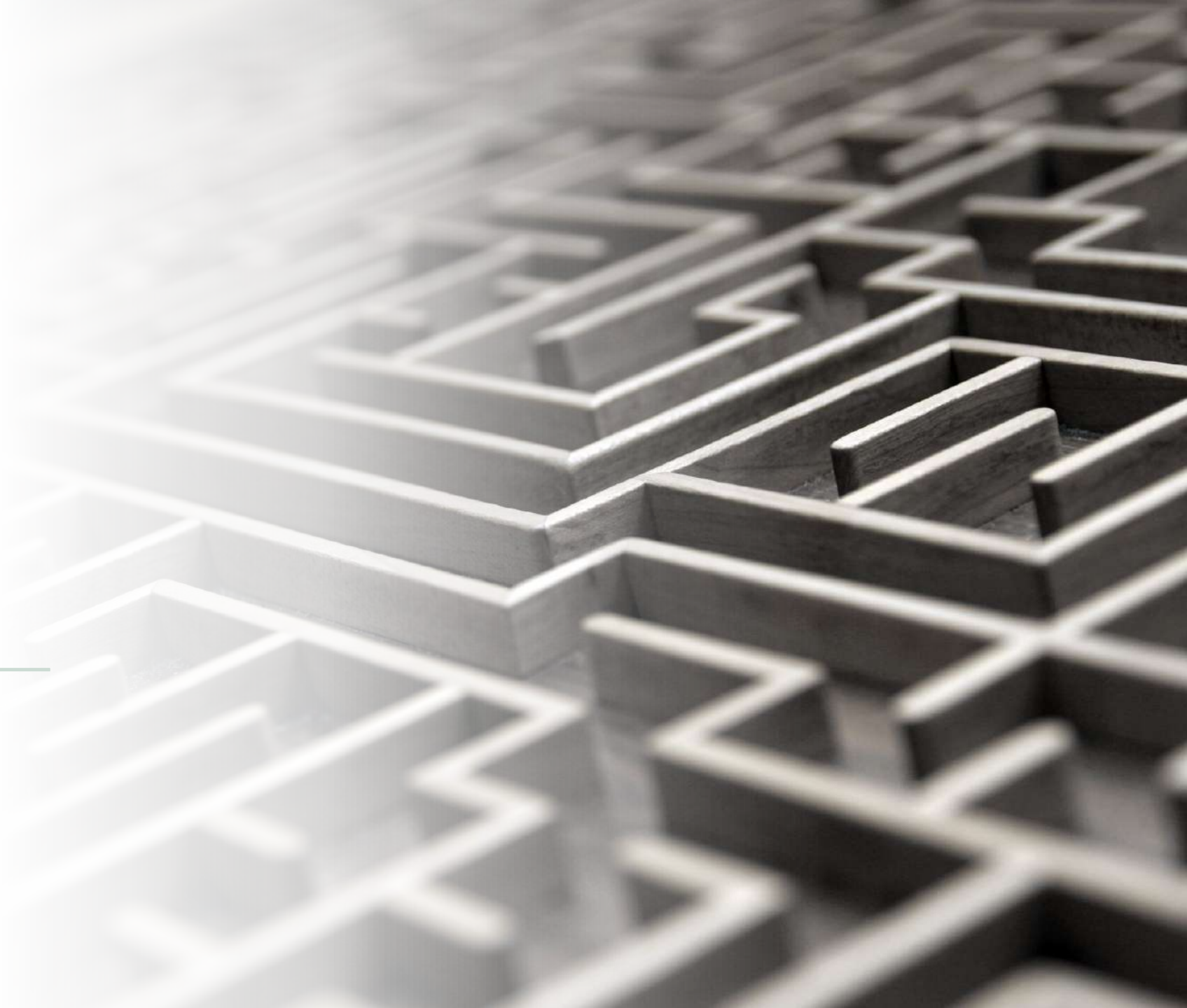




# Looking at It from Many Perspectives— Documentation

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Unit 4 Lesson 6





# Standards & Objectives

- **Writing** – I can create explanatory texts to document my inventions, including diagrams (and domain-specific vocabulary) to convey information. [W.4.2]
- **Speaking and Listening** – I can collaborate in my lab group to generate multiple ideas and respond to a new building challenge. [SL.4.1b]



# Welcome to Eureka!





### **A Note from George Washington Carver:**

Hello, seedlings!

I used inventions in my work, but I also worked a lot with . . . vegetables. And legumes. The peanut, the peanut is not a simple machine. "Invention breeds invention" is a great tool for inspiration, but it's not the only one. Today we're going to think about perspectives—looking at things carefully and from different angles.

Sincerely,

*George Washington Carver*





**As an example, let's think about eating. What are the devices we use to get food into our mouths?**

1. fork
2. spoon
3. bread
4. chopsticks
5. fingers (not an invention)

# How Many Ways Can You Solve It?

**ROUND 1:** People need to travel far away

**ROUND 2:** People need to do math

**ROUND 3:** People need to record information

**ROUND 4:** People need to communicate



# Sensory Observations

- 1. **sight**: color, size, shape
- 2. **touch**: texture, weight
- 3. **sound**: shake it, drop it
- 4. **smell**



# PROFESSOR CARVER'S GUIDE TO DOCUMENTING MATERIALS

Name of object: Pencil

## Description of object

Sight:

Yellow, silver, pink, 6 inches long, narrow, cylindrical, pointy

Touch:

Pointy, smooth, lightweight

Smell:

wood

Sound:

Tapping, quiet

What is the object usually used for?

writing

What else can you do with it?

Roll it

Prop things up

Brace other things with it





**A Note from Professor Carver:**

Seedlings, you are nearly ready to be transplanted into the wide-open garden that is Round 2. But not without building again! This building challenge is more . . . challenging. In your lab, you must create one invention and document how you did it.

The judges' office at *Eureka!* is . . . well, it's starting to be a fire hazard. We get so involved in our inventing, we don't want to stand up and walk two feet to throw the many, many irritating memos we get from the network into the trash can. Please help!

Sincerely,

*George Washington Carver*





## PROFESSOR CARVER'S DOCUMENTATION BUILDING CHALLENGE

### Building prompt:

You are building an invention the judges can use to throw out trash!

### Challenge requirements:

- The trash can is two feet away.
- The user is sitting down.
- You can use anything in the building materials box.
- You cannot just throw the trash.
- Your invention must work 75% of the time.

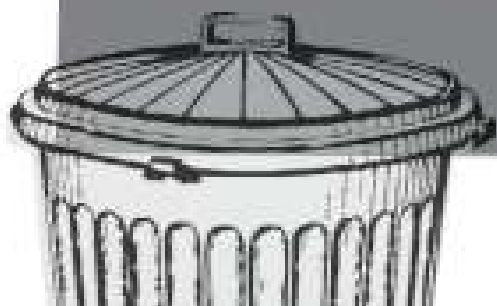
You may practice using your invention and make changes to it as time allows. You are allowed to get out of your seat to build!

### Notes on group work:

You will work in a group to complete this building challenge. In order to be successful, you will need to work together! Be sure that everyone is given an opportunity to express their opinion, and that everyone is contributing to the process. Listen carefully to what the other members of your group have to say. Their ideas may help you come up with a new idea of your own.

One member of your lab will be assigned to be the building manager.

The building manager leads the decision-making process. This does not mean that the building manager has to do all of the work, or that the group uses all of the building manager's ideas! But sometimes, when a group has many ideas, it can be hard to decide which one to try first. The building manager should listen to the lab and help make that decision. He or she can call for a vote, or, if there's a tie, break the tie. If there are several tasks to be accomplished at the same time, the building manager can assign them. If you don't know what you should be doing to help, ask the building manager.





**Build and Document a trash disposal system**

# ACADEMIC VOCABULARY

- **abscesses**, n. inflammations caused by bacteria
- **antibiotic**, n. a medicine that kills or stops the growth of diseased cells
- **antiseptics**, n. substances that prevent the growth of disease-causing microorganisms
- **bacteriologist**, n. a scientist who studies microscopic organisms that often cause disease
- **boils**, n. a painful skin condition

# ACADEMIC VOCABULARY

- **contaminated**, adj. harmful or unusable due to contact with something unclean
- **cultures**, n. growths of microorganisms in a nutrient medium
- **digress**, v. get off the subject
- **heed**, v. pay attention to
- **petri dishes**, n. shallow, circular, transparent dishes with flat lids, used for the culturing of microorganisms

# INTROSPECTIVE INVENTORS

- What was frustrating about this building challenge? What was fun?
- Why is documentation an important part of inventing?
- Do you have any advice about documentation to our inventors watching at home?



**ALEXANDER FLEMING**

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

**Birthdate:** \_\_\_\_\_

**Birthplace:** \_\_\_\_\_

**Invention(s):** \_\_\_\_\_

**Describe a challenge or disappointment that this inventor faced.**

**Name one fact about this inventor or the story of his/her invention that you find interesting.**

# EXIT TICKET

How does a diagram help someone to understand your invention?