



## Learning with Fresno Chaffee Zoo

### Sustainable Fisheries: Build a Better Net

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#### Objective

After this activity, students will show understanding of the challenge of balancing the needs of humans, other animals, and the environment.

#### Standards

MS-LS2-5: Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

#### Materials

“Build a Better Net” worksheet

#### Lesson

Based on what students learned about fishing methods during their visit to the zoo, students will attempt to design a new method for commercial fishing that eliminates some of the problems associated with bottom trawling nets.

Students will draw their net and describe how it works, including how feasible their fishing design is. A series of questions will lead them to consider environmental impacts and human factors in their design.

Once they have finished their design, students should be prepared to share their design with at least one other classmate and receive feedback on their design.

#### Extension Ideas

Have students share their designs with the class in a short presentation.

Research other real world fishing methods, and evaluate them using the same questions they used to evaluate their own design.

Have students, individually or in teams, build a prototype of their design, and figure out a way to test it.

# Build a Better Net

Conservationists, scientists, and fishers from all over the world have gathered to solve a serious problem. The bottom trawling nets many fishers use on their boats are causing damage to the ocean. They have given you the task of finding a better way to fish.

Your job is to find a fishing method that:

1. Does not damage the ocean floor,
2. Minimizes “bycatch”: the accidental trapping of animals fishers don’t want, like sea turtles and dolphins,
3. Is easy to use and affordable, so that fishers can easily replace their old equipment.

Your design does not have to be a net, but should be able to catch a large number of fish every day. At the end of your conference, you will share your ideas with at least one other person.

In the space below, write a description or draw a picture of your new method of fishing:

How does your invention prevent damage to the ocean floor? \_\_\_\_\_

\_\_\_\_\_

How does your invention avoid bycatch? \_\_\_\_\_

\_\_\_\_\_

Is your invention difficult for a crew of fishers to use? \_\_\_\_\_

How much do you think it would cost for a fisher to buy your invention? \_\_\_\_\_