

# Prosthetic Preparations

**Grade Level:** Grades 4 & 5

**Language Arts Skills:**

*Florida Sunshine State Standards:*

*Grade 4: LA.4.4.2.1, LA.4.4.2.2*

*Grade 5: LA.5.4.2.1, LA.5.4.2.2*

**Description:** Students will learn about how Winter's physical therapy is performed and how the tail is applied by writing an instruction manual.

**Materials:**

- "The Tale of the Tail: Winter's Story" story
- "Prosthetic Preparations" worksheet
- "Winter's Tail" instructional PowerPoint presentation (used by Winter's trainers - optional)

**Additional Materials:**

- Book – "Winter's Tale" by Joanne Benazzi Friedland – available for purchase online (optional)
- Book – "Winter's Tail" by Juliana Hatkoff, Isabella Hatkoff, and Craig Hatkoff – available for purchase online (optional)
- Activity Book – "Winter: The dolphin who lost her tail" – available free online (optional)
- Video – "Winter: The Dolphin that Could" – available for purchase online (optional)

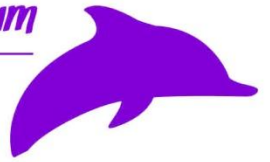
**Preparations:**

Make enough copies of the "Prosthetic Preparations" worksheet for each student.

**Procedures:**

- 1) Familiarize students with Winter the dolphin and her story. You may use any of the books listed in the additional materials, or the story "The Tale of a Tail: Winter's Story," included within the lesson plan.
- 2) Explain that students will be learning how to transform a summary into step-by-step instructions while learning about how Winter's tail is used for physical therapy.

- 3) Pass out the “Prosthetic Preparations” worksheet and read Part One aloud. Have students answer the questions individually.
- 4) For Part Two, group students into groups of four or fewer and have them work together to match up the pictures with the appropriate part of the description and write out instructions in their own words.
- 5) Have one student from each group present their instruction manual to the rest of the class.
- 6) Have each group compare the other instruction manuals to their own, working from memory, to see if theirs could be improved.
- 7) Utilize the “Winter’s Tail” instructional PowerPoint presentation to show the class the step-by-step instructions actually used to train Winter’s caregivers.



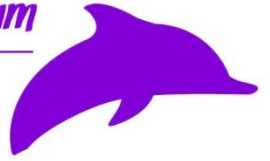
# ***The Tale of the Tail: Winter's Story***

On the calm waters of Mosquito Lagoon one December morning, a crab trap buoy floated gently on the surface of the water. Beneath the buoy was a long rope and tied to the long rope was a crab trap. To a young dolphin calf, it looked like the perfect toy! The dolphin calf grabbed the rope in her mouth and began to play. She swam back and forth, up and down, twisting and turning around the rope. Suddenly, she realized that the rope was tangled all around her body. It was twisted around her fin on top, called a dorsal fin. It was twisted around her fins on the side, called pectoral fins. Most tightly, it was twisted around her tail, called her flukes. The young dolphin needed help and quick!

Luckily, a fisherman nearby saw the crab trap buoy bouncing around on the top of the water. He directed his boat closer and saw the little dolphin all wrapped up in the line of the crab trap. He called for help and waited until a rescue team arrived. The rescue team saw that the little dolphin would need the care of an animal doctor, called a veterinarian, and took her all the way across the state of Florida to Clearwater Marine Aquarium.

Once she was at Clearwater Marine Aquarium, the young dolphin was named Winter after the season in which she was found. The veterinarian and the animal care team at the aquarium realized that Winter's tail was very damaged from her experience with the crab trap – so damaged that she would never be able to use it again. Sure enough, her tail slowly began to fall off until it was completely gone.

Winter didn't let her missing tail slow her down. She learned how to swim side-to-side, like a fish swims. But the animal care team at CMA knew that swimming like that could hurt Winter's back – a dolphin's tail is supposed to move up and down! They worked with a group of people from Hanger Prosthetics, a company that makes artificial legs and arms for people. The doctors at Hanger designed a new tail for Winter. When Winter wears it, she can swim like a normal dolphin does – up and down!



# Prosthetic Preparations

Name: \_\_\_\_\_

You are a trainer at the Clearwater Marine Aquarium, home of Winter the dolphin. As part of your daily duties, you have been assigned physical therapy with Winter!

**Part One Directions:** For your job training, the head dolphin trainer gave you a summary of why Winter needs physical therapy. Read the summary below and answer the questions that follow.

## *Notes from the head trainer: Physical therapy with Winter*

*Winter lost her tail as a calf after being entangled in the ropes of a crab trap. Since then, she has developed a side-to-side swimming motion. She achieves this by moving her tail stump to the left and right and using her side pectoral fins for extra motion. This side-to-side tail movement is unnatural and could cause damage to Winter's spine. Therefore, we use physical therapy, like stretches and the artificial tail, to help Winter's muscles stay strong and her spine stay straight.*

1) Describe how Winter swims without her artificial tail.

\_\_\_\_\_

2) How do dolphins normally swim?

\_\_\_\_\_

3) What activities do you do to keep your muscles strong and stay active? How are these activities similar to Winter's physical therapy? How are they different?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Part Two Directions:** After reading the summary, you approach the head dolphin trainer and ask her what you have to do for Winter during her physical therapy session. Here is what she says:

*Winter's physical therapy sessions have two parts. The first part involves stretching Winter's tail stump. For this, the trainer must lay a mat down on Winter's platform to cushion her tail stump during the stretches. Next, the trainer calls Winter over to the platform using a hand signal and a reward. Winter lifts her tail stump so that the trainer may place the mat gently underneath her. Once the mat and Winter are in position, the trainer can then place pressure on the middle of Winter's tail using their hands. This flattens Winter's tail against the platform, stretching her spine.*

*After Winter has been stretched for about five minutes, we begin the second part of her physical therapy. The second part involves having Winter use the artificial or prosthetic tail. Before bringing the tail out to Winter, the trainer must lubricate the sleeve with a gel. This helps the tail sleeve to slide onto Winter's body. Next, the sleeve is placed on the tip of her tail and rolled over her tail stump. The trainer has to make sure there are no air bubbles and that the sleeve fits well. A cap is then placed over the sleeve at the end of Winter's tail to help keep the prosthetic itself in place. Finally, the prosthetic tail is placed on over the sleeve and fastened with Velcro. Winter is then able to swim laps around the pool with her tail moving up and down, exercising her important muscles.*

Using the pictures on the next page as a guide, turn the above description into step-by-step instructions of Winter's physical therapy.



Part 1: Stretching Winter



1)



2)



3)



4)



Part 2: Putting on the Tail



1)



2)



3)



4)