



## Grades K-5

**Common Core ELA:** literacy.

W.K.2, W.1.2, W.2.8, W.3.2.A, W.4.2.A, W.4.2.D,  
W.5.2.A, W.5.2.D  
SL.K.6

**Next Generation Science Standards:**

K-2-ETS1-2, 3-5-ETS1-1, 3-5-ETS1-2

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# Aquaculture Equipment

Developed by the Island Institute, Rockland, Maine  
Revised and formatted by Maine Agriculture in the Classroom

## Activity Description:

This activity utilizes a game to identify what is needed to grow seaweed. Students will design an aquaculture rig and compare to actual rigs used in kelp farming. Students will make diorama models or work together to make a rig that will be placed in the water. Students will also begin their Seaweed Journal.

## Learning Objectives:

Students will

- Describe the equipment used in a kelp longline
- Explain the purpose and use of equipment
- Use appropriate vocabulary for kelp aquaculture
- Record summary of activities, including drawings, in a Seaweed Journal (to be done following all activities).

## Materials:

- Rope
- Buoy
- Weights
- Materials
- Shoe boxes for dioramas
- Journals

## Teacher Preparation:

You may find it helpful to practice tying knots or assembling the rig ahead of time, or you may wish to wing it with your participants. It depends on your facilitation style! You will need to know how basic aquaculture rigs are assembled. Check out pages 5-10 of the Kelp Farming Manual that is listed on the Resources page to learn more.

## Procedure:

### Part I: Truth or Consequences

What equipment do we need to grow seaweed? This brief game familiarizes students with common pieces of equipment used in an aquaculture rig. It works best with at least two facilitators. Both facilitators make statements about how the same piece of equipment could be used. The statements can be as serious or as silly as you like, but one should be true and one should be false. For example, when describing a buoy, Instructor A might say, "Kelp farmers use this object to feed juvenile kelp in a nursery setting.", and Instructor B might say, "Kelp farmers use this object to mark their longlines, so boaters can see them." Students have to guess which instructor is telling the truth (in this case, Instructor B). Keep in mind that many pieces of equipment have multiple uses. Basic items to describe are buoys, rope, and weight. You can expand the activity to include other pieces of equipment if you want. You can also break the students into teams and make the game competitive by keeping track of which team guesses more answers correctly.



## Part II: Design and Aquaculture Rig

You can do this activity together on a white board or Smart board, or you can break the students into small groups, depending on age and ability to work independently. Students draw a diagram of what they think a kelp rig looks like. Some guiding questions are:

- How do you think we would grow seaweed?
- What kind of equipment do we have? (see above)
- What does kelp need to survive? Where can it find those things?

Discuss the diagram(s). See if you can think of ways to improve the design. What are some potential problems with the design and ways to fix those problems?

Optional: Show group a diagram of a real aquaculture rig. Compare it to the participants' diagram(s). What are the similarities and differences in design? Ask them if they have any new ideas for improving their design(s).

## Part III: Assemble the Rig

Depending on the availability of materials and whether or not you plan to put a working aquaculture rig in the water, you may choose to do this activity in either life-size or diorama format.

Students should use their final diagram(s) from Part II to

1. Put together a life-size or diorama version of an aquaculture rig. If you are planning to install a functioning rig as part of your program, this is a great opportunity for students to see how it looks and works before you are in an unfamiliar setting, such as a wharf. Once it is assembled, participants can take turns "pulling it out of the water" or "checking the kelp" by tugging the correct rope. I
2. If you are making a diorama version, have students label the parts of the rig with sticky notes to reinforce terms. Even if you are doing a life-size rig assembly, the diorama is a great way to review.

Some questions to ask at the end of the rig assembly

- Do the students have confidence in their rig?
- What might happen if a storm comes?
- Would they make any changes to their design now that they have worked with the materials?
- How did they work together as a team?



## Part IV: Seaweed Journals

At the end of each activity, students will make an entry into their Seaweed Journal. They will include a summary of the activity, what they learned, their opinion of the activity and any drawings and pictures that will help to illustrate their writing.

