

FDM Fisheries Diaries:

Reading comprehension, critical thinking, & mathematics!

Instructions: Read each diary entry, then use the information and visual aids provided to answer the questions at the end of each entry.

Commercial grouper fishery- Captain Fishtachio prepares for a trip:

October 15, 2020

Dear Diary,

Tomorrow I am leaving for another commercial fishing trip to catch grouper to sell to restaurants and people in the Tampa Bay area. To catch Red Grouper and Gag Grouper, I need to prepare my boat for our six-day fishing trip to the Florida Middle Grounds.

Before we leave, I will make sure to get everything that my crew and I need to live onboard my commercial fishing vessel for that whole time. I also will take all the gear and bait that we will need to catch Red Grouper and Gag Grouper to sell to the fish house when we return from sea. Sometimes I wish that we could sell our fish directly to the public ourselves, but I understand why we commercial fishermen are required to officially land our catch at fish houses. It's so darn important to keep track of all the fish being taken from Florida waters, so that there will always be fish for us (and our future generations) to catch each time we go to sea!

Captain's Log – Fishing Trip Preparation Notes:

- Food and water for me and my crew (there's three of us) during the hot six-day trip to sea:
 - 2 gallons of water per person per day
 - Breakfast, lunch, dinner, and snacks per person per day
 - Make sure our one and only air conditioner in the small sleeping cabin is working!
- Bait, gear, ice, and boat fuel needed to fish for our a six-day trip:
 - Gear Notes:
 - I want to try to catch about 1,250 groupers (around 5,000 pounds of fish)
 - To catch these groupers, we will use a bottom longline on this trip. The bottom longline will be made from a very long piece of monofilament line and has several parts. It will have one long piece of monofilament line with a float attached to one end and a weight attached to the other. The float will help me find it in the water after we set it. The weight will help the rest of

the longline stay on the bottom. After the weight, we will clip short pieces of monofilament line called "gangions" onto the long piece. Each short piece will have a hook at the end. We bait the hooks before they go into the water. We usually set out 500 hooks along the bottom of the ocean. The hooks are usually 2 meters apart, with 2 meters (without any hooks) at the beginning and end of the line.

- Bring 10,000 hooks for gangion replacements and repairs
- Ice Notes:
 - Need 400 kilograms of ice to keep catch fresh for the market
 - Cost of ice = \$0.35 per kilogram
- Fuel Notes:
 - Cost of diesel fuel = \$3.00 per gallon
 - The map I've glued in here shows the distances we will travel throughout the fishing trip.
 - My boat uses 1 gallon of fuel for every 3.3 miles we travel.



Answer the following questions to help Captain Fishtachio prepare for his trip:

1. How much total water will the crew need for the trip?
2. To catch the groupers the crew will need to bring about 10X as much bait as the number of fish they aim to catch. How much bait will the crew need to bring?
3. If bait costs \$25 for 200 pieces. How much will be the total cost of bait for the trip?
4. How many hooks will the crew need for the longline?
5. The hooks cost \$16.99 for a box of 250. In total, how much will hooks cost?
6. How far will the boat travel throughout the trip? Use a ruler and the scale on the map that Captain Fishtachio taped into his diary to help answer this question. The map provided shows where Captain Fishtachio and his crew will travel to go fishing. At the bottom of the map is a scale bar used to show how far things are on the map in miles (mi).

First, figure out what distance each marking on the scale bar represents. Second, use a ruler (or straight edge of some sort) to measure each red line that shows Captain Fishtachio's vessel path. Finally, figure out how many miles (mi) each leg of the trip was by comparing the length of the vessel path to the scale of the map. Write down the distance of each day's travel and add them up to find out how far the fishing vessel traveled throughout the whole trip.

7. How much will fuel cost?
8. What is the total cost of the Bait + Hooks + Fuel for this trip?
9. What distance will the longline cover along the bottom?
10. From the description given, draw a picture of what you think a longline would look like. Draw some fish on it as well.

Commercial grouper fishery- Captain Fishtachio returns from a trip:

October 21, 2020

Dear Diary,

Today we returned to the dock after a successful trip. I docked my boat at the fish house, and we unloaded our catch of 1089 Red Groupers and 148 Gag Groupers. The fish house gave us a price of \$3 per pound for Red Grouper and \$5 per pound for Gag Grouper. The average weight of the Red Grouper was 2.2 pounds and the average weight of the Gag Grouper was 4.7 pounds. Man oh man, am I happy, but tired – bet I'll sleep well tonight. Well time to go see my family – I sure missed them while we were gone last week!

Answer the following questions to help you and Captain Fishtachio reflect on his most recent fishing trip:

1. How many total fish were caught on the trip?
2. What percentage of the fish were Red Grouper? What percentage were Gag Grouper?
3. How much money did the Captain collect from selling his catch?
4. Did the Captain make more than he spent on the trip? Explain your answer.
5. How much did the Captain make after paying for all of his expenses (profit)?
6. Draw a picture of the fishing boat as you imagine it based on the descriptions you were given.
7. Name one thing you learned about commercial fishing.

Recreational Fisheries – Amber Jackovich goes fishing inshore:

October 15, 2020

Dear Diary,

I sure do love fishing – fishing is my soul! There's nothing better to me than catching fish and releasing them. I can't decide what I like more: the fight reeling them in or the joy of seeing the fish swim away healthy and happy to be caught again another day?! But I do also enjoy bringing fish home for dinner sometimes. My family sure likes to eat fish, and I really feel proud when I walk in the door carrying dinner for everyone.

When I go out fishing, I often fish in the shallow seagrass beds. I usually target Red Drum, Spotted Seatrout, and Snook. But of course, there are a lot of times during the year when I can't keep any of those species, so I have to try to catch other species to keep, like Gray Snapper and Sheepshead, when I want to bring home dinner.

Today I went fishing, I had to get all of my gear together, put gas in in boat, and get some bait. I bought a pack of circle hooks that cost \$3.25, some new fishing line that cost \$4.76, and I splurged on a new fishing rod that cost \$132. I pulled up to the gas station and filled up my gas tank. The cost of the gas was \$3.04 per gallon.

Once I got out onto the water, I threw my cast net a bunch of times into the seagrass to catch bait. Before my first toss of the net, I turned on the water to fill up the bait well, so I'd be able to keep my bait alive once I hauled in my cast net. I threw my cast net 5 times and was able to fill my bait well with 247 small, silver bait fish.

Then while I was out fishing, I caught a lot of my favorite species! I measured them on the measuring tape I brought and then read the fishing regulations to figure out if they were the right size to take home. Boy oh boy was it a great day, but now it's time for me to hit the hay!

Answer the questions below to learn more about Amber's day fishing inshore:

*Use the regulations chart to figure out what fish you caught and whether it is the right size to keep.
<https://myfwc.com/media/20441/quickchart.pdf>

1. If there were 32 hooks in the pack of circle hooks, how much did each one cost?
2. How much did the angler spend total on fishing supplies? (include 6% state sales tax)
3. If the angler bought 10.7 gallons of gas, how much did he pay for gas?
4. What is the average (mean) number of baitfish per throw of the cast net?
5. Use the regulations chart and fish the cut-outs to figure out whether you can keep the fish that you caught on hook-and-line
6. Explore the regulations chart some more. Find three additional species you think it might be fun to catch. Write down the minimum and/or maximum size for the species and draw a picture of that species.

Teacher notes: Print out the Florida recreational fishing regulations for students to share (or have them bring them up on their own computer).

Use cut-outs or projections of the following fish pictures (Resize some if you can and print them in several sizes) measure them using a ruler or yard stick and have students use the regulations to figure out if they are allowed to keep the fish they “catch.”



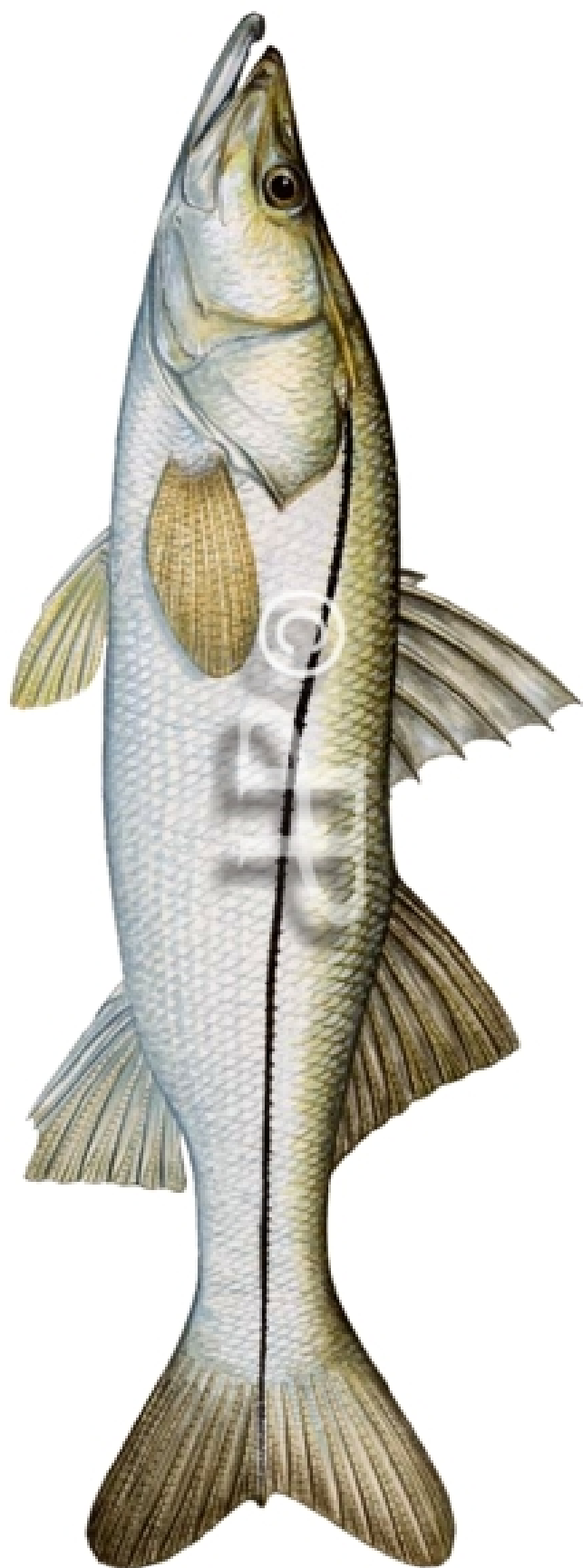
RED DRUM (*Sciaenops ocellatus*)

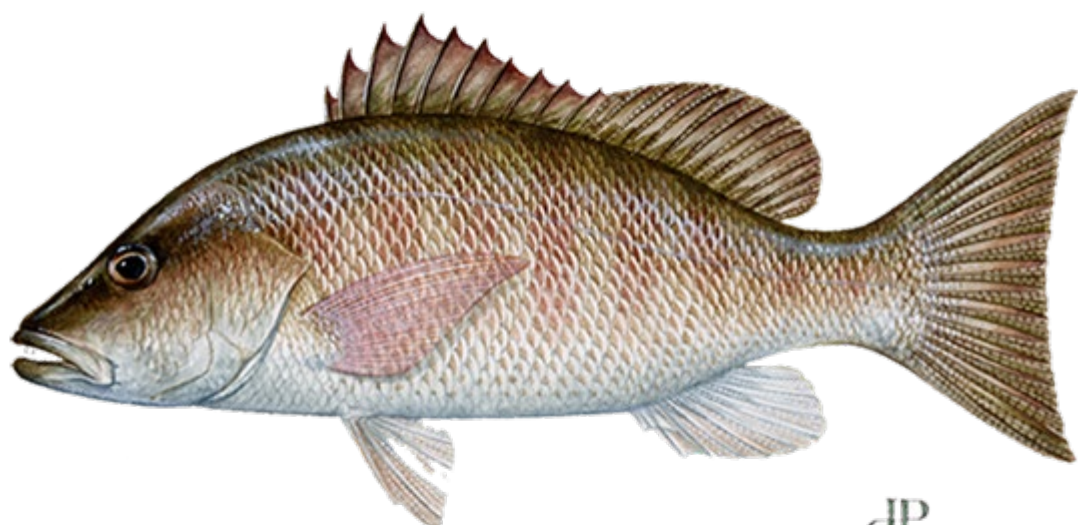
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