



## LESSON 8: Communicating

### LESSON OVERVIEW

This lesson will introduce students to communication as the final step in the design process. Students will be able to talk about their design process and the steps they took from idea conception to making a prototype. Students who have a completed prototype can share with the class how it works and changes they made to their design while they built it. If the prototype is not yet complete, they can present their research and what they need to do to finish their prototype.

### OBJECTIVE

Students will be able to:

- Accurately and concisely describe their invention to another person.
- Determine the most important aspects of their invention to share with another person.
- Create a visual display to inform an audience about their invention and their design process.
- Present a well thought out pitch about their invention.

### MATERIALS

- Google Slides: YIPLit Lesson 8
- Book: *The Day the Crayons Quit*, by Drew Daywalt, Illustrated by Oliver Jeffers  
ISBN: 0399548920, 978039954892
- Video: *The Day the Crayons Quit*, Read Aloud, (included in Google Slides)  
Link: <https://www.youtube.com/watch?v=gPkrhIEoOJg> (Story Time Out Loud, 7:28 minutes)
- Video: *An Inventor Presentation: Team Bus Safety Stop*, (Included in Google Slides)  
Link: <https://youtu.be/EpPKDxBEnw4> (K-12 Inventure , 3:15 minutes)
- Timer (timer countdown included in Google Slides, or use a clock, phone, or other device)
- Invention Name Worksheet (included in YIPLit: Inventor's Journal)
- Invention Story Mountain worksheet (included in YIPLit: Inventor's Journal)
- Invention Display Board Requirements (*teacher only, may also give to students*)
- Invention Display Template worksheet (included in YIPLit: Inventor's Journal)
- Cereal box (or other product advertisement)
- Materials for making display boards (item such as construction paper, computer and printer paper, glue, stickers, stencils, tape)
- Pencils, pens, markers or crayons for writing and drawing
- YIPLit Inventor's Journals

### NOTES FOR THE TEACHER

Teacher may use slides provided or lead instruction and discussion on their own.

There are multiple components for this lesson: 1) Naming your invention, 2) Making a display board, and 3) Presenting your invention. You may choose to cover all three components, or just one or two. Please

note, that if you choose to do multiple components, you will need more time to complete the activities and this lesson may span 1-3 days depending on how you wish to lead the lesson. Or, you may consider asking students to complete parts of this lesson, such as making their display board, or practicing their presentation, at home. Be sure to communicate clearly to the students your expectations for any home work and also communicate to families about the project and what students should do at home (including approximate time that should be spent, requirements you have for the project, expectations for any adult assistance, and when you would like the them returned.)

Please note that you may set the requirements for any invention showcase or invention fair you plan for your students. However, to be eligible to compete in the Northern New England Invention Convention and the Invention Convention US Nationals and Invention Convention Globals, students must have a presentation, a display board and a model/prototype (working or non working). More details about all competition requirements can be found on the YIP website: <https://www.unh.edu/leitzel-center/young-inventors-program/compete>.

For the Practice Your Presentation activity, you may choose to video the presentations so that students can later watch themselves. The videos are fun to watch but are also valuable teaching tools as students can see themselves presenting and may be able to identify areas for improvement for the future.

#### INSTRUCTION & ACTIVITIES

***Teacher may lead the following lesson plan with flexibility to adapt as needed to fit technology and class format:***

### **1. NAMING YOUR INVENTION**

#### **Teacher Instruction:**

Tell students that communication is an essential step in the invention process. Students have created brilliant solutions to real problems, but now they need to tell others about it. Being able to talk about their inventions and “market” them in a way, is important to the overall process. One important piece of communication is giving the invention a name.

Ask students if anyone has come up with a name for their invention yet? Just like a product they see in the store, an invention needs a strong, descriptive name. Ask students to think about the names of products they like. Why do they like these names or why do they stand out? (Give examples such as Rice Krispies, Nike Air Max, Nintendo Switch, Orange Leaf, McDonald’s, Target). Tell students that when they name their invention the name should be easy to say and easy to remember. Names should also describe the invention in some way so that others know what it is and/or does.

#### **Activity: Naming Your Invention Gallery Walk (15 minutes)**

Give students 5 minutes to think of a name for their invention if they have not done so already. (Use a timer if desired). Ask them to think about key words that describe their invention. Then they can think of adjectives or other words that rhyme or begin with the same letter (alliteration) or that sound fun to go with them. Give examples of some good invention/product names if students are feeling stuck. Students should write all their ideas on the My Invention Name worksheet (included in YIPLit: Inventor’s Journal).

Examples of invention/product names: Fruit Loops, Fun Fish Feeder, The Lego Lift, Pet Scratcher 2000, Transformers

Once students have names for their inventions, ask them to do a gallery walk around the room to share their ideas with classmates. Ask them to record the number of votes each of their invention name choices get. After about 7 minutes of sharing, ask students to choose their final name. Remind students that they do not have to select the name that got the most votes, but that the popular choice may help them as they decide on their own.

## **2. MAKING A DISPLAY BOARD**

### **Teacher Instruction:**

*Note: Only lead this section if you plan to host a showcase/invention fair for competition and require a display. If you do not want displays, you may skip ahead to the “Presenting Your Invention” part of this lesson. If doing displays, be sure to have tri-boards for all students. They can bring them from home or you can provide them.*

Tell students that the next step in communication is to design and make a display board about their invention project. This display will be shared with others in the Inventor Showcase event. Students will use a tri-fold board to make the display. Ask students what they think makes a good display? Explain that a display should be visually appealing: neat, easy to read, and may illustrate a theme related to the invention or problem it solves.

Here I have a cereal box (or use another product in its packaging). What do you like about it? What don't you like? How do companies make information look interesting to convince them that they need to buy a product?

Show students some examples of displays (included in the Google Slides). What do they like about the display? What would they change in the display?

### **Activity: Make Your Display Board (20 minutes)**

Ask students to design and make their invention display. Encourage them to use the Invention Display Template (included in YIPLit: Inventor's Journal) to draft their ideas before they start putting things on their display board. Remind students that as they make their display, they should think about how to highlight their invention. Use bold colors to stand out, they may even want a design theme, like snowy mountains if their invention solves a problem we have in the winter. Use clear handwriting or print text from a computer and glue it to the board. Neatness is important.

*Note: Students may handwrite or type the text for their display. If typing, they can print their pieces, cut them out and attach them to the board.*

Explain to students your expectations and requirements for the displays. Distribute the display boards to the students. Allow them 20 minutes to work. They may need to finish at home (if allowed and you have time before your showcase event. See Notes to Teacher.)

*Note: You may change requirements as needed for the class. However, the following are required*

*components for competition at the Norther New England Invention Convention and the Invention Convention US Nationals.*

Display Board Requirements:

The maximum size of the tri-fold boards, with the wings folded in, the Display Board can only take 24" of table space. Display boards must have the following information in one consolidated place on the poster:

- Student(s) Name(s)
- Name of Invention
- Student(s) Grade(s)
- Student(s) School
- School City, State
- Statement of the problem
- Explanation of the invention as a solution to the problem
- Details of model construction
- Diagrams of design

### **3. PRESENTING YOUR INVENTION**

**Teacher Instruction:**

Tell students now that they have finished their prototypes, it is time to showcase their inventions with others (peers, family members, friends, judges, etc.) Explain to students that a presentation (or pitch) is an important, and the final, step in the invention process. Why? It allows the inventor to tell the **story** of their invention. What is it? How did you make it? What problem does it solve? How does it work? How can it help others?

**Activity: Invention Convention Presentation- Team Bus Safety Stop (5 minutes)**

Watch video for the Team Bus Safety Stop, (included in Google Slides).

Ask students:

- Was the presenter(s) enthusiastic and passionate about their problem and solution? How so?
- Was it obvious he/she practiced the pitch a great deal before the presentation to an audience? How could you tell?
- Did the pitch grab your attention? What was the "hook"?
- Did they share feedback from the user and explain how they changed their prototype based on what they learned?
- Do you notice anything special about what the students are wearing?

**Teacher Instruction:**

Tell students to think of their presentation like as a mountain. A mountain starts at the bottom/the ascent (the beginning), the summit (the middle), and the descent back down to the other side (the end). An invention story mountain could be something like:

- Part 1/The Beginning/Introduction- This is the part of the story where the author introduces the reader to the characters and the setting.

- Part 2/The Middle- This will be the main bulk of a story where all the action happens. This is where the characters encounter challenges and have to work through them. This is the main part of the plot of the story.
- Part 3/The End- This is where the characters have overcome their obstacles. It is where they “lived happily ever after”.

Ask students to think about the theme book. How would they describe the story mountain?

**Activity: Invention Story Mountain (10 minutes)**

Ask students to complete the Story Mountain worksheet (included in YIPLit: Inventor’s Journal) for their invention project “story”. What happened on their journey to developing their invention? Students may write responses, key words, draw, or share their ideas with a partner. They can use the following format as you guide them as needed:

1. First, start with the problem statement they developed in Lesson 5 (What’s the Problem? worksheet packet in the You Lit: Inventor’s Journal). Explain who has the problem and why it is a problem.
2. Next, share their designs and prototypes to show their invention process. Share the ideas considered and the final solution idea. Also explain how they made the invention and what they did to test it. Talk about the changes they made for the second iteration. Don’t forget to talk about the challenges faced during the process and how they were overcome.
3. Last, share the solution, the final prototype and explain how this solution will best solve the problem for the user/s.

**Activity: Practice Your Presentation- Let’s Play TAG (10 minutes)**

Now it is time to tell your story. Using your Story Mountain worksheet (included in YIPLit: Inventor’s Journal), practice your presentation pitch. You will tell your story to a partner. Give students 10 minutes to practice their presentation with a partner. Use a timer to make sure each student has equal time to practice (5 minutes each. A timer is included in the Google Slides). Ask partners to share feedback with their peer. Students should use the TAG model for giving feedback. T= Tell one thing you like about the presentation, A= Ask one question you have about the presentation or the invention., G= Give one suggestion of something they can improve for the next time they present. Students may need to finish at home (if allowed and you have time before your showcase event. See Notes to Teacher.) Finally, if time allows, have students share their presentations with the entire class or in a larger group. And, if possible, host an Invention Showcase event to allow students to share their projects with the school, their families and friends.

*Note to teacher: You may choose to video the presentations so that students can later watch themselves. The videos are fun to watch, but are also valuable teaching tools as students can see themselves presenting and may be able to identify areas for improvement for the future.)*

**Closure Activity: Whip Share (5 minutes)**

Ask students to share the one thing they are most proud of about their invention project.

## IDEAS FOR VIRTUAL INSTRUCTION

### **Naming Your Invention**

*Ask students to think of a name for their invention. Students should write all their ideas on the My Invention Name worksheet (included in YIPLit: Inventor's Journal). Then, they can share the names with others at home and ask them to take a vote on which one they like best. Or you could host a virtual class discussion or use a shared document where they can type their thoughts. Students can also share their ideas in the chat. Brainstorm with a partner, using a shared document or Zoom breakout rooms. When finished sharing, students will select the name they choose for their invention and write it on their worksheet.*

### **Make Your Display Board**

*Ask students to design and make their invention display. Encourage them to use the Invention Display Template (included in YIPLit: Inventor's Journal). to draft their ideas before they start putting things on their display board. Or you may have them complete a virtual display board using Google Slides, Flip Grid or another virtual display template.*

### **Team Bus Safety Stop**

*Have students watch the An Inventor Presentation: Team Bus Safety Stop, video. Ask them to discuss how the video relates to the Invention Process. Students can share their ideas in the chat, using a shared document or Zoom breakout rooms. You may also use this as an example of a good presentation as they write their own invention presentations.*

### **Invention Story Mountain**

*Ask students to complete the Story Mountain worksheet (included in YIPLit: Inventor's Journal) for their invention project "story". What happened on their journey to developing their invention? Students may write responses, key words, draw, or share their ideas with someone at home. Students may submit their presentation by recording themselves and sharing it using the virtual format of choice, or you may host a group meeting and allow students to share virtually.*