

# First Graders Can Research Too!

## Learning About Scientists Through Research

**Grade Level:** First Grade

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**Length of Unit:** Ten Lessons

### I. ABSTRACT

Be prepared to watch your students become teachers! First graders work together in small heterogeneous groups to complete an investigation on the scientists Edward Jenner, Thomas Edison, Louis Pasteur, and Rachel Carson. Through research, groups will become experts on the scientists and teach their classmates with fun and interactive presentations. This unit provides a wonderful opportunity for spring semester first graders to connect their prior knowledge with the scientists' contributions. The lessons include detailed research pages and an extensive bibliography for extended research. Teachers and students will assess and evaluate understanding with included rubrics.

### II. OVERVIEW

#### A. Concept Objectives

1. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
2. The student understands the skills necessary to generate questions and conduct research about topics using information from a variety of sources.
3. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
4. The student understands the skills necessary to present information effectively to an audience.

#### B. Content from the *Core Knowledge Sequence*

1. Science Biographies
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson

#### C. Skill Objectives

1. Ask and answer relevant questions and make contributions in small or large group discussions (TEKS Language Arts 1.3 c)
2. Write to record ideas and reflections (TEKS Language Arts 1.18 c)
3. Read nonfiction for information (TEKS Language Arts 1.10 a)
4. Identify relevant questions for inquiry; use pictures, print, and people to gather information and answer questions; draw conclusions from information gathered (TEKS Language Arts 1.15 a,b,c)
5. Choose and adapt spoken language appropriate to the audience, purpose, and occasion, including use of appropriate volume and rate (TEKS Language Arts 1.3 a)
6. Use eye contact and exhibit body control while presenting information to an audience
7. Displays data in an organized form (TEKS Math 1.9 a,b)

8. Identify historic figures who have exhibited a love of individualism and inventiveness with their contributions; compare the similarities and differences among the lives and activities of historic figures who have influenced the community, state, and nation (TEKS Social Studies 1.1 a,b,c)
9. Use graphs, charts, and signs to acquire information (TEKS Language Arts 1.10 b)
10. Uses information from organized data; draws conclusions and answers questions using graphs (TEKS Math 1.10 a)

### III. BACKGROUND KNOWLEDGE

- A. For Teachers
  1. Hirsch, Jr. E.D. *What Your First Grader Needs to Know*. New York: Dell Publishing, 1991, ISBN 0-385-31987-8
  2. [Encyclopedia Britannica](http://search.eb.com/eb/). 2003. Encyclopedia Online, <http://search.eb.com/eb/>
- B. For Students
  1. Environmental Change and Habitat Destruction
  2. Electricity
  3. Human Body: Vaccinations
  4. Human Body: Germs, diseases
  5. George Washington Carver biography information (*Kindergarten Core Sequence*)

### IV. RESOURCES

- A. Hirsch, Jr. E.D. *What Your First Grader Needs to Know*. New York: Dell Publishing, 1991, ISBN 0-385-31987-8.
- B. Selection of materials for student research. For a complete list of suggested resources, see bibliography.

### V. LESSONS

#### Lesson One: Learning About Famous Scientists!

- A. *Daily Objectives*
  1. Concept Objective(s)
    - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
    - b. The student understands the skills necessary to generate questions and conduct research about topics using information from a variety of sources.
    - c. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
  2. Lesson Content
    - a. Edward Jenner
    - b. Thomas Edison
    - c. Louis Pasteur
    - d. Rachel Carson
  3. Skill Objective(s)
    - a. Ask and answer relevant questions and make contributions in small or large group discussions (TEKS Language Arts 1.3 c)

B. *Materials*

1. Chart Paper
2. Markers
3. Labeled and printed pictures of each scientist from sources below:
  - a. Edward Jenner: [www.jennermuseum.com/sv/researcher.shtml](http://www.jennermuseum.com/sv/researcher.shtml)
  - b. Thomas Edison: [www.thomasalvaedison.org/](http://www.thomasalvaedison.org/)
  - c. Louis Pasteur: [www.library.utmb.edu/portraits/pasteur.htm](http://www.library.utmb.edu/portraits/pasteur.htm)
  - d. Rachel Carson: [www.rachelcarson.org/index.cfm?fuseaction=bio](http://www.rachelcarson.org/index.cfm?fuseaction=bio)(Pictures of the scientists may also be found in *What Your First Grader Needs to Know* pg. 316-321)

C. *Key Vocabulary*

1. Edward Jenner – scientist who found a way to help sick people get better from a disease called smallpox
2. Thomas Edison – scientist who learned about how electricity works. Made the light bulb and other inventions
3. Louis Pasteur – scientist who found a way to keep milk from going sour and also helped sick people get better from a disease called rabies
4. Rachel Carson – scientist who tried to keep the planet clean and wanted to save plants and animals that were getting sick from pollution
5. Scientist – a person who is interested in the world and tries to find things out about how things work and why things happen, tests things with experiments and tells other people about what he or she found
6. Biography – a book that is about a person’s life
7. Research – what people do in order to look for information about something they want to know more about
8. Sources – books, magazines, the internet, places or things that people use to help do research
9. Encyclopedia – a big set of books that has information about all different topics
10. Internet – a collection of information and sources that you look up on the computer
11. Magazine – sources that are printed many times a year about all different topics, they usually have pictures in them

D. *Procedures/Activities*

1. Have your children gather round in a circle on the carpet area. Have them sit quietly while you explain that you are about to introduce something very exciting.
2. Put the labeled pictures of the four famous scientists on the board or chart paper. Make sure that all children can see the pictures.
3. Ask the students, “Does anyone know who these people are?” Take guesses or any thoughts that the students may have. Encourage students to make predictions about when these people lived, where they lived, or what they did. This is a chance for you to record what students may know about the famous scientists. Use these contributions as a pre-assessment for the unit.
4. Explain that you are not surprised that we do not know too much about who these people are. Tell the students that these four people are very important and famous. Each person is a famous scientist who has made a

- difference in our lives today. Explain the definition of a scientist to the students and record it on the board or chart paper.
5. Ask the students, “If we do not know a lot of information about these people, how can we find out more about them?” Record answers and encourage students to discuss what resources they may be familiar with. If there is no discussion, ask students, “Do books give you information about people? Have we used books before to find out about people, places, or things? Is there anything else besides books that we could use to help us?” Record the information that you gather from the students during this discussion for your pre-assessment on the students’ knowledge of research.
  6. Make sure that you have a complete list of methods of research. If your students have not come up with the following methods of research, introduce them: books, biographies, magazines, internet, encyclopedia, personal letters, videos or movies, library resources, interviews, or any other resources that you may have at your school. As you introduce each term, explain the corresponding definitions and also explain the definition of sources.
  7. After looking over the final list, introduce the definition of research and take any questions or thoughts that the students may have about the new concept.
  8. Tell the students that we will need to do our own research about the four scientists because we do not know very much about them. Tell students that we will use some of the research methods that we have listed on the board in order to find out what we want to know.
  9. Tell students that on the next day, they will be split into four groups, and each group will be responsible for researching about one of the four scientists. Tell the students that you have already chosen the groups, and you are very excited about what we are all about to learn!
- E. *Assessment/Evaluation*
1. Pre-assessment of student’s knowledge regarding historical figures Edward Jenner, Louis Pasteur, Thomas Edison, and Rachel Carson. Their understanding will be assessed through classroom discussions and questioning.
  2. Pre-assessment of the concept of research and research materials. Their understanding will be assessed through classroom discussions and questioning.

**Lesson Two: Let the Research Begin!**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to generate questions and conduct research about topics using information from a variety of sources.
  - c. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
2. Lesson Content
  - a. Edward Jenner

- b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
- a. Ask and answer relevant questions and make contributions in small or large group discussions (TEKS Language Arts 1.3 c)
  - b. Write to record ideas and reflections (TEKS Language Arts 1.18 c)
  - c. Read nonfiction for information (TEKS Language Arts 1.10 a)
  - d. Identify relevant questions for inquiry; use pictures, print, and people to gather information and answer questions; draw conclusions from information gathered (TEKS Language Arts 1.15 a,b,c)

B. *Materials*

1. Six fact packets for each of the scientists. Each should include: one fact sheet provided in Appendices B – E; picture of scientists from the websites cited in Lesson One Materials section; photocopies of any other information and/or pictures from the variety sources listed on the bibliography or any other resources available. The goal is that the students are able to see and use a variety of sources from which the fact sheet information was gathered. Assemble fact packets ahead of time and separate them by scientist.
2. Sources from which the fact packets' photocopies originated, to be placed at each of the corresponding tables for each scientist.
3. Class set of copies of the Research Sheet (Appendix A)
4. Class set of legal or letter size manila envelope or folders to store each student's research materials. Label each with the students' names. Color code the folders into four groups or label with different colored makers or pens.
5. Teacher copy of Research Sheet (Appendix A), to be used for modeling
6. Recorded findings from the previous lesson of the types of sources used for research
7. Set of Vocabulary Cards (Appendix F) for teacher use
8. Labeled pictures from Lesson One Materials section
9. Small group lists compiled by teacher ahead of time. The groups should be heterogeneous. Each group should have at least one strong reader who can read the fact sheet to the group if necessary.
10. Several sources on George Washington Carver for modeling purposes

C. *Key Vocabulary*

1. Smallpox – something that made many people sick and sometimes die a long time ago
2. Disease – something that gets into your body and makes you very sick
3. Cowpox – something that made many animals sick and sometimes die a long time ago
4. Inventor – some who figures out or makes new things
5. Inventions – new things or ideas
6. Electricity – a force that powers objects and makes them work

7. Germs – tiny things that when they get into the body or other things can make you sick
8. Microscope – a machine that makes things appear bigger
9. Spoil – what happens when something goes rotten or bad
10. Pasteurization – process of heating liquid to get rid of germs
11. Nature – the outdoors, including plants, animals, water, and air
12. Poison – something that can seriously harm any living thing
13. DDT– something that people sprayed on plants to keep bugs away

D. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.
2. Tell the students that today, they will begin doing group work on their own scientist.
3. With students gathered around you, explain that you would like to show them how you do research before they begin their work.
4. Introduce the Research Sheet (Appendix A). Tell students that this is how we will be keeping track of information during the project. Tell them that you are also researching a scientist. Use the Teacher copy of Research Sheet, (Appendix A) to model how you find information.
5. Show students that you gather your materials before beginning research. Show students that you have collected two or three sources on your topic. For the modeling purposes use George Washington Carver because he was used in the Kindergarten *Core Knowledge Sequence*.
6. Read the first two research questions aloud and using the sources on George Washington Carver, fill out the first two questions. Ask students for participation and help in completing the worksheet, making sure to emphasize using the sources to answer the questions.
7. Explain that in their research groups, they will have something that you do not have. They will have a fact sheet for their scientist. Because some of the books are hard to read, the fact sheet will be the best way to get the information needed for the answers to the questions. Tell the students that on the fact sheet, the important information is bolded to help them find the answers. Emphasize this and ask clarifying questions to ensure that students understand where to find information.
8. Tell the students that you are done for today, and now it is their turn to do research. Explain that you have split up the class into four groups. Each group will research one scientist. Tell students, “It is important that you learn as much as you can about your scientist in the next few days because you are the only group that will be researching your scientist. After your research, you and your group will be responsible for teaching the rest of the class about your scientist. You will become experts on your scientist.”
9. Review with students your classroom expectations and behavior guidelines for group work. Have students participate in this brief discussion.
10. Review task for the day. First, to look through packets and read over fact sheet. Second, students must answer the first two questions on the research sheet. Emphasize that students can work together during this time to help each other.

11. Read aloud the pre-assigned small groups and direct each group to their own table or spot. When they are walking to their table or spot, hand each student their own manila folder or envelope containing fact packets and research sheet on their scientist. Make note that the folder for each group is color coded to correspond to the appropriate scientist.
12. Teacher should stop at each group to review vocabulary terms using Vocabulary Cards (Appendix F). Make sure that students are familiar with the new words and answer questions they have about these words.
13. As teacher moves from group to group, assess and monitor students' participation and cooperation in small group, progress on the first two questions, and ability to complete the assigned task.
14. Ten minutes before the lesson time is over, tell the students to clean up and return all of their papers and materials to their folders or envelopes.
15. Gather students on the carpet and have a short discussion about what we did today. After reviewing what we did today, tell students that tomorrow we will answer the next two questions. Encourage students to share with each other and their families what they are learning about their scientists.

E. *Assessment/Evaluation*

1. Observation of students working cooperatively in their heterogeneous groups. Record or note individual student participation.
2. Monitoring students' progress on first two research questions.
3. Review the students' work on the first two research questions.

**Lesson Three: Continuing Research**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to generate questions and conduct research about topics using information from a variety of sources.
  - c. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
  - a. Ask and answer relevant questions and make contributions in small or large group discussions; (TEKS Language Arts 1.3 c)
  - b. Write to record ideas and reflections (TEKS Language Arts 1.18 c)
  - c. Read nonfiction for information (TEKS Language Arts 1.10 a)
  - d. Identify relevant questions for inquiry; use pictures, print, and people to gather information and answer questions; draw conclusions from information gathered (TEKS Language Arts 1.15 a,b,c)

B. *Materials*

1. Six fact packets for each of the scientists used in previous lesson
2. Sources from previous lesson
3. Class set of copies of the Research Sheet (Appendix A)
4. Class set of envelopes or folders from previous lesson
5. Teacher copy of Research Sheet, (Appendix A) to be used for modeling
6. Recorded findings from the previous lesson of the types of sources used for research
7. Set of Vocabulary cards for teacher use
8. Several sources on George Washington Carver for modeling purposes

C. *Key Vocabulary*

1. Famous person – someone that many people know about because he or she is important or has done something important

D. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.
2. Tell the students that today, they will learn even more about their scientists.
3. With students gathered around you, explain that you would like to show them how you answered the second two research questions before they start working on their answers.
4. Review the Research Sheet (Appendix A). Use the Teacher copy of Research Sheet, (Appendix A) to model how you find information.
5. Show students that you have gathered your materials (like yesterday) before beginning research. Show students that you have collected two or three sources on your topic. For the modeling purposes use George Washington Carver again because he was used in the *Kindergarten Core Sequence*.
6. Read the second two research questions aloud and using the sources on George Washington Carver, fill out the questions. Introduce the term famous and ask students to briefly brainstorm what makes a person famous. Ask them if they think they know why their scientist might be famous. Ask students for participation and help in completing the worksheet, making sure to emphasize using the sources to answer the questions.
7. Remind students to use their fact sheet to help them answer the last two questions. Remind the students that on the fact sheet, the important information is bolded to help them find the answers. Emphasize this and ask clarifying questions to ensure that students understand where to find information.
8. Tell the students that you are done for today, and now it is their turn to do research. Remind students, “It is important that you learn as much as you can about your scientist in the next few days because you are the only group that will be researching your scientist. After your research, you and your group will be responsible for teaching the rest of the class about your scientist. You will become experts on your scientist.”
9. Review with students your classroom expectations and behavior guidelines for group work. Have students participate in this brief discussion.

10. Review task for the day. First, to look through packets and read over fact sheet. Second, students must answer the last two questions on the research sheet. Emphasize that students can work together during this time to help each other.
11. Read aloud the pre-assigned small groups and direct each group to their own table or spot. When they are walking to their table or spot, hand each student their own manila folder or envelope containing fact packets and research sheet on their scientist. Make note that the folder for each group is color coded to correspond to the appropriate scientist.
12. Teacher should stop at each group to review vocabulary terms using Vocabulary Cards (Appendix F). Make sure that students are familiar with the new words and answer questions they have about these words.
13. As teacher moves from group to group, assess and monitor students' participation and cooperation in small group, progress on the last two questions, and ability to complete the assigned task.
14. Ten minutes before the lesson time is over, tell the students to clean up and return all of their papers and materials to their folders or envelopes.
15. Gather students on the carpet and have a short discussion about what we did today. After reviewing what we did today, tell the students that tomorrow we will begin working on thinking about how to present our research to the rest of the class. Each person will have a different job in presenting the research.

E. *Assessment/Evaluation*

1. Observation of students working cooperatively in their heterogeneous groups. Record or note individual student participation.
2. Monitoring students' progress on last two research questions.
3. Review the students' work on the last two research questions. Evaluate the completed research sheet.

**Lesson Four: How to Plan a Presentation**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to generate questions and conduct research about topics using information from a variety of sources.
  - c. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
  - a. Ask and answer relevant questions and make contributions in small or large group discussions; (TEKS Language Arts 1.3 c)
  - b. Write to record ideas and reflections (TEKS Language Arts 1.18 c)

- c. Read nonfiction for information (TEKS Language Arts 1.10 a)
- d. Identify relevant questions for inquiry; use pictures, print, and people to gather information and answer questions; draw conclusions from information gathered (TEKS Language Arts 1.15 a,b,c)

B. *Materials*

- 1. Five copies of “Presentation Jobs” (Appendix G); one for each table and one for whole group lesson
- 2. Four copies of Job # 1 (Appendix I)
- 3. Four copies of Job # 2 (Appendix J)
- 4. Four copies of Job # 3 (Appendix K)
- 5. Twelve copies of Job # 4 (Appendix L)
- 6. Five copies of Job Rubric (Appendix H); one for each table and one for whole group lesson
- 7. Job assignments for each small group, compiled by teacher ahead of time. The jobs should correspond to the diverse strengths of each student. (i.e. confident artists should be illustrators, confident presenters should take the fourth question job)
- 8. Chart paper
- 9. Markers
- 10. Fact packets and completed research papers from previous lessons should be accessible to the students for reference and information

C. *Key Vocabulary*

- 1. Presentation – when people share information about what they have learned through research
- 2. Rubric – a way to judge your own work to make sure that you did a good job

D. *Procedures/Activities*

- 1. Gather students and review scientists as you did in Lesson One and review scientists.
- 2. Tell the students that today we will be preparing for our research presentations. Introduce and discuss the vocabulary word presentation. Remind them that this is their chance to be the teachers for the day. It is their job to teach the rest of the class about their scientist since they are the only ones who did research on that particular scientist. Emphasize the importance of this!
- 3. Tell the students that they already have learned and know all of the information for their presentations. All they need to do is to tell the class in the presentations what they have learned. They will use their “My Scientist Research Sheet” to tell each other what they learned.
- 4. Tell them that you looked over all of their research sheets and that you were impressed. Reassure students that they have all of the information they need for the presentation. Do this so that students have confidence in their ability to present and teach to the rest of the class.
- 5. Explain to the students that each student will have a job to do during the presentation. Some people may have the same job in a group, but this is because that job has more information to share and needs more students to help share.

6. Tell the students that you will be giving them a rubric (Job Rubric – Appendix H) so that they are aware of what you are looking for and what your expectations are. The two things on the rubric are content or if the students completed their job, and neatness. Explain that the rubric will help them to know how to complete all of the parts of their job. Ask for any questions. (If you have never used a rubric in your classroom before, you may need to take more time to introduce the concept and usage.)
7. Tell students that a copy of the rubric will be on each of the tables so that they may look at it while they are working. They will not fill out their own rubric until they have finished their job sheet.
8. Tell the students that you will now tell them what all of the jobs will be. Put the Presentation Jobs sheet (Appendix G) up on the board or on chart paper to display so that each student can see it.
9. Referring to the Presentation Jobs sheet (Appendix G), introduce each job. Point out to the students that each job on the sheet has both a picture and words to help describe the job. This sheet will be on each of the group's tables for them to refer back to.
10. Tell the students that each of them will get their own Job sheet (Appendices I - L). That job sheet will have their own picture for their job on it. On this sheet they will write their name and do their job for the presentation. They should include all of their work on this sheet for the presentation. Ask them, "Are you ready to hear about the jobs?!?"
11. The first job is that of the "Hello, My Name Is...". This person's job is to write the name of the scientist and write what the scientist did. Ask students, "Where will you find this information if this is your job?" If they need prompting, remind them of their research sheets and fact sheets from their packets. Ask for any questions. Have students restate to you what this first job entails.
12. The second job is that of the illustrator. This person's job is to draw a picture of the scientist and to write a sentence telling us how they know what he or she looks like. This person will be able to use crayons because they are illustrating. Ask students, "Where will you find this information if this is your job?" If they need prompting, remind them of their research sheets and fact sheets from their packets. Ask for any questions. Have students restate to you what this first job entails. Remind this that they need to draw the picture to the best of their abilities. The picture does not need to look exactly like the person, just do your best!
13. The third job is that of the house. This person's job is to write sentences telling us when your scientist was born and where he or she lived. Ask students, "Where will you find this information if this is your job?" If they need prompting, remind them of their research sheets and fact sheets from their packets. Ask for any questions. Have students restate to you what this first job entails.
14. The last job is that of the star. This person's job is to write sentences telling what the scientist did and why the scientist is famous. Emphasize that these are the reasons that we remember the scientists. Review the vocabulary word famous. Ask students, "Where will you find this information if this is your job?" If they need prompting, remind them of their research sheets and fact sheets from their packets. Ask for any

questions. Have students restate to you what this first job entails. Tell the students that more than one person in the group will be doing this job. Each person with this job needs to pick a different way that the scientist is famous. That means you will have to work together so that you can teach the class as much as possible about your scientist.

15. Ask for any final questions. For each group of students give them back their folders or envelopes. Then give each student his or her pre-assigned job sheet (Appendices I - L). Each student will get his or her own job sheet. Then dismiss the students back to their group tables or desks.
16. The teacher should move from group to group, assess and monitor students' participation and cooperation in small group, progress on the job sheets, and ability to complete the assigned task.
17. Ten minutes before the lesson time is over, tell the students to clean up and return all of their papers and materials to their folders or envelopes.
18. Gather students on the carpet and have a short discussion about what we did today.
19. Ask for any questions from the students. Tell them that tomorrow they will finish their jobs and practice their presentations.

E. *Assessment/Evaluation*

1. Observation of students working cooperatively in their heterogeneous groups. Record or note individual student participation.
2. Monitoring student progress on individual presentation jobs.

**Lesson Five: Practicing a Presentation**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
  - c. The student understands the skills necessary to present information effectively to an audience.
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
  - a. Ask and answer relevant questions and make contributions in small or large group discussions; (TEKS Language Arts 1.3 c)
  - b. Write to record ideas and reflections (TEKS Language Arts 1.18 c)
  - c. Identify relevant questions for inquiry; use pictures, print, and people to gather information and answer questions; draw conclusions from information gathered (TEKS Language Arts 1.15 a,b,c)

B. *Materials*

1. Teacher copy of each role sheet, completed ahead of time with the George Washington Carver example. This set should be completed and ready for modeling to the students.
2. Class set of Job Rubric (Appendix H)
3. Five copies of Presentation Rubric (Appendix M); one for each table and one for whole group lesson
4. Job assignments from previous lesson
5. Chart paper
6. Markers
7. Fact packets and completed research papers from previous lessons should be accessible to the students for reference and information.

C. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.
2. Remind students that yesterday we were working on our different jobs. Today, we will quickly finish our jobs and then use the rubric to assess our work. Tell students that they are to come to you when they are done with their job and you will give them a rubric to fill out. By the end of the lesson, they must pass only their rubric into you. They will have to leave their job sheet on their table so they can use it when they practice their presentation later in the lesson. Have students restate their jobs and repeat the task to you.
3. Send students to their tables with their folders or envelopes and tell them to begin finishing their individual job sheets.
4. The teacher should move from group to group, assess and monitor students' progress on the job sheets, and ability to complete the assigned task.
5. As students come to you, give them their rubrics to fill out. If students need assistance with the rubric, help them read the questions.
6. At least fifteen or twenty minutes before the lesson time is over, tell the students to clean up and return all of their papers and materials to their folders or envelopes.
7. Gather students on the carpet again.
8. Now teacher will model what a presentation looks like. Tell students that you will show them a presentation about your scientist to help them understand what their presentations will look like. Explain that the presentation will only be about five minutes long and you are going to make sure and do each job the best way that it can be done. Emphasize that students can watch you to see how they will do their own job on the next day. Use the completed job sheets on George Washington Carver.
9. For each job sheet the teacher will present the exact information that the job asks for. Explain to students that you are doing George Washington Carver, but tomorrow, they will be presenting their own scientists.
10. Model transitions between job sheets, good speaking skills, such as volume, eye contact, and movement. Tell them that these are the things that you will be looking for when they present.
11. Show the students the Presentation Rubric (Appendix M) and tell them that each table will have a rubric on it. The rubric will be on their table so that they can look at it while they are practicing. Tell them to make

sure that they watch each other and make sure that as a group, they are all doing the best that they can.

12. Ask for any questions from the students. Tell them that tomorrow they will begin their presentations. Along with the presentations, we will discuss and talk as a group about each scientist after the presentation. Tell students that there will be two presentations each day, meaning that two groups will not present tomorrow, but the day after.
13. Review behavior expectations and group work expectations before dismissing students to their small groups.
14. With the remaining time in the lesson, have students return to their tables. There they will have their job sheets on the table and can work with their group to practice their presentation.
15. After class, make sure to assess each student's individual job sheet. Take the students' folders and assess their work, then put everything back in the folder to tomorrow's presentations.

D. *Assessment/Evaluation*

1. Observation of students working cooperatively in their heterogeneous groups. Record or note individual student participation.
2. Assessment of each student's individual job sheet. Use Job Rubric (Appendix H) as assessment tool.

**Lesson Six: Presentations on Edward Jenner and Thomas Edison**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
  - a. Ask and answer relevant questions and make contributions in small or large group discussions; (TEKS Language Arts 1.3 c)
  - b. Choose and adapt spoken language appropriate to the audience, purpose, and occasion, including use of appropriate volume and rate (TEKS Language Arts 1.3 a)
  - c. Use eye contact and exhibit body control while presenting information to an audience

B. *Materials*

1. Student job sheets from previous lesson
2. Presentation Rubric (Appendix M); one for each presenter
3. *What Your First Grader Needs to Know*
4. Camera to take pictures of presentations

C. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.

2. Tell the class that today is the day we have been waiting for! Now we can begin our presentations!
3. Lead a small discussion about audience expectations and listening skills. Have students contribute their ideas about what a good audience looks like. When you feel that students are ready, begin the presentations.
4. Introduce the Edward Jenner group and tell them to start their presentation. During the presentation, assess student participation and content knowledge. Use the Presentation Rubric (Appendix M) that you have given students as a guide for your assessment.
5. After the first presentation, have a brief question/comment session. Then tell students that you would like to read them a little bit about Edward Jenner. Explain that there are many, many things that we learned about him, but there are still many things that we can learn. Tell them that you would like to read them a short biography about Edward Jenner to help all of us gain a better understanding of some more things that he did in his life.
6. Read pages 314-316 in *What Your First Grader Needs to Know*. Stop along the way to ask comprehension questions and review information. Ask students if they have any questions about Edward Jenner. Ask them if they can tell you one thing they learned from the presentation and biography.
7. When you feel that students are ready, begin the second presentation.
8. Introduce the Thomas Edison group and tell them to start their presentation. Follow same procedure as previous presentation and discussion.
9. Read pages 317-319 in *What Your First Grader Needs to Know*. Follow same procedures when reading and discussing text.
10. Tell presenters that you need them to fill out their presentation rubrics at this time. Have them go back to their desks and complete these rubrics.
11. Congratulate students on a job well done and tell them that you are excited to see more presentations tomorrow.

D. *Assessment/Evaluation*

1. Teacher observation of audience participation and listening skills.
2. Assessment of group presentations using Presentation Rubric (Appendix M).

**Lesson Seven: Presentations on Louis Pasteur and Rachel Carson**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  - b. The student understands the skills necessary to work cooperatively and effectively in heterogeneous small groups.
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)

- a. Ask and answer relevant questions and make contributions in small or large group discussions; (TEKS Language Arts 1.3 c)
- b. Choose and adapt spoken language appropriate to the audience, purpose, and occasion, including use of appropriate volume and rate (TEKS Language Arts 1.3 a)
- c. Use eye contact and exhibit body control while presenting information to an audience

B. *Materials*

1. Student job sheets from previous lesson
2. Presentation Rubric (Appendix M ); one for each presenter
3. *What Your First Grader Needs to Know*
4. Camera to take pictures of presentations

C. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.
2. Tell the class that today we will continue our presentations.
3. Follow presentation procedures from previous day. Begin with Louis Pasteur group.
4. Read pages 316-317 in *What Your First Grader Needs to Know*. Follow same procedures when reading and discussing text.
5. When you feel that students are ready, begin the second presentation for Rachel Carson.
6. Read pages 319-320 in *What Your First Grader Needs to Know*. Follow same procedures when reading and discussing text.
7. Tell presenters that you need them to fill out their Presentation Rubrics (Appendix M) at this time. Have them go back to their desks and complete these rubrics. Collect job sheets from all students at this time. Put them on your desk for tomorrow's lesson.
8. Congratulate students on a job well done! Tell them that you are excited to look at all their work. Tell them that we will keep working on the scientists tomorrow.

D. *Assessment/Evaluation*

1. Teacher observation of audience participation and listening skills.
2. Assessment of group presentations using Presentation Rubric (Appendix M).

**Lesson Eight: Mix Up and Organize**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)

- a. Ask and answer relevant questions and make contributions in small or large group discussions (TEKS Language Arts 1.3 c)
- b. Displays data in an organized form (TEKS Math 1.9 a,b)
- c. Identify historic figures who have exhibited a love of individualism and inventiveness with their contributions; compare the similarities and differences among the lives and activities of historic figures who have influenced the community, state, and nation (TEKS Social Studies 1.1 a,b,c)

B. *Materials*

1. Wall sized piece of butcher paper for large graphic organizer; make a grid on the butcher paper prior to lesson; the grid should include one box for each job sheet on each scientist, as well as a row and column on top (scientist's names) and side (scientist's facts that each job classified) Make sure to match these rows and columns with the Student Graphic Organizer (Appendix N)
2. Completed student job sheets from previous lesson; make sure that all the sheets are mixed up and not in order of the scientists
3. One copy of Student Graphic Organizer (Appendix N) to show students
4. Tape

C. *Key Vocabulary*

1. Graphic Organizer – a way to organize information and help us learn about the information

D. *Procedures/Activities*

1. Gather students and review scientists as you did in Lesson One and review scientists.
2. Tell students that you had a lesson planned today, but something has happened. You wanted the students to show their job sheets to the class and say something about their scientist, but accidentally, after school, the custodian was cleaning the room and bumped the job sheets off your desk. They got all mixed up and you have no idea what to do. It is too hard to tell which scientist is which, and you think that Rachel Carson might have invented the light bulb!
3. Tell students that today we are going to have to work together as a class to organize all of the information that we have on the scientists. We will have to put the job sheets on this big piece of butcher paper that was made for the wall.
4. Introduce the term graphic organizer. Tell students that this is way to keep things in order and help us to see them better. Tell them that graphic organizers are used all the time to help people keep things organized. Have a brief discussion about some graphic organizers that you might have posted in the room (i.e. calendar, attendance chart, behavior chart).
5. Ask students how the graphic organizer should be titled. Together title the graphic organizer.
6. Have students stay in their circle and put all the mixed up papers in the middle. Tell students that we will look at each job sheet and decide where it belongs.

7. Together go through each job sheet and have students participate by taping pictures onto the graphic organizer and contributing comments about each scientist.
  8. When the graphic organizer is filled up, have students check to make sure that each job sheet is in its place.
  9. Tell students that tomorrow, they will have to fill out their own graphic organizer, so they need to look closely at the big chart.
  10. Show students one copy of the Student Graphic Organizer (Appendix N) and show how each row and column corresponds to the larger graphic organizer. Tell them that this will be their task for tomorrow.
- E. *Assessment/Evaluation*
1. Teacher observation of audience participation and listening skills.
  2. Check for student understanding of historical figures' and their contributions.
  3. Assess students' ability to physically organize information into a wall-size graphic organizer that represents the attributes of the historical figures.

### **Lesson Nine: Make Your Own Graphic Organizer**

- A. *Daily Objectives*
1. Concept Objective(s)
    - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
  2. Lesson Content
    - a. Edward Jenner
    - b. Thomas Edison
    - c. Louis Pasteur
    - d. Rachel Carson
  3. Skill Objective(s)
    - a. Uses information from organized data; draws conclusions and answers questions using graphs (TEKS Math 1.10 a)
    - b. Identify historic figures who have exhibited a love of individualism and inventiveness with their contributions; compare the similarities and differences among the lives and activities of historic figures who have influenced the community, state, and nation (TEKS Social Studies 1.1 a,b,c)
- B. *Materials*
1. Class set of Student Graphic Organizer (Appendix N)
  2. Class set of Graphic Organizer Rubric (Appendix O)
  3. Large graphic organizer from previous lesson
- C. *Procedures/Activities*
1. While students are sitting at their desks, ask students if they remember what their task for today is. Tell students that they will be filling out their own graphic organizer, but that before they start, we need to make sure that we know what we are supposed to do.
  2. Introduce the Graphic Organizer Rubric (Appendix O), and explain that students need to complete all parts of the organizer neatly. Ask students if they have any questions about the rubric and their task. Keep a copy of the rubric on the board so students can refer to it during their work.

3. Pass out the Student Graphic Organizer (Appendix N). Before students begin, tell them that they can use the large graphic organizer to help them but they need to make sure that they try to fill out the boxes first without using the large organizer.
4. Have students begin working on their organizers. Teacher should monitor and assess student participation and work during this period. Check for students' understanding of each scientist and their characteristics.
5. At least ten minutes before the end of the lesson, stop students and have them complete their own Graphic Organizer Rubric (Appendix O). Tell students to turn both the rubric and their own graphic organizer into you when they are done.
6. At the end of the lesson, collect students' graphic organizers and rubrics for evaluation and assessment.
7. After the lesson, evaluate each student's graphic organizer using the two characteristics of the Graphic Organizer Rubric (Appendix O). Then assess each student's personal rubric to make sure that they have completed their own reflection on their work. Make comments on the student's rubrics to give your feedback on the Student Graphic Organizer assignment.

D. *Assessment/Evaluation*

1. Evaluation of individual students' graphic organizers using rubric.
2. Assessment of individual students' personal rubric to check that student has completed their own reflection on their work.

**Lesson Ten: Choose Your Favorite Scientist**

A. *Daily Objectives*

1. Concept Objective(s)
  - a. The student understands how historical figures help to shape our community, state, nation, and world (TEKS Social Studies 1.1).
2. Lesson Content
  - a. Edward Jenner
  - b. Thomas Edison
  - c. Louis Pasteur
  - d. Rachel Carson
3. Skill Objective(s)
  - a. Uses information from organized data; draws conclusions and answers questions using graphs (TEKS Math 1.10 a)
  - b. Identify historic figures who have exhibited a love of individualism and inventiveness with their contributions; compare the similarities and differences among the lives and activities of historic figures who have influenced the community, state, and nation (TEKS Social Studies 1.1 a,b,c)
  - c. Use graphs, charts, and signs to acquire information (TEKS Language Arts 1.10 b)

B. *Materials*

1. Class set of blank lined paper for writing
2. Butcher paper for class graph of favorite scientist, label the bottom with each scientists name

3. Markers
  4. Tape
- C. *Procedures/Activities*
1. While students are at their desks, tell them that today, we will finish studying the scientists. Because we have all learned so much about each scientist, we can make a decision about who we like the best.
  2. Tell students that each person will get one piece of blank paper. On that paper they will need to write complete sentences about who their favorite scientist was. Tell students that they do not have to pick the person that they researched. If they were more interested in another scientist, they can choose that person.
  3. Lead a small discussion about how you can prove that someone was your favorite scientist. Have students participate and ask questions about what kind of information they can put in their writing. Tell students that this writing really counts! It needs to be neat and complete. Tell them that you want them to convince you who the best scientist really was!
  4. Have students begin their writing.
  5. After students are done writing, gather them on the carpet with their papers.
  6. Tell the students that now they are going to figure out which scientist is the class' favorite. Take predictions and contributions briefly. Review the graph with the scientists' names on the bottom.
  7. Depending on time, have each student read his or her piece and place it on the graph in the appropriate column.
  8. Once the graph is complete, find out who the class liked best!
  9. Have the students reflect and discuss what they liked best about the whole unit and what they learned from the lessons.
  10. After the lesson, evaluate and give feedback on the writing pieces.
- D. *Assessment/Evaluation*
1. Evaluate students' final explanation and choice for the most influential scientist that they studied. Evaluation is based on neatness, clarity and defense of their choice.

## VI. CULMINATING ACTIVITY (Optional)

End the unit by having the students sort and graph their choices for the most influential scientist studied. Use the graph to determine the class' choice for the most influential scientist. Have the class choose how they would like to celebrate their favorite scientist. Options include: write a letter to the scientist; have the scientist (teacher) visit the classroom; write and act out a class play about the scientist's life; write and perform a song about the scientist.

## VII. HANDOUTS/WORKSHEETS

- Appendix A: Research Sheet
- Appendix B: Jenner Fact Sheet
- Appendix C: Edison Fact Sheet
- Appendix D: Pasteur Fact Sheet
- Appendix E: Carson Fact Sheet
- Appendix F: Vocabulary Cards
- Appendix G: Presentation Jobs

Appendix H: Job Rubric  
Appendix I: Job # 1  
Appendix J: Job # 2  
Appendix K: Job # 3  
Appendix L: Job # 4  
Appendix M: Presentation Rubric  
Appendix N: Student Graphic Organizer  
Appendix O: Student Graphic Organizer Rubric

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## **My Scientist Research Sheet**

1. What is the name of my scientist?
2. What does my scientist look like?
3. When was my scientist born?
4. What did my scientist do and why is my scientist famous?

## Edward Jenner: Doctor

**Edward Jenner** was a **doctor** who lived in England, a small country in Europe. England is on the other side of the Atlantic Ocean. If we wanted to visit England, we would have to fly on an airplane or go on a big ship.

Edward Jenner was **born on May 17, 1749**. He always wanted to find a way to help people who were sick. He went to school to become a doctor. While he was at school he worked with other doctors to help people who were sick.

Edward Jenner saw that many people were dying from a disease called **smallpox**. All types of people were getting very sick. Men, women, boys, and girls were dying. Edward Jenner wanted to find a way to stop smallpox from hurting more people.

Edward Jenner found a disease called cowpox that hurt cows. He studied cowpox and found out that it could help people. If people got cowpox they got sick a little, but then got better. The best part was that those people never got sick from smallpox.

At first no one believed Edward Jenner was helping people. He believed he was right and could save many lives. He kept helping people and became very famous. **Because of Edward Jenner, no one gets sick from smallpox anymore, including you and me!**

Edward Jenner died on January 26, 1823.

## Thomas Edison: Inventor

**Thomas Edison** was born on **February 11, 1847**. He lived in Milan, Ohio. Ohio is a state in the United States of America. You can find Ohio on a map if you want to see where he lived.

Thomas Edison liked to play with many things. Sometimes he got in trouble for playing too much. He liked to play when he was supposed to be learning. His mom was his teacher.

After school Thomas Edison had many jobs. He worked on a train and also helped send messages to people all across the country. He liked his jobs, but he really wanted to make new things. These new things are called inventions.

When Thomas Edison was 22 years old **he became an inventor**. People would buy the new things that he made. He used the money to help make even bigger things. Sometimes it took him many years to make a new invention. Even after years, some of them did not work.

He kept on trying and **invented things like the light bulb**. He used **electricity** to make the light bulb work. It was the first time that anyone did this. People were very excited because they did not have to use the light of candles to see anymore.

Thomas Edison died on **October 18, 1931**.

## Louis Pasteur: Teacher

**Louis Pasteur** was born on **December 27, 1822**. He was born in the country of France. France is on the other side of the Atlantic Ocean. If we wanted to visit France, we would have to fly on an airplane or go on a big ship.

Louis Pasteur loved to draw when he was young. He also loved school and to study about science and art. He loved to read about many things and was very smart. Louis Pasteur went to school for many years. He then became a teacher at a college in France.

While Louis Pasteur was a teacher he also studied many things. One of the things that he studied was about germs. He learned that germs are what make us sick. He helped doctors and hospitals to keep their offices clean.

One day he found out that germs also could make our food bad. Louis Pasteur saw that his milk would sometimes taste sour and bad. He looked at his milk under a microscope and saw many, many germs. He wanted to get rid of the germs and make his milk taste better. He tried many things to do this.

**He found that once he heated his milk the germs were gone.** He showed this to the milk company and they were very happy. Now milk companies heat all of their milk before they send it to the stores. It is our job to keep the milk cold before we drink it so that it does not spoil. They call it **pasteurization**, after the name of Louis Pasteur.

Louis Pasteur died on September 18, 1895.

## Rachel Carson: Nature Lover

**Rachel Carson** was born on **May 27, 1907**. She was born in Springdale, Pennsylvania. Pennsylvania is a state in the United States of America. You can find Pennsylvania on a map if you want to see where she lived.

Rachel Carson loved to be outside. She played in the woods and wrote stories and pictures about nature. Her parents were proud of her and when she grew up she went to college.

Rachel Carson studied nature and loved the ocean. Her first job was in Washington, D.C. She wrote books about nature.

Rachel Carson was upset that people were not taking care of nature. She found that there was a lot of trash and poison that was hurting the plants and the ocean. She wrote a book telling people about what was hurting nature. This book became very famous.

**Because of her books and beliefs people know that we have to take better care of nature and our world.** One of the things we learned was that the poison called **DDT was killing many animals and hurting people.** People thought that DDT would kill bugs, but they did not know it would hurt plants and people. We now know not to use DDT on our plants.

Rachel Carson died on April 14, 1964.

Appendix F: Vocabulary Cards

<b>Edward Jenner</b>	Scientist who found a way to help sick people get better from a disease called smallpox
<b>Thomas Edison</b>	Scientist who learned about how electricity works. Made the light bulb and other inventions
<b>Louis Pasteur</b>	Scientist who found a way to keep milk from going sour and also helped sick people get better from a disease called rabies
<b>Rachel Carson</b>	Scientist who tried to keep the planet clean and wanted to save plants and animals that were getting sick from pollution
<b>Scientist</b>	A person who is interested in the world and tries to find things out about how things work and why things happen, tests things with experiments and tells other people
<b>Biography</b>	A book that is about a person's life

Appendix F: Vocabulary Cards Cont'd.

<b>Research</b>	What people do in order to look for information about something they want to know more about
<b>Sources</b>	Books, magazines, the internet, places or things that people use to help do research
<b>Encyclopedia</b>	A big set of books that has information about all different topics
<b>Internet</b>	A collection of information and sources that you look up on the computer
<b>Magazine</b>	Sources that are printed many times a year about all different topics, they usually have pictures in them

Appendix F: Vocabulary Cards Cont'd.

<b>Poison</b>	Something that can seriously harm any living thing
<b>DDT</b>	Something that people sprayed on plants to keep bugs away
<b>Famous Person</b>	Someone who many people know about because he or she is important or has done something important
<b>Presentation</b>	When people share information about what they have learned through research
<b>Rubric</b>	A way to judge your own work to make sure that you did a good job
<b>Graphic Organizer</b>	A way to organize information and help us learn about the information

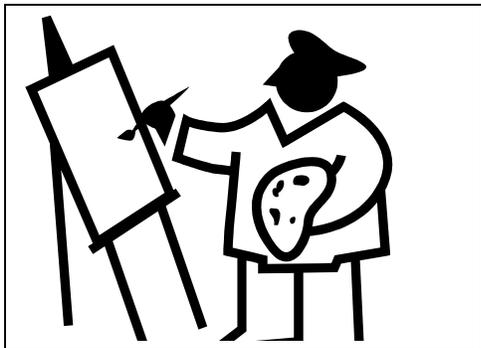
Appendix F: Vocabulary Cards Cont'd.

<b>Germs</b>	Smallpox tiny things that when they get into the body or other things can make you sick
<b>Microscope</b>	A machine that makes things appear bigger
<b>Spoil</b>	What happens when something goes rotten or bad
<b>Pasteurization</b>	Process of heating liquid to get rid of germs
<b>Nature</b>	The outdoors, including plants, animals, water, and air

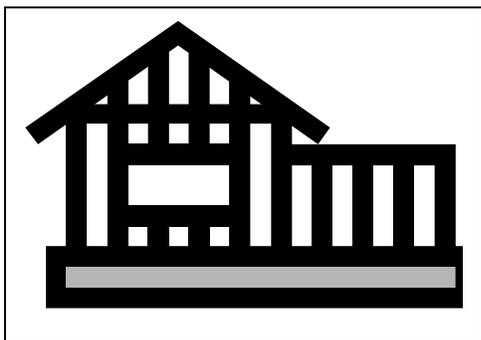
## Presentation Jobs

Hello, My Name Is...

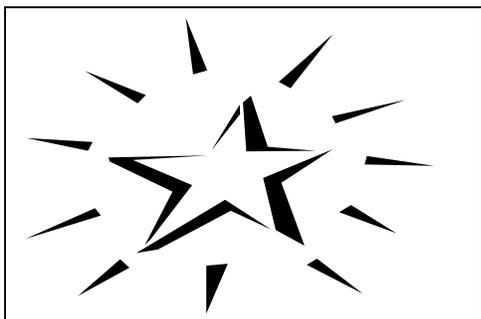
Your job is to write the name of your scientist and to write what your scientist did.



Your job is to draw a picture of your scientist and to write a sentence telling us how you know what he or she looks like.



Your job is to write sentences telling us when your scientist was born and where he or she lived.



Your job is write sentences telling us what your scientist did or why your scientist is famous.

Name: \_\_\_\_\_ Date \_\_\_\_\_

## How Did I Do on My Job?

**I did all the parts of my job.**



Great Job!



OK



Not good

**I did my job neatly. The teacher can read my paper and can see my picture.**



Great Job!



OK



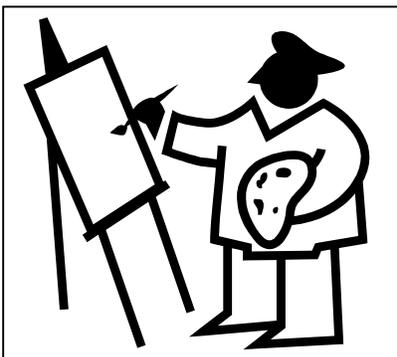
Not good

**Name:** \_\_\_\_\_

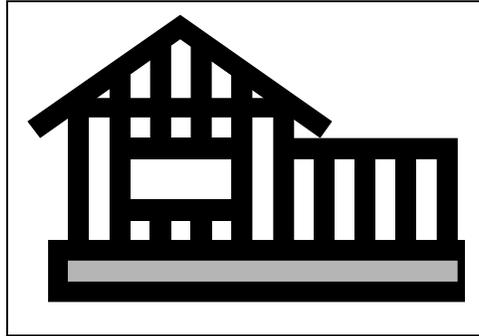
**Hello, My Name Is...**

Appendix J: Job #2

Name: \_\_\_\_\_

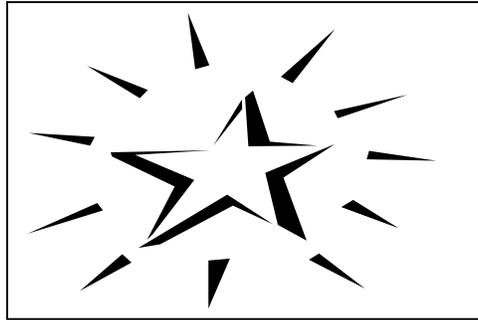


Name: \_\_\_\_\_



Appendix L: Job #4

Name: \_\_\_\_\_



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## How Did I Do on My Presentation?

**I did all the parts of my job.**



Great Job!



OK



Not good

**I spoke loud enough for everyone to hear me.**



Great Job!



OK



Not good

**I looked at the audience during the whole presentation.**



Great Job!



OK



Not good

**I kept my body in control during the whole presentation.**



Great Job!



OK



Not good

Appendix N: Student Graphic Organizer

Name: \_\_\_\_\_ Date: \_\_\_\_\_

	<b>Edward Jenner</b>	<b>Thomas Edison</b>	<b>Louis Pasteur</b>	<b>Rachel Carson</b>
<div data-bbox="138 556 376 747" data-label="Text"> <p>Hello, My Name Is...</p> </div>				
<div data-bbox="138 898 376 1098" data-label="Image"> </div>				
<div data-bbox="138 1260 376 1444" data-label="Image"> </div>				
<div data-bbox="138 1579 376 1766" data-label="Image"> </div>				

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## How Did I Do on My Graphic Organizer?

**I filled out all of the boxes on my graphic organizer.**



Great Job!



OK



Not good

**I did my job neatly. The teacher can read my paper.**



Great Job!



OK



Not good