

## THE STORY PROJECT LEARNING EXPERIENCE – AN OVERVIEW

### Lesson by Heather Herd

Students learn to read through the power of story and great literature. This math lesson uses the power of an inspiring book called *Grayson*, by Lynne Cox, to help students learn math. It's got classic elements that can captivate students during a read aloud, while it follows the path of the "hero's journey".

The story is set in the Pacific Ocean just after dawn. At 17 years old, Lynne completes her 3-hour workout in 55-degree water when she discovers that a baby gray whale has been following her. Apparently, fishermen spotted a mama whale at a nearby offshore oilrig. Should Lynne swim out to the oilrig with the baby whale, or should she swim to shore inducing the baby to follow her and possibly be in danger? What would you do?

The major difference between this lesson and one for language arts is that excerpts are read with the intention of engaging students in a complex math question. Read-alouds are kept short and poignant. The goal is not to read the story completely, but rather to touchdown into the true story of a young woman's journey as she perseveres in reuniting a baby whale with its mother.

Between read-alouds, students are given data structures which help them predict the likelihood of her survival. Students are driven by a sense of urgency as they synthesize information from a **scale map, cold-water survival charts, and an article about swimmer's endurance**. The students themselves persevere at organizing data into new formats: numbers lines, function tables, and on coordinate planes.

This project is a learning motif that appeals to all learners, since it is introduced as a story and not a complex math problem. The sense of emotional urgency often causes students to become less self-conscious about their work, while more inclined to share their thinking.

Note: any reference to handouts are in bold, all handouts can be found at the end of this document

## THE STORY PROJECT IMMERSION

Each day, prepare to open and close your lesson with an excerpt from Grayson by Lynne Cox (provided with this plan). Note: Lynne Cox has given permission for teachers to use her book for this math story project.

Take your students “off-guard” by starting class with the question, “Mathematicians – What would you do?” Then, book-in-hand, begin telling your story as though you are the swimmer. Keeping your students immersed and engaged in the story will ultimately drive them to pursue the math standards you are addressing.

Here are some elements that can support student engagement and make this an extraordinary math learning experience for your students.

1. Wear a bathing cap, goggles and sweat suit to class each day. This costume is the brand for your story project.
2. Create an ocean scene in your classroom, complete with a baby whale. During the week prior to the story project, ask students to practice precision with measurement. They can either research or be provided with the names and dimensions of sea animals that appear in the story (list included here). Using bulletin board paper, have students measure, draw and cutout these animals to create an ocean scene. But be careful to keep your story project a surprise!
3. Accompany your readings with simple slide show images that stimulate your students’ visualization of the story.

*Note: I also believe that the simple reading aloud of these excerpts can serve as enough to engage students in the data analysis each day.*

## PREREQUISITE KNOWLEDGE

- Some exposure to benchmark fractions  $\frac{1}{4}$  and  $\frac{1}{2}$
- Familiarity with measuring inches
- The lesson is suited for 5th grade. It holds value as a project for grades 6th and higher when activating higher order thinking skills and reviewing fundamental concepts.

## COMMON CORE STANDARDS ADDRESSED

### Common Core Math Practice Standard # 1:

Make sense of data and persevere in problem solving.

### Common Core Math Practice Standard # 3:

Construct viable arguments and critique the reasoning of others.

### Common Core Standard: (Concept) 5NF2

Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent to the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

### Common Core Standard: (Concept) 5OA3

Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns and graph the ordered pairs on a coordinate plane.

## MATERIALS AND PREPARATION

- Daily “Intro” and “Closure” Excerpts from Grayson, as provided. They can be cut-down to fit into a paperback. If you use the Grayson paperback, I recommend keeping the book title blocked until you finish the project.

- Initial Immersion Problem Statement
- Group Brainstorm Sheet
- Scale Map
- Swimmer’s Endurance article
- Cold Water Survival Charts
- Current Map
- Needed for students: graph paper and ruler
- If possible, a document camera for student work demonstration

## SPECIFICATIONS FOR EACH LESSON

To promote practice of the Common Core Practice #1: Make sense of data and persevere in problem solving, I recommend the following progression:

1. Read aloud story immersion (no more than 10 minutes).
2. Begin with student grapple-time for each data structure. During grapple-time, students share ideas and work cooperatively.
3. Teacher coaches small groups and individuals during grapple-time.
4. Teacher prompts class to mark-up the data and make their thinking visible.
5. Students share analysis of the data during whole class share (if possible, over a document camera).
6. Teacher provides instructional input when needed.
7. Finish with read-aloud closure of 5 minutes or less.

## LESSON SEQUENCE

### The Immersion

#### Day 1 - Story Immersion and Request for Data

*In this part of the story, the swimmer discovers she has been followed by a baby whale, who will surely become beached if she gets out after her workout. A mama whale has been spotted by fisherman near an offshore oilrig. Can she escort the baby out to the oilrig?*

1. Read the Day 1 "Intro" story excerpt.
2. Ask students, "What Would You Do?"
3. Prompt students to read the **Problem Statement** and spend a few minutes writing about what they would do if they were the swimmer.
4. Provide students with the **Brainstorm Sheet**.
5. Ask partners/groups to brainstorm together what information is needed.
6. Whole class questions are shared and recorded.
7. Questions to highlight:
  - How far out is the oilrig?
  - How long can the swimmer survive in this cold water?
  - Will the swimmer have the energy to swim out to the oilrig?
  - Students tend to ask if a boat can be brought in for the swimmer. Caution them that this idea might scare the baby away.
8. Let students know that you will provide them with the data needed to answer these questions tomorrow, and that you will continue to tell them the story.
9. Read the Day 1 "Closure" story excerpt.

#### Day 2+ - The Journey - The Swim out to the Oilrig Analysis of the Data

*In this part of the story, the swimmer and the whale proceed to the oilrig. Lynne Cox's words evoke the risk and the adventure of this experience as they encounter a tremendous variety of sea animals. The whale disappears for brief periods, causing her to question her choice to swim to the oilrig alone. We become increasingly concerned for her wellbeing. The question remains, "Can the swimmer survive this journey?"*

The following is a package of lessons that you will want to schedule according to the needs of your students. As they make sense of each piece of data, there is an increasing sense of complexity. If this kind of analysis is new to them, I suggest reviewing 1 data sheet per lesson.

If they are more practiced with making sense of data, you may want to challenge your students to review and synthesize more than one piece of data during each lesson. The Journey reading excerpts are divided into 4 days, during which you can plan their analysis of the data sheets. The excerpts can be modified to adapt to your plan.

Throughout this process, students are asked to organize data in formats that serve to target 5th grade Common Core Standards. These lessons can be used to Introduce, Develop, or Assess Mastery of these learning goals.

### Learning Goals:

- To measure distance on a map using a scale.
- To add the benchmark fractions of  $\frac{1}{2}$  and  $\frac{1}{4}$ .
- To create a number line with the tick marks for benchmark fractions  $\frac{1}{4}$  and  $\frac{1}{2}$  between whole numbers.
- To model adding and subtracting fractions on a number line.
- To develop a pattern of corresponding terms on a function table.
- To form ordered pairs of corresponding terms from a table, and then plot them on one coordinate plane for the purpose of comparing them.

### Scale Map Activity

1. Students measure to determine the distance to the oilrig.
2. Students draw a number line on the map between the pier and the oilrig, labeled with inches and miles.

### Swimmer's Endurance Article

1. Students read the article to further their understanding of a long distance swimmer's endurance.
2. Embedded in this article, is the swimmer's probable rate: 2 miles per hour.
3. With this information, students return to the **Scale Map** to add hours to their number line, and then visualize how long it takes for her to swim out to the oilrig.
4. Students then apply her rate of two miles per hour to a function table with the rule of multiplying by 2. They can now estimate the length of her journey to the oilrig and back.
5. Students form ordered pairs from these corresponding terms and plot them on a coordinate plane. Be aware that the lines on this grid will need to incorporate enough space for plotting fractions during the next phase of the story.

### Cold Water Survival Charts

*Note: The reading excerpts do not reveal whether our swimmer is wearing a wetsuit.*

1. During analysis of these charts, students will:
  - Infer that our swimmer must be wearing a wetsuit.
  - Locate the zone of danger for hypothermia she is in at this point of the story.

## The Return – The Journey Back to the Pier

With no sign of the mama whale, the swimmer decides to return to the pier with the baby whale. During this return, the tide becomes rough and the current moves against her at  $\frac{3}{4}$  of a knot. For the sake of the lesson, you can simply describe a knot as close to a mile. What happens next is a change from the actual account by Lynne Cox (teacher/artistic liberties). Lifeguards visit her and suggest she get in their boat to return to shore. She decides to turn them down.

### Learning Goals:

- To form ordered pairs of corresponding terms from two function tables, and then plot them on one coordinate plane for the purpose of comparing them.
- To add mixed numbers.
- To model subtracting fractions on a number line.

### Optional Project during The Return– Presenting Viable Arguments

This is a natural place for students to draw conclusions from the data with a short project. At this point, ask students to present a viable argument about whether the swimmer should get in the lifeboat with the lifeguards, or whether she should stay with the whale. Alone, or in small groups, have students decide what they think the swimmer should do. They then create posters that advertise their position. They need to provide 3 pieces of evidence from the data to support their viewpoint.

### Current Map Activity

1. This graphic accompanies the excerpt describing the current as moving  $\frac{3}{4}$  of a knot against the swimmer as she swims back to the pier. The current against her changes her rate to  $1\frac{1}{4}$  of a mile per hour.
2. Based on this altered rate, students layout a new pattern on a function table. This will include practice in adding mixed numbers.
3. The change in rate can be modeled on a number line. To discern her new rate, students model subtracting  $\frac{3}{4}$  from 2. Some of them will conclude that her new rate is  $1\frac{1}{4}$  mile per hour.
4. Finally, students return to the original coordinate plane where they plotted ordered pairs from the function table, based upon her standard rate. They now plot the ordered pairs from her new rate and compare them. This is the final learning activity of this project.

### Celebration – Reunion with Mother Whale

*As Lynne swims against the current, the baby stays close beside her. Amazingly, Lynne is carried along by Grayson's slipstream – which is how Grayson himself travels with his mother. The story comes to a close when Lynne and the baby are waiting helplessly below a now crowded pier of onlookers. The Mother Whale appears on the horizon! As she collects her son, she seems to share a personal thank you with Lynne in a very moving close encounter. Mama and baby whale return to their migratory route.*

It is a great idea to spend a class period reading aloud the conclusion and celebrating the accomplishments of this project. Students can compile all of their data analyses into a booklet, adding illustrations and writings as they wish.

## OPTIONAL ADDITIONS

### 1. Extensions

- In the book Grayson, it is stated that there are 7 oilrigs offshore from Seal Beach. Extension questions can be created based upon another oilrig farther out. Connected research projects can be assigned related to whale biology; environmental issues concerning them; migration; social issues connected to their Baja birthing grounds; and other survival stories.

### 2. Human-sized **Cold Water Survival Chart**

- Using painters' tape, create a human-sized floor grid and chart to represent the Cold Water Survival Chart
- Pose several scenarios for the swimmer wherein the water is a certain temperature after a specific period of immersion. Ask students in small groups to stand where the swimmer would be on the graph or grid.

### 3. Water Samples

- You can create samplings of water at different temperatures, (especially 55 degrees) for students to measure using thermometers, and for hand-dipping/testing.

## ASSESSMENT

### Math Practices

A "What Would You Do Rubric" can be used to assess students on Common Core Practice #1 and #3. Student understanding of data, as demonstrated on the data sheets/number lines/ function tables/ and coordinate plane are evaluated, as are Perseverance and Constructing Viable Arguments.



NAME: \_\_\_\_\_

# WHAT WOULD YOU DO?

## Survival Math

### RUBRIC FOR DEMONSTRATION OF GROWTH IN THE MATHEMATICAL PRACTICES

Score:	1	2	3	4
<p>MAKING SENSE OF THE DATA:  <u>Understanding the data/</u>  <u>Demonstrating that you are understanding the data</u></p>	<p>On the data sheets/ number lines/ function tables/ and coordinate planes provided for problem solving, the student's understanding was <u>not demonstrated enough</u> to show the student's understanding.</p>	<p>On the data sheets/ number lines/ function tables/ and coordinate planes provided for problem solving, the student's understanding demonstrated <u>some</u> of the time.</p>	<p>On the data sheets/ number lines/ function tables/ and coordinate planes provided for problem solving, the student's understanding was demonstrated <u>most</u> of the time.</p>	<p>On the data sheets/ number lines/ function tables/ and coordinate planes provided for problem solving, the student demonstrated full understanding.</p>
<p>PERSEVERING IN PROBLEM SOLVING</p>	<p>There was evidence in the student's daily problem solving that she or he gave up on completing the process with her/his best engagement.</p>	<p>There was evidence in some of the student's daily problem solving that she or he persisted in completing the process with her/his best engagement.</p>	<p>There was evidence in the student's daily problem solving that most of the time, she or he persisted in completing the process with her/his best engagement.</p>	<p>There was evidence in the student's daily problem solving that she or he never gave up on completing the process with her/his best engagement.</p>
<p>CONSTRUCTING VIABLE ARGUMENTS:  <u>Providing Proof</u></p>	<p>When explaining his or her claims, solutions, or decisions, the student <u>did not provide enough evidence</u> from the data.</p>	<p>When explaining his or her claims, solutions, or decisions, the student <u>provided evidence</u> from the data <u>some</u> of the time.</p>	<p>When explaining his or her claims, solutions, or decisions, the student <u>provided evidence</u> from the data as support <u>most</u> of the time.</p>	<p>When explaining his or her claims, solutions, or decisions, the student <u>always provided evidence</u> from the data as support.</p>

# Sea Animals for Ocean Scene

GRAY WHALE

HALIBUT

SUNFISH/MOLA MOLA

GARIBALDI

PURPLE JELLYFISH

PACIFIC WHITE SIDED DOLPHIN

MOON JELLYFISH

BAT RAY

COMMON DOLPHIN

PELICAN

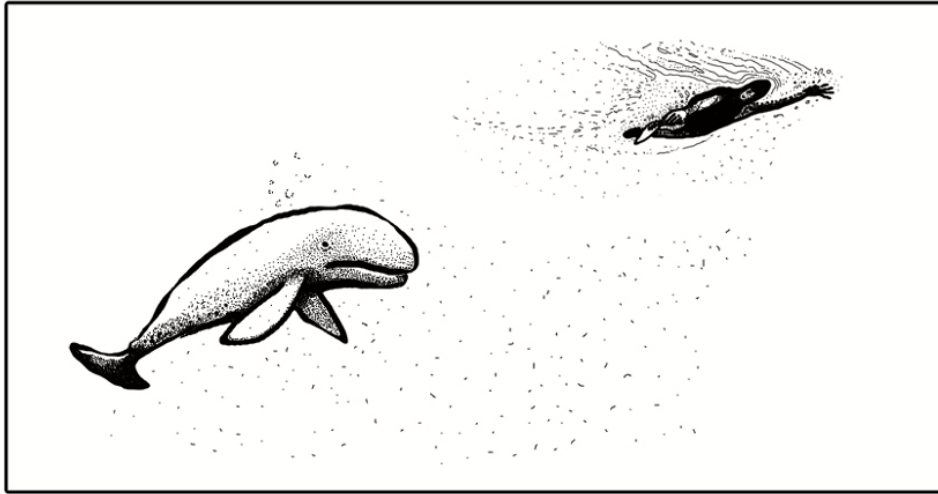
GREAT WHITE SHARK

SEA TURTLES

SEA BASS

# WHAT WOULD YOU DO?

## Survival Math



It's early March. After a 3-hour workout in 55-degree ocean water, a 17 year-old long-distance swimmer named Lynne Cox is ready to swim to shore. She has felt a strange and powerful force around her, and the laps have been really difficult. So she is not surprised when a friend waves anxiously from the pier, shouting, "A baby whale has been following you all morning!" If she swims to the beach, the baby whale will likely follow her and be in danger of becoming beached. If she stays in the water, Lynne may be able to help the baby by leading him to an offshore oilrig where fishermen have spotted the mother whale.

Lynne is cold, exhausted, and hungry. But most likely, so is the lost baby whale. What would you do?

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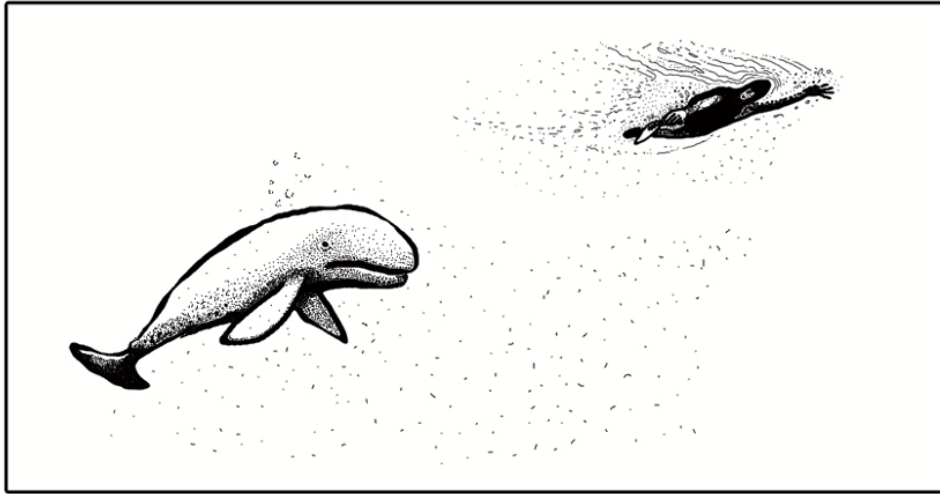
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# WHAT WOULD YOU DO?

## Survival Math

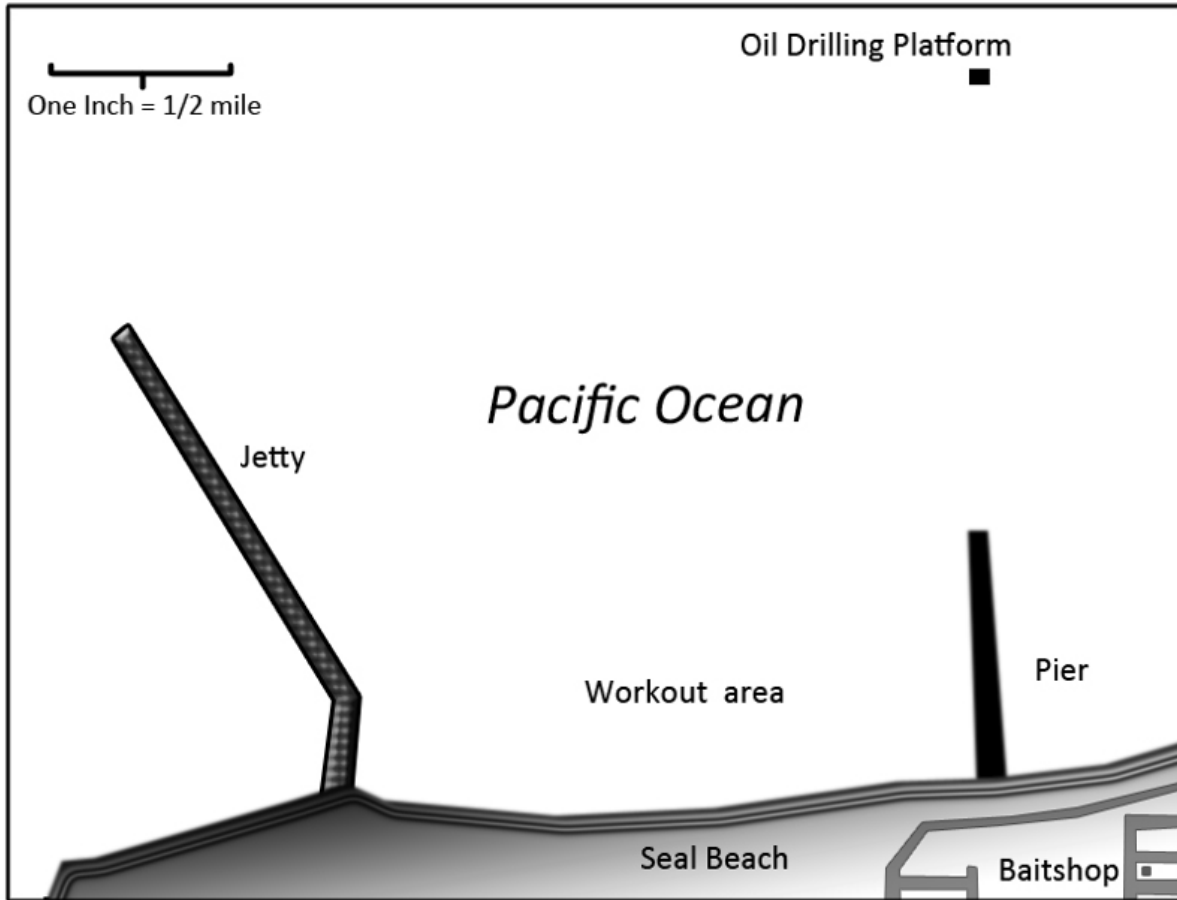


With your team, brainstorm and record what questions you have. What information do you need in order to answer the question?

“Lynne is cold, exhausted, and hungry. But most likely, so is the lost baby whale.  
What would you do?”

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_
6. \_\_\_\_\_  
\_\_\_\_\_

# Scale Map





### "A SWIMMER'S ENDURANCE"

What kind of exercise is swimming? Is it like walking or running?

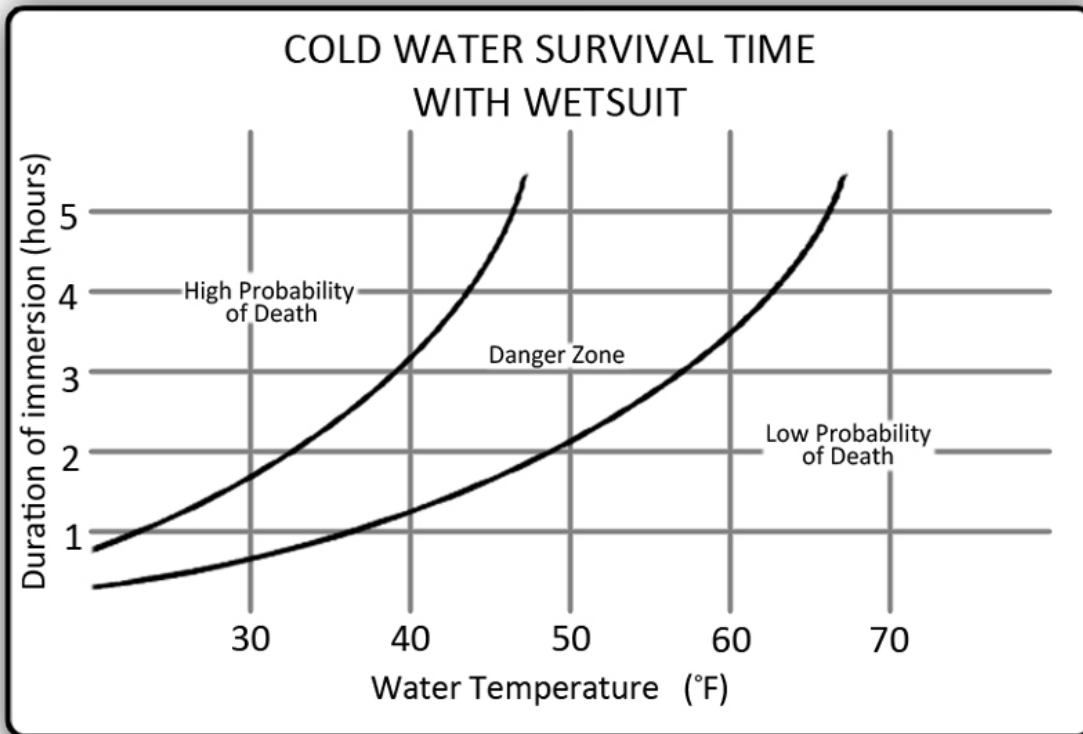
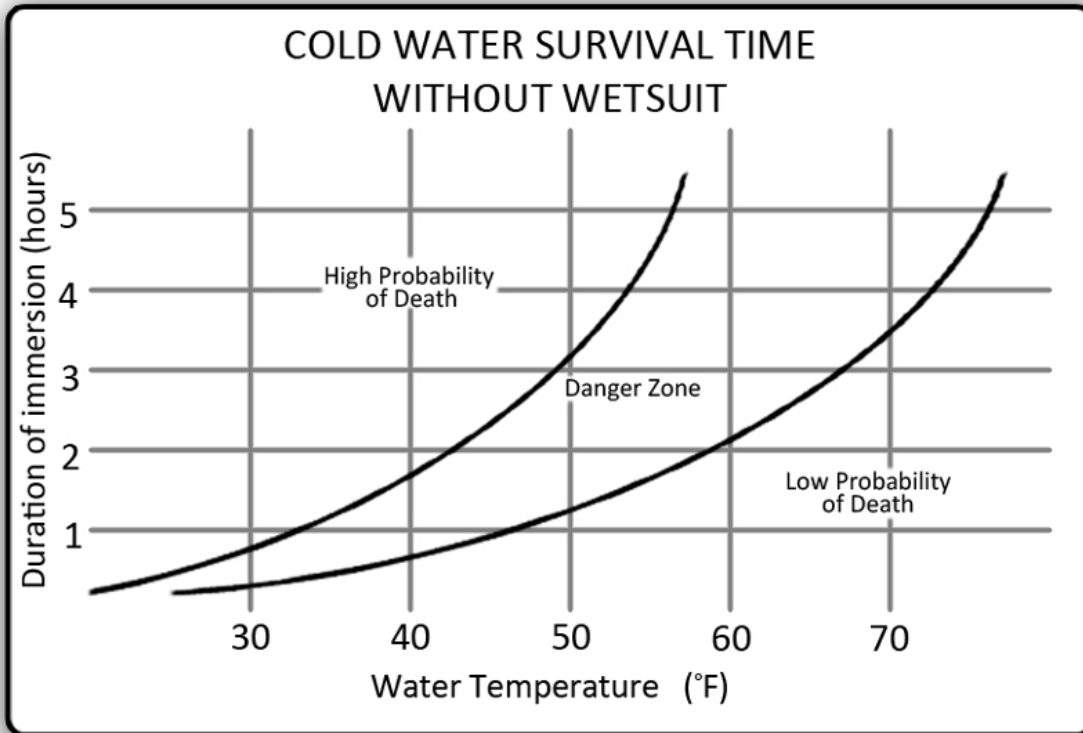
Swimming is like a workout you would get if you were running or doing an aerobic class like Zumba, and at the same time, lifting weights. That is because you are moving against the resistance of the water. (*Resistance is any force that makes it harder for you to move.*) Swimming is like weight lifting because water is equal to, or more than, 10 times the resistance of air.

How long can you keep swimming before you become tired and can't go on?  
How long can you endure?

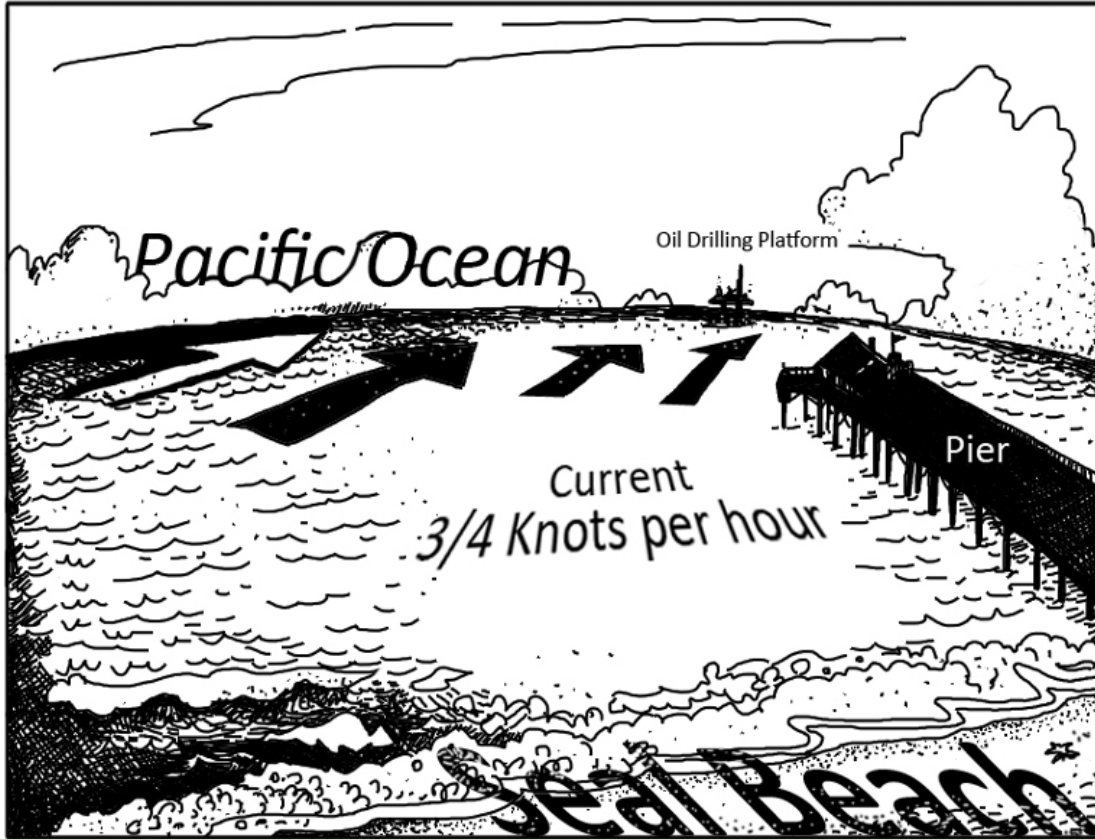
*Endurance is how long someone can repeat an exercise before they become fatigued and need food, and most likely rest. A swimmer on a team uses a lot of energy in a short amount of time in order to be the fastest. Because of this, he or she becomes fatigued sooner than a long-distance swimmer.*

The long-distance swimmer keeps a slower pace in order to save energy for longer periods of time. Therefore, a long-distance swimmer may have more endurance than someone working-out on a swim team. An excellent long-distance swimmer can swim 2 miles in one hour. Their workouts can be anything from three to twelve miles long, depending on what they are training for. A long-distance swimmer often has a goal to cross a famous channel like the English Channel (22.5 miles across) or Cook's Channel in New Zealand (16 miles across).

Channel swimmers often swim alone, but alongside a boat carrying food and hot drinks for the swimmer to consume every 20 or 30 minutes. The boat also has electronic devices and navigators help the swimmer take the easiest path through surface currents and tides. Often, the boats block the wind and the surface chop for the swimmer.



# Currents Map





Story Telling Grayson  
By Lynne Cox

Day 1 Intro

There's something frightening, and magical, about being on the ocean, moving between the heavens and the earth, knowing that you can encounter anything on your journey.

The stars had set. The sea and sky were inky black, so black I could not see my hands pulling water in front of my face, so black there was no separation between the sea and the sky. They melted together.

It was early March and I was seventeen years old swimming two hundred yards offshore, outside the line of breaking waves off Seal Beach, California. The water was chilly, fifty-five degrees and as smooth as black ice.

Usually my morning workouts started a 6am, but on this day, I wanted to finish early, get home, complete my homework, and spend the day with friends, so I had begun at 5 am.

As I swam, all I heard were the waves, rising and tumbling onto shore, the smooth rhythm of my hands splashing into the water, the breaths that I drew into my mouth and lungs, and the long gurgling of silvery bubbles rolling slowly into the sea. I slid into pace, and I felt the water below me shudder.

It wasn't a rogue wave or a current. It felt like something else.

It was moving closer. The water was shaking harder and buckling below me.

All at once I felt very small and very alone in the deep dark sea.

Then I heard a sound. I thought it was coming from the ocean's depths.

At first it seemed to be a whisper, then it grew louder, steadily, like someone trying to shout for help but unable to get the words out. I kept swimming and trying to figure out what was happening.

The sound changed. It became stranger, like the end of a scream.

I was being churned up and down as if I was swimming through a giant washing machine. The water shifted, and I was riding on the top of a massive bubble. It was moving directly up from below, putting out a high-energy vibration. I felt like there was a spaceship moving right below me. I had never felt anything this big in the water before.

Reaching the pier, I rolled over on my back, sucking air. I swam backstroke slowly, trying to catch my breath. I was spent, cooling down, sore, tired, hungry and eager to get home and finish my homework. I saw Steve standing outside the bait shop. He was an old friend, a man in his sixties who ran the bait shop. Steve made a point of checking on me while I was swimming, especially in the darkness of early morning.

Steve was jumping up and down, rapidly waving his dark blue baseball cap and shouting. The morning breeze was tearing his words apart and carrying them away from me.

Cupping my ear, I gestured I couldn't hear him.

Quickly he pointed to something behind me.

Spinning halfway around I felt the water. Something was swimming under me. Was it a white shark?

Without hesitating, I swam for shore. Glancing over my right shoulder, I saw that Steve was vigorously shaking his head.

I stopped. I didn't want to. I was confused. What was he trying to tell me?

He cupped his hands around his mouth and shouted, "You can't swim to shore!"

"Why not?" I was baffled and I wanted to get out so badly.

"That's a baby whale following you. He's been swimming with you for the last mile. If you swim into shore he'll follow you. He'll run aground. The weight of his body on the beach will collapse his lungs and he will die."

"One of the fisherman on an offshore boat thought he had sighted the mother whale near one of the oil rigs."

## Day 2 Intro

I wanted to reassure him, so I swam closer.

The baby whale rolled over onto his stomach and the wave from his movement pushed me backward.

He looked into my eyes as if he was trying to understand who I was and what I was doing there.

I was wondering the same thing about him and I had to ask in a soft voice so I wouldn't scare him, "What happened to you, little whale? Where is your mother? How did you get lost?"

If only I could speak his language. If only I could find out what had happened. Most of all, I wanted to be able to tell him not to worry, that I would try to help. Two hearts in pursuit of the same thing were far stronger than one alone.

The baby whale knew this even though we couldn't speak. Something had brought us together; something much bigger than to the two of us..

The whale dove and I pressed my face deep into the water so I could watch him.

He was close, five feet from me.

Holding as still as I could, I floated on my stomach. He didn't come any closer. He was so big. He seemed to sense that I was a little unsure of him. It surprised me that he didn't seem the least afraid of me.

He floated below the surface.

How do you do that? I wondered. I tried but couldn't stay at his level. I popped back to the surface like a rubber duck.

He seemed to be listening to something, perhaps to some other whales somewhere nearby. Whales communicate at some frequencies that are too low for human beings to hear.

The baby whale inched closer.

"Don't worry, little one, we'll help you," I said underwater in a weird watery and garbled voice.

Lifting my head, I took a breath and looked up for Steve on the pier.

He was leaning against the railing, shielding his light blue eyes with his hand, protecting them from the searing white sunlight.

He dropped his hand and said, "I don't see any sign of her."

"How do you think he got lost?"

"He is pretty young. He's between three and four months old. He may not have been listening to his mother."

Steve scanned the water again, swiveling his head from one side to the other.

At that moment, I realized how difficult it would be to find a whale in the ocean. Even something so big was actually so little in the vast sea.

The baby whale looked up at me with his big brown doelike eyes. I felt something like a tingle, like the sound waves emitted by a wind instrument but without any music. I wondered if he was trying to communicate with me. Did he have senses that could tell him where he was? Could he use them to read what was in someone's heart?

"Do you think his mother's somewhere nearby?" I asked Steve.

"I do. I don't think she abandoned him. He looks healthy and seems to be swimming well. He's breathing without any difficulty. Something may have happened to his mother. She may have been injured."

I didn't say anything. I didn't want to imagine that I wanted to believe that she was okay and we would be able to find her.

I needed to improvise, to stay in the moment, to remain positive, because I thought the baby whale would pick up on my energy. Maybe that's how he found me in the first place.

Steve understood this. He said, "the baby's mother has to be searching for him. She's probably calling him right now."

A whale's vocalizations travel great distances under the water. She may be calling out his name, if whales have names. And I bet she's very worried."

Again, Steve said that one of the fishermen on a boat thought he had sighted the mother whale near the offshore oil rig.

### Day 2 Closure

Steve leaned over the railing and shouted to me that we had to try something different. This swimming back and forth along the pier and shore was wasting precious time. The longer the baby whale was separated from his mother, the less chance he had of surviving. If we didn't find her, either he would starve to death or, without her protection, he could easily be eaten by a white shark or a killer whale.

### Day 3 Intro

I had swum out to the oilrig only once before, during an open-water race, but at that time, I had had a paddler with me on a long paddleboard. He had helped me stay on course, and he had watched for danger.

The baby whale turned and started to head offshore. He looked over at me as if to say, Please come swim with me.

"I'm going to swim with him," I shouted to Steve.

I don't like the idea of you being out there alone," he said.

I was afraid. But I knew I had to. Sometimes I just did things because I thought I could and because if I didn't, an opportunity to learn something, grow, and reach farther would be lost.

There wasn't time for a long discussion. The baby whale was turning out toward the open sea, and I was afraid that if he left now without me, we would never know if he found his mother or what happened to him. Maybe my presence could even make a difference.

"I'll be careful. Besides, I'll be swimming with the gray's son. I'll be swimming with Grayson," I said, and smiled with more confidence than I really felt.

Steve smiled. "Grayson, that fits. He's grace in the water and he's the gray's son."

But then Steve's tone grew suddenly serious, and he advised me: "Lift your head up often and look all the way around you. If a boat approaches, You move out of the way. Don't count on them seeing you."

I swam with Grayson one hundred yards off the pier, two hundred yards, three hundred, four hundred, and on a breath I looked back over my right shoulder. The pier and the people on it were becoming smaller and smaller. We continued swimming near each other. Grayson led the way. He swam directly toward the oil rig and I followed in his wake. A couple of times he slowed down and stopped dead in the water. He seemed restless and sort of agitated. He probably hadn't eaten for at least a few hours. His energy level had to be dropping.

The sky was changing: Thin clouds were masking the sun and the water was becoming a dull opaque blue. The water temperature was dropping too. It must have been about fifty-three degrees. I grew increasingly uncomfortable.

Unconsciously, I turned and looked at my feet. The tiny footprints they made when I kicked dissolved instantly. I shuddered.

There weren't any breakwaters or jetties to buffer the strength of the current. Using the oil rig as a reference point, I could tell that we were drifting to the north at about a knot, a little faster than one mile, per hour.

The oil rig that had been directly in front of us was sliding to our left. And the ocean's surface was cracking with a northwest breeze. The sea was rising into waves a foot high.

Grayson was swimming hard against the resistance of the waves. He was breathing more rapidly, his poofing sounds were more frequent. He seemed to be very stressed. It seemed as if he couldn't decide what to do. Then he came to a complete halt.

He hung on the water's surface. His eyes opened wider than before.

"What is it Grayson?"

He turned toward me, and he tilted his head and looked at me with one eye.

He seemed to be waiting for me to follow him.

I really didn't like being so far from shore. But I swam toward Grayson anyway, with my head up.

"Come on, Grayson. Let's swim out there and see if we can find your mother," I said, encouraging him, knowing he couldn't understand a single word, but hoping he would somehow understand the thought. How does a whale communicate love, hope, fear, or joy?

### Day 3 Closure

There was something in the distance, floating on the water's surface.

We moved closer. It looked like white lily pads were floating on the water. We swam nearer and the lily pads grew larger. They were ovals three to four feet in diameter with scallop-shaped tails. The ovals were different colors-gray, olive, black-and they fluttered.

They were giant fish, giant ocean sunfish called Mola mola, basking on the ocean's surface, absorbing the sun's warmth through their skin.

They shimmered silver, and as the light shifted they became luminous like the moon on a clear black night. They had small dark eyes and light pink oval mouths attached to a snout. They were the heaviest bony fish in the world, weighing up to five thousand pounds. One sunfish was swimming. He was waving his top fin and bottom fin, using his pectoral fins as stabilizers and his tail fin as a rudder. And he was spitting water out of his mouth to help steer.

He dove deeper and deeper and deeper in to a cold current to cool off, and when he resurfaced, he rolled over to let the sun warm the other side of his body.

Grayson maneuvered between the shimmering sunfish; they seemed oblivious to our intrusion. And we continued heading toward the oil rig.

I felt very exposed; my legs were dangling like worms in the water.

Four hundred yards from the oil rig's base, we entered a sea garden. It was filled with long ribbons of golden-brown kelp which smoothed the waves and we were able to swim to within two hundred yards of the rig.

The oil rig rose above our heads like a mini—Eiffel Tower with metal cranes and drilling equipment that towered twenty feet or more above our heads. These were connected to a large metal platform and the platform was attached to multiple metal stilts that had been drilled deep into the ocean floor.

The oil rig was an amazing and yet ominous structure. As the rig pumped oil out of the ocean floor, I could feel its energy emanating through the water. It felt like being in New York City. Men who worked on the oil rigs had told me that they noticed the energy attracted fish into the area and lulled them to a state of inactivity.

Grayson swam past schools of sunfish clustered together near the base of the rig and he didn't even notice the green sea turtles paddling by, like a green turtle swim team. They all pushed off near the oil rig and swam together as if they were setting off on a series of sprints.

Slowly, a school of sea bass swam past, moving like a shimmering curtain of silver blue.

Grayson took a big breath and dove five feet down, past a cluster of clear moon jellies. They were beautifully transparent except for white circles on top of their domes.

He swam by purple jellyfish that were larger, like large Jell-O salad molds, and they were beautiful, graceful swimmers. They moved by contracting and expanding their domes, like opening and closing umbrellas.

Their long, flowing tentacles stretched up to six feet beneath them. I hoped they would stay below me. The moon jellyfish didn't sting, but the purple ones did.

Grayson knew to avoid the tentacles. Diving into the deep water he wove his way down through the sea of purple jellyfish and out of reach of their tentacles.

Swimming on the surface, a pair of bright orange garibaldi greeted me. They swam side by side very close to each other through the long, slowly waving tendrils of brown kelp. And they swam around my head, checking to see if I was a garibaldi invading their territory.

They were attracted to bright orange, and whenever I wore a tangerine swimming cap, they swam around my head. They swam to within a few inches of the oil rig. I watched them become two orange dots in the dark sea.

### Day 4 Intro

Grayson continued his dive, deeper and deeper in the enormous sea, and I watched Him.

Why are you going so far down? I felt myself getting a little nervous. How long can you hold your breath?

Be careful, Grayson. Be really careful.

Grayson's fluke became a tiny waving gray Y in the light blue depths and then the Y disappeared into the darkness. He dove so far down, one hundred or two hundred feet, that I wondered how he could stand the pressure changes in his ears and head. How could he equalize that pressure so quickly? How come his ears didn't rupture? Would he have enough air to return to the surface?

I looked at my watch.

He had been underwater for at least five minutes.

Was he okay? Would he return? Where was he?

The sun shifted suddenly, highlighting the water below so that it was possible to see down into the deep.

I said to myself, "This is the dumbest thing I've ever done, swimming so far out without a boat."

Making a few arm strokes, I took a breath and looked down.

It was dumb to look into an abyss. I have no idea why I kept doing it. I guess I just wanted to see more. I wanted to understand what I didn't already. I was just curious. I couldn't help myself.

The water was navy blue and full of wavering and shifting shadows. I moved a little deeper into the shadow of the oil rig. Taking another breath, I looked down again. I couldn't see Grayson.

The sea seemed empty without him. Suddenly, I felt more alone than ever before. I was scared for me and for him.

Could he dive to five hundred feet like an adult whale? How long could he hold his breath? Where could he have been going? Would he return?

I wondered: How long do you wait? How long do you wait for anyone?

I hung on the upper inches of the water and wondered. Should I go?"

No, he has come to me for help. I have to find him.

I pulled myself underwater with wide breaststroke pulls.

I dove deeper and deeper into the dark nothingness.

My head throbbed with the pressure. The dark blue world whirled around me. The emptiness tightened around me like a boa constrictor. I waited. I held my breath until I was nearly out of air then raced for the surface.



I had heard that whales sometimes dive into very deep waters so they can talk to each other. Their voices carry a much greater distance in the deep, where the water is denser and colder.

I put my face down in the water, and in my mind I shouted, "Grayson"! I hoped he would somehow hear me.

Grayson popped up from below the water and swam beside me.

In his eyes I saw a brightness, a sense of vitality, and a gentle sweetness. I held him in my eyes and in my heart. His poor mother, though, had to be frantically searching for him. How in this big ocean would she ever find him?

#### Day 4 Closure

"Grayson, let's swim back to shore now, I said. I had to. I was cold. And tired and depleted. My eyes were burning from the saltwater leaking into my goggles.

Grayson seemed to understand. He turned with me and started swimming toward shore.

### Day 5 Intro

I felt a deep sense of relief. The current seemed to rise on our back as if a giant hand was waving was lifting us and carrying us toward shore.

Grayson stopped and lay on his side. He looked tired. Waves were washing over his massive head; he was looking at me and he was listening to the water.

I listened and heard something I'd never heard before.

It sounded like a hundred high-pitched sparrows singing through a hundred tiny megaphones turned up to the highest volume.

Read 1st paragraph, pg. 112: Reader's Theater with children's voices.

Grayson was only ten feet from me and he seemed to be watching too.

We watched the dolphins playing for nearly five minutes. Then they disappeared and Grayson moved closer.

All of a sudden, Grayson dramatically changed course.

He turned almost completely around. Had he heard his mother's voice?

Then suddenly he leaped out of the sea. He flew five feet above the surface and when he hit the water, I felt the impact.

He had intentionally hit the water at a sharp angle to make an enormous impact that would create noise—and a giant splash. It was the best sideways cannonball I had ever seen.

Grayson was swimming so fast underwater that I could see streams of darker water flowing over his head.

I waited for him again, and wondered how long I could wait. This time, I waited for 15 minutes.

When I was floating, I wasn't creating any heat through exercise. The cold was starting to work its way deep into my muscles and I knew that I was getting closer to hypothermia. If the cold water made my body temperature drop too far, I could pass out or die from exposure. I had to start moving.

"Grayson I hope you can hear me. Please come back and swim with me. I need you."

I had to start moving.

I told myself to try one more time. I dove under the water and thought as loudly as I could, "Please, Grayson, don't give up on me. Please don't leave me out here. We'll find your mother. I'm not sure how, but we have a better chance if we stick together. Grayson please come back."

The tide was pressing into me. It was like being tethered to a giant elastic band. I would make some headway and then I would be pulled backward. I had to start swimming faster than I had three and a half hour ago if I was going to get across the tide and make it back to shore. I imagined that I was a tiny boat and my arms were the oars. I pulled harder.

And then, the lifeguards motored alongside me. "Glad you decided head back to shore. We've been keeping any eye on you, but the with the change in weather and all the boat traffic, it's getting dangerous to be swimming out here without a boat."

The older lifeguard asked me if I would like to ride in the boat the rest of the way. And he told me he had some good news. A crew on a commercial fishing boat about 20 miles north of us had spotted a pod of 5 gray whales swimming off the rocky Palos Verdes Peninsula. They didn't think the pod included the mother whale, but it was sign that there were other whales in the area.

What would you do?

#### Day 5 Mid-Class

Had Grayson heard his mother or thought he heard her? Maybe he had discussed something with the dolphins. I thanked the lifeguards but told them that I needed to stay the course, and swim back alone.

### Day 6 Intro

The swim back to the pier was going to be hard. There was no way around it. The wind was gusting to 15 knots and the sea was breaking into whitecaps. It was hard to find places between the waves to breathe.

The swells were growing from 1 to 2 feet, and as I swam I felt like I was bouncing on a trampoline on my stomach. Spray off the waves was splashing into my mouth and I was choking on water.

I stopped for a moment to refocus. The tide was against me. The current was flowing at about three-quarters of knot per hour.

This wasn't fun. My speed was normally two knots—or, two miles per hour.

I told myself to swim for twenty minutes and then I lifted my head. I wasn't making much progress. The pier was a mile away. It felt like I was swimming uphill.

### Day 6 Closure

And then, Grayson returned. He swam right up to me, within an inch and he let me touch him. His skin felt rubbery, like a mushroom, and not at all slimy. It gave a little when I touched it. I reached up on top and felt his dimples and then I slid my hand under him and smiled. I held the baby whale in my hand.

He trusted me enough to let me touch him. We were from two different worlds—two different beings, with two different lives, and yet somehow we understood each other.

"Everything will be okay, Grayson, don't worry we will figure this out," I promised.

## Day 7/Last Day -Intro

I felt a new energy. We swam side-by-side toward shore. Grayson was swimming easier too. And I was catching his slipstream, riding the tiny waves sliding off his long deep gray body.

By the time we reached the pier, a group of fishermen and parents with their kids were leaning on the pier railings, looking south, scanning the water for a water spout or any movement but it was hard to spot anything with the waves and glare off the water.

I could hear Steve's voice calling down above all the other voices. He said, "A fisherman on the southern jetty thinks he saw something big swimming around the harbor entrance. He thinks it might be her moving in our direction. The mother whale may be retracing her footprints, returning to the place where she thought she'd lost him.

In a minute, all the people standing on the pier moved to the left side. Some bent way over the railings to see farther into the distance, while others slowly scanned the water, looking for anything moving our way.

Grayson was restless. He was like a person pacing, maybe because he was cold and he was swimming back and forth to stay warm. He was breathing faster and shorter. Was he breathing to be heard through his breaths? The sound traveled at least half a mile in the air. I felt cold deep in my muscles. I was shivering. But I was afraid to get out of the water. If I did, it might affect Grayson badly.

From all the experience I had in open-water swimming I knew that it was an incredible lift to swim with someone else. Just having someone there gave me the confidence to continue it really made all the difference in the world. I didn't want to climb out of the water because I was afraid that Grayson would think I had abandoned him. He might leave before we ever found his mother.

## Last Day: Closure

I've got to do something, I told myself.

Maybe if I think very hard, his mother will hear me. Maybe she won't know my words but will sense my brain waves. Maybe she'll hear my feelings with her sonar.

I thought as hard as I could. I didn't know if it would work. I didn't know if anyone could ever know. But I had to try something. You don't have to hear the words to know someone cares about you. You don't have to hear the words to know someone believes in you. You don't need to hear the words to know someone loves you. You feel it; you know it.

I think Grayson heard my emotions and felt them too. He floated on the surface near me.

Tilting my head back and looking up, I noticed that more people were standing on the pier. "See all of them up there, Grayson. They're here for you."

It was as if Grayson understood. He looked up. He saw them and he grunted softly.

The people on the pier pressed against the railings, leaning toward the sea. They were willing his mother to appear.

My heart beat faster. I felt something change.

And then, it happened.

We hoped, believed, worked, learned, and tried again, and then suddenly it happened in a single moment, all that we hoped for and even a little more.

The sea's surface was changing. An underwater current was colliding with the chop and the waves were growing larger, but only in a wide straight line.

"Look over there! I think I see something!" a little boy shouted, excitedly.

It had to be. It just had to be.

"I think I see her! I think I see his mommy!" a strawberry blond girl shouted in a high joyful voice.

People were leaning so far over, trying to see what the little girl saw, that I hoped the wooden railings would hold the weight.

Then someone was shouting, "I think I see her too. Over there!"

People were craning their necks. Shielding their necks, shielding their eyes with their hands.

Someone else shouted, "Yes. There she is!"

"There she blows!" A fountain of white spray shot out of the water ten feet into the air.

People were laughing, shouting, pointing, clapping, cheering, and squeezing against the south-facing side of the pier. Parents were lifting kids on their shoulders, and older kids were ducking under and weaving in between the adults to get a better view.

There she was, one of earth's most amazing creatures. Swimming toward us.

Grayson took a few quick breaths and dove, and I stuck my head underwater.

There were sounds coming from the distance, sounds I'd never heard before. They were large, intense, so big I could feel them rumbling through the water.

Then there was nothing. No sound. No feeling. Nothing. Just the rushing sounds of my bubbles rolling out of my mouth, past my ears.

I looked for Grayson. He was gone. Had he found her? Had he swum away with her?

Then I heard his mother: She was talking and she had a beautiful voice— a voice that made me laugh and smile.

She was singing, her clicking and chirping strung together. She paused and made a series of sounds, high sounds and low ones and probably so many more at frequencies that were too low for any of us to hear.

There was a pause. And then I heard a second voice. It had to be Grayson. It was. It was Grayson. He had found her! He was clicking and grunting.

Grayson and his mother dove and surfaced ten feet from me. I made sure not to move between mother and son, but they swam over to me.