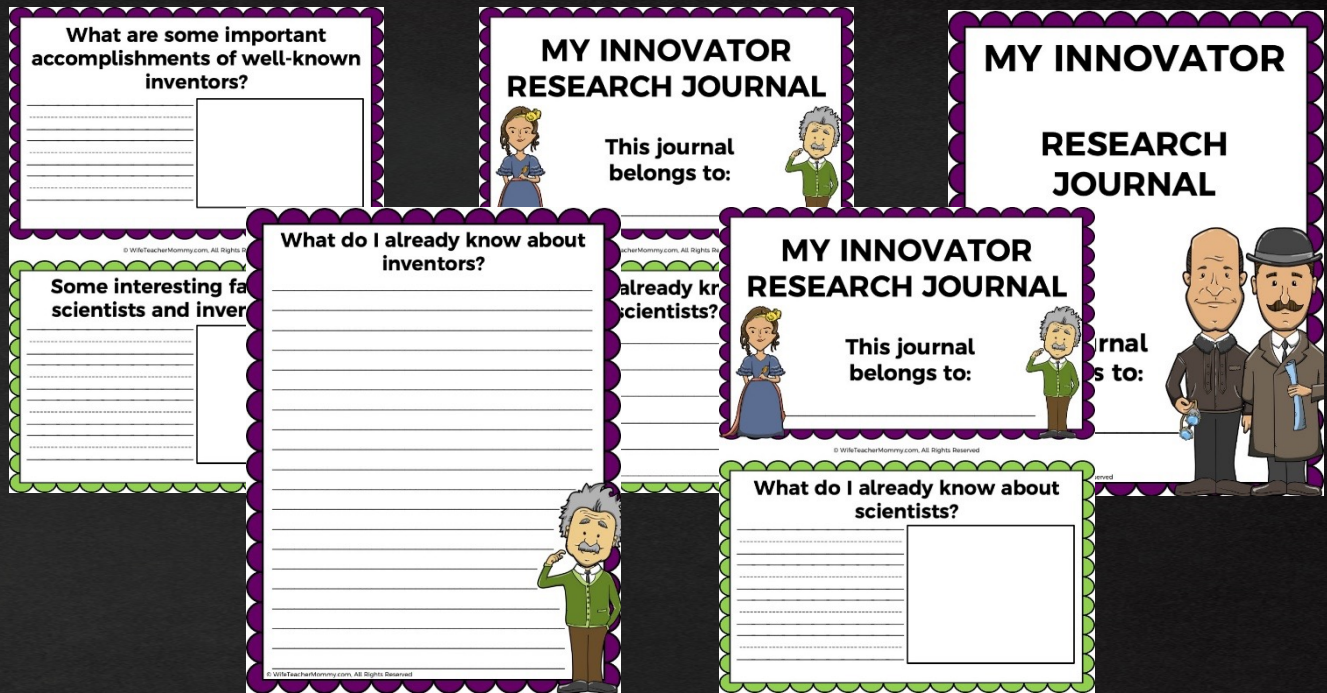
Differentiated student worksheets are included for each mini lesson. We have created these worksheets to help your students of all ages learn each element of a research project in a simple easy to understand way.

Innovator Cards to Randomly Assign a Scientist or Inventor to Each Student



We have selected 22 scientists and inventors and have included cards spotlighting each of them for you to print, cut, and mix in a basket. Students will randomly choose which innovator they will research.

Multiple ½ Page and Full Sheet Student Research Journal Pages to Reach all Levels of Learners



The student research journal pages include differentiated pages of research prompts for students covering scientists and innovators. We have also included blank pages to create your own prompts.

Final Project With Grading Rubric for Easy Assessment of Student Understanding

Innovation Model & Innovator Report

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Grading Rubric

	10	7	5	0
Innovation Model	The student answers each scientist and inventor question thoroughly in their journal.	The student answers most scientist and inventor questions in their journal. They may be missing some information.	The student answers some scientist and inventor questions in their journal, but they are missing some. Not enough information.	The student has very little to none of their scientist and inventor questions completed.
Participation & Teamwork	The student followed each assigned innovator question thoroughly in their journal.	The student answers most assigned innovator questions in their journal. They may be missing some information.	The student answers some assigned innovator questions in their journal, but they are missing some. Not enough information.	The student has very little to none of their assigned innovator questions completed.
Innovation Model	The student included information from most pages of their journal. They include most required information.	The student has included some information from their journal but left out a lot. There may not be enough writing.	The student has included some information from their journal but left out a lot. There may not be enough writing.	The student has included minimal information about their innovator. They did not complete their report.

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Innovation Model Example



Copernicus' heliocentric theory

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Grading Rubric

	10	7	5	0
Innovation Model	Model is complete, creative, and resembles the assigned innovator. Directions were followed while using art materials.	Model is complete and resembles the assigned innovator. Directions were mostly followed while using art materials.	Model may not resemble the assigned innovator, or the student may have had behavior issues with the art materials.	Model is incomplete or not done. Student may have had behavior issues with the art materials.
Participation & Teamwork	The student participated throughout the unit and had no problems with teamwork.	The student mostly participated throughout the unit with minimal teamwork problems.	The student had some problems with participation and/or teamwork.	The student had major problems with participation and teamwork.

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Total Points: ____ / 50 points

Notes:

Students will complete their final project by writing a report about their assigned innovator and then create an innovation model. We have included an easy-to-follow grading rubric to make assessments quick and easy.