

SESSION THREE: The People Who Build Them

Students learn about the wide range of people and skills required to build a submarine. This lesson emphasizes teamwork and the importance of every role in successfully creating such complex machines.

SESSION OVERVIEW

Objectives

You will **take** students through the session and by the end, they will be able to:

- Identify different careers involved in building a submarine.
- Explain that teamwork is needed to build something as big and important as a submarine.

Essential Question

The essential question serves as the foundation for the entire session. Introduce it at the beginning of the session. Students should be able to answer it by the session's end.

- **Who makes submarines?**

Vocabulary

Throughout the session, intentionally weave the vocabulary words into discussion and activities to help students grasp and remember new terms. This approach keeps students engaged, encourages active participation, and strengthens word retention.

You will introduce these new vocabulary words and concepts throughout the session.

- **engineer:** a person who plans and designs submarines
- **welder:** a worker who puts metal pieces together to build something
- **electrician:** a person who connects wires and makes sure lights and buttons work safely
- **quality inspector:** a person who checks every part carefully to make sure it is safe and strong
- **blueprint:** a special drawing that shows how to make or build something

- **shipyard:** a place by the water where ships and submarines are built and fixed





Keywords to include in discussions:

- submarine, worker, team, job, build, weld, electricity, inspect, safe, mission

PREPARE FOR YOUR SESSION


Before the day of your session, use these resources to get ready to lead the session. The videos are specific to this session, so you will know exactly what you need to do and when.

Prepare in Advance

Session Section	Session Time	What to Do	What to Watch
CONNECT	3-8 minutes	<ul style="list-style-type: none"> Review the slide deck. Understand the vocabulary that is used in the session. Optional: If you have worked in a maritime job, prepare a story to share about your career. 	Session Review: 1 https://data.ja.org/s/8jUAAA 
WATCH AND DISCUSS	5 minutes	<ul style="list-style-type: none"> Review the video, <i>Who Builds a Submarine?</i> 	Avenger Hunt https://data.ja.org/s/9DUAAA 
DISCOVER	10 minutes	<ul style="list-style-type: none"> Consult with the educator on how to group activities. Review kit materials. Open and organize board game materials Optional: Review the digital interactive. 	Session Wrap-Up: 1 https://data.ja.org/s/9TUAAA 
TAKE HOME	2 minutes	<ul style="list-style-type: none"> Review Learning Log 3. 	Session Wrap-Up: 1 https://data.ja.org/s/9TUAAA 

Gather Materials

Verify with your local JA Area whether you're using kit-based or digital materials in advance. For kit-based materials, double check the quantities to ensure you have everything you need.

Kit Materials	Amount Needed	Prep Instructions
Classroom Materials		
 Junior Achievement Maritime Banner displayed throughout session	1 per class	hang at the front of the classroom
Tape for hanging materials	1 set per class	
4 Teacher Color-Coded Cards [Engineer, Welder, Electrician, Inspector] used during activity	1 per class	place these within reach
1 Large Laminated Submarine Blueprint used during activity	1 per group	place the board in the middle of the group
8 Engineers Reusable Vinyl Submarine Part Stickers Sheets [blue] used during activity	1 per group	one student from each group takes one
8 Welders Reusable Vinyl Submarine Part Stickers Sheets [grey] used during activity	1 per group	one student from each group takes one
8 Electricians Reusable Vinyl Submarine Part Stickers Sheets [yellow] used during activity	1 per group	one student from each group takes one

(continued)

Kit Materials	Amount Needed	Prep Instructions
8 Inspectors Reusable Vinyl Submarine Part Stickers Sheets [green] used during activity	1 per group	one student from each group takes one
10 Inspector's Maps used during activity	1 per group	inspectors from each group take one
Crayons used during activity		<i>not included in the kit</i>
Student Materials		
Learning Log: 3 student handout	1 per student	hand out 1 to each student

Instructions for digital elements can be found below.

Digital Materials	JA Learning Platform™ Link
Onscreen Presentation digital interactive slides for projection to guide the session	To access the digital assets used in this program go to JA Maritime website. FPO
[Optional] Digital Interactive	[Slide #]

In-Class Setup

Place Classroom Materials

Before the session starts, if possible, do the following:

- Display the Junior Achievement Banner.
- Place the Submarine Assembly Game materials within reach

- 4 teacher color-coded cards.
 - Engineer
 - Welder
 - Electrician
 - Inspector
- Project the onscreen presentation on a large screen.

Confirm Student Groupings

Connect with the teacher to confirm student groupings. The classroom educator knows which students should be paired with others.

SESSION ACTIVITY

20 minutes

Connect

Introductions

8 minutes

NOTE: If you are doing more than one session with the same group of students, skip this section and go to Submarine Discussion and Video.

Introduce yourself to students. **SLIDE 1**

Point to the image of a submarine on  Slide 1.

ASK: "Who knows what this is??"

Answer: It's a submarine - a special ship that goes under water.

SAY: "Today, we're going to explore the question: *Who makes submarines?*"

OPTIONAL: Share your submarine industry experience:

If you have worked in a maritime job, share a brief story about what you do or did, why you decided to do this kind of work, and what you enjoy most about it. Use short, clear sentences and examples students can picture.

Submarine Discussion and Video

5 minutes

Lead a brief discussion on why people work.

ASK: "Let's watch a short video together to learn more about who makes submarines and how."

Play the, *What Makes a Submarine Special?* video. **SLIDE #**

ASK: "What jobs help build a submarine?"

Answer: Welder, Electrician, Engineer, and Inspector.

ASK: "Why do you think teamwork is important when building something so big?"

Answer: Everyone has different jobs and they need each other to finish.

SAY: “Now we’re going to do a fun activity together to learn even more about submarines. Let’s get started!”



Activity: Build Your Own Submarine

ACTIVITY SETUP

2 minutes

REMINDER: Be sure to have the activity kits in place before starting the activity.

SAY: “Now that you’ve learned about who makes submarines, let’s play the Submarine Assembly Game!”

Divide students into groups of 4.

Ask a helper or another volunteer to hand out a blueprint and four color-coded cards to each group.

SAY: “Each group should have:”

- “One blueprint of your submarine.” (Hold up the blueprint)
- “Four different colored sheets of stickers.” (Hold up each set of stickers).
 - “Blue for the engineers.”
 - “Grey for the welders.”
 - “Yellow for the electricians.”
 - “And green for the inspectors.”
- “One Inspector’s Map of all the right sticker places with color coding.” (Hold up the map).

“Each of you should take one sheet of stickers.”

“Now, I’ll show you how to play the game. Follow along as I explain how it works.”

“Starting the Game”

SAY: “I am going to call on each of the jobs we learned about. So if you have blue stickers, you are the engineers, grey stickers, you are the welders, yellow stickers, you’re the electricians, and green stickers, you’re the inspectors.”

Hold up each sheet with the stickers on it as you reference it.

“Taking Your Turn”

SAY: “Each of your sheets have stickers on them that match a color on your blueprint. When I say your role, it will be your job to put your stickers on the colored spaces that match the color of your stickers”

“What to do?”

SAY: “First, let’s look at our blueprint. It looks like there’s a little more work to do.”


ASK: "Who knows what this is?"

Answer: The Engineer.

ASK: "Okay, Engineers, can you finish the blueprint by putting your stickers on the blank spaces. Be sure to make them fit inside the lines so our blueprint is easy to read."

Monitor each group until all the electricians have placed their stickers.

ASK: "Nice work, Electricians!"

 "Okay Inspectors, now it's time for you to work with your team to check to see that all the stickers are in the right places and that there are no stickers overlapping. Take a look at your Inspector's Map that shows where all the work has been done. Move any stickers that need to be fixed. Then, add your checkmarks to the blueprint to approve the build."

Monitor each group until all the inspectors have placed their stickers.

"Completing the Game"

SAY: "The game is complete when all the pieces are correctly placed:"

- "The blueprint is completed without gaps."
- "The hull pieces are connected without gaps."
- "All wires connected correctly to the control panel and monitor."
- "And, the Inspector verifies all placements and signs off: **"Launch Ready!"**"

"Great teamwork everyone! Our submarine is launch ready!"

Complete the Activity

10 minutes

1. Monitor time and give time warnings when appropriate.
2. Walk around the room observing if students need assistance.
3. Answer any questions or clarify instructions, as needed.
4. Request that students return to their seats if they move to complete the activity.
5. Collect all game materials.

[OPTIONAL] DIGITAL INTERACTIVE: SUBMARINE BUILDERS: MEET THE TEAM!

Launch the interactive and read each slide. Call students up to click on the hotspots or icons as you navigate through the experience. Click next to advance to the next screen.

Wrap-Up Discussion

1 minutes

SAY: “Great work today, everyone! You learned who makes submarines. Before we end, can anyone tell **me,**”

ASK: “Who creates the blueprint for the submarine design?”

Answer: The Engineer.

“Who connects the electrical systems?”

Answer: The Electrician.

“Who welds the seam in the hull?”

Answer: The Welder.

“Who checks to see that the submarine is ready to launch?”

Answer: The Inspector.

SAY: “Now, let’s get out your Learning Log.”

Highlight or celebrate students’ achievements in class.

SAY: “Thank you for letting me visit you today! You did a great job learning about submarines and their different parts.”

Collect all session materials.

TAKE HOME

1 minutes

Ask a helper or another volunteer to hand out one **Learning Log: 1** to each student.

SLIDE 9

SAY: “Take your Learning Log home and share with your family what you learned today. Show them the page in your workbook and tell them what job you tried in our submarine build game.”

Tell students to take their Learning Log home and ask their parent/caregiver to read them the question found on the back page.

Collect the Junior Achievement Maritime Banner and leave **them** with the teacher for use during the next session.

Optional: If this is the last session you’re teaching, feel free to ask students to sign the banner for you to keep.



We value your feedback! Please share your observations about student engagement and your experience with the JA curriculum.

<https://www.surveymonkey.com/r/K5Volunteer>