Tracking Winter's Progress

Grade Level: Grades 3, 4, & 5

Mathematics Skills:

Florida Sunshine State Standards:

Grade 3: MA.3.S.7.1

Grade 4: MA.4.A.4.2

Grade 5: MA.5.A.4.2, MA.5.S.7.1

Description: Students will practice creating line graphs as progress charts for themselves and Winter the dolphin through hands-on experimentation.

Materials:

- "The Tale of the Tail: Winter's Story" story
- "Tracking Winter's Progress" worksheet
- Colored pencils

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:

Group desks into threes or fours. Provide each group with a set of colored pencils. Print out enough copies of "Tracking Winter's Progress" worksheets for each student to have one.

Procedures:

1) Familiarize the class with Winter's story by reading the included "The Tale of a Tail: Winter's Story" or other, including books or videos listed in the additional materials.
2) Pass out the "Tracking Winter's Progress" worksheets to students.

3) Read aloud the directions as the students progress through the worksheet.
4) As students read about the different parts of the line graph in their worksheet, draw a model line graph on the board and label it accordingly.
5) Have students self-check and check each other's Part One line graph.
6) Have students work independently on their Part Two line graph, but check upon completion within their groups.

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!

Clearwater Marine Aquarium

Tracking Winter's Progress

Name: _____

Imagine that you are Winter the dolphin. After the loss of your tail, you learned how to swim by wiggling your body from side-to-side. Your trainers and doctors have developed an artificial tail for you, but to use it, you have to relearn how to swim like a dolphin should: up-and-down. Do you think you will get it right on the first try?

Of course not! For Winter, learning how to swim with her artificial tail was a long process. In fact, Winter's trainers still work with her on a daily basis to perfect her swimming and improve her muscles and spine. Today, you will track Winter's progress, and your own, on a line graph.

Part One Directions: Learning how to swim in an up-and-down motion may have felt unnatural for Winter after swimming in a side-to-side motion for so long! Have you ever tried to brush your teeth or comb your hair with your non-dominant hand (your dominant hand is the one you write with, your non-dominant hand is the other)? How about writing out your name? On the lines below, practice writing your full name with your non-dominant hand.

1) _____

_____

_____

2) _____

_____

_____

3) _____

_____

_____

4) _____

_____

Now, count how many errors you made on each try. Errors include: capital letters not reaching the top line, capital letters reaching above the top line, lowercase letters not reaching the middle line, lowercase letters reaching above the middle line, or lowercase or capital letters extending below the bottom line (other than g's, j's, p's, q's, or y's).

1) On the first try, I made _____ errors.

2) On the second try, I made _____ errors.

3) On the third try, I made _____ errors.

4) On the fourth try, I made _____ errors.

It is okay to make errors when you are learning something new! Over time, if you were to keep practicing, you would start to see the number of errors decrease! Let's make a line graph now to track your progress during your first four tries!

Line graphs need to have a title, a vertical axis, a horizontal axis, labels, points, and a line.

The title is the part of the graph that tells you about the information you are looking at. It is normally located on the top of the graph. Using the graph on the next page and colored pencils, circle the title in red.

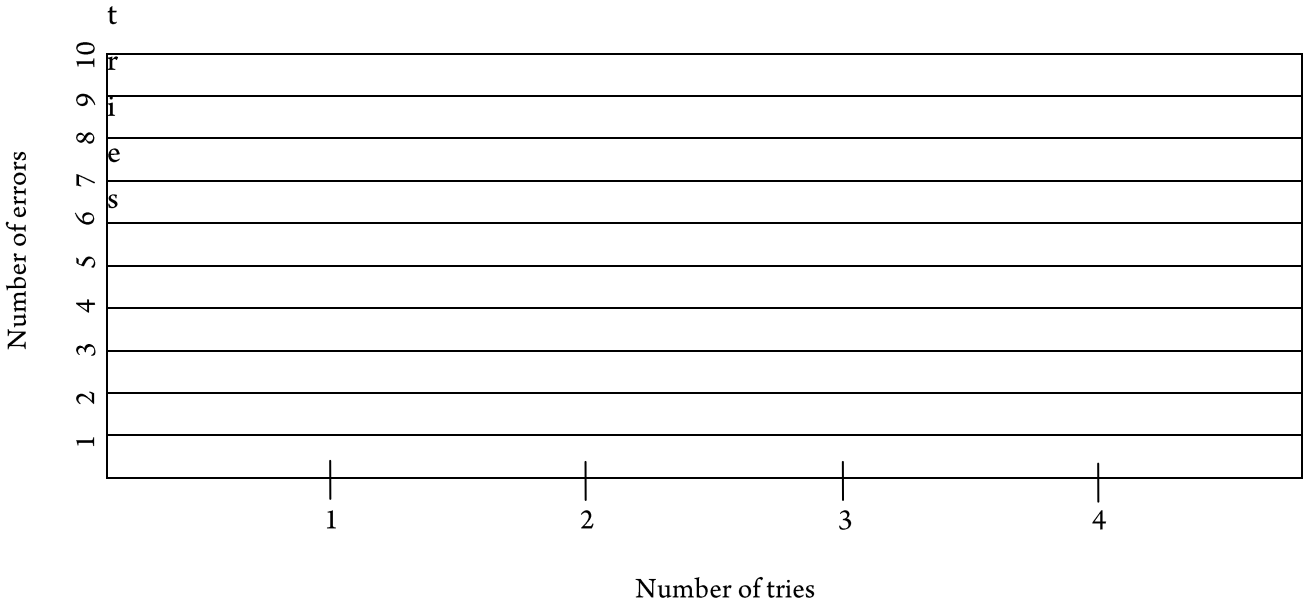
The vertical axis is the part of the graph that runs up and down. This part of the graph measures how much, how many, or how often the thing being studied occurred. Using the graph on the next page and colored pencils, circle the vertical axis in blue.

The horizontal axis is the part of the graph that runs from left to right. This part of the graph measures time or gives information on what exactly is being studied. Using the graph on the next page and colored pencils, circle the horizontal axis in green.

Both the vertical and horizontal axis need to have labels to show the reader what is being compared and shown on the graph. Using the graph on the next page and colored pencils, circle both the labels in purple.

The points and the line are going to be filled in by you. The number of errors is represented on the _____ axis and the number of times is represented on the _____ axis. Once all your points are put on the graph, draw a line to connect them! You've just made a line graph!

The number of errors made by writing with my non-dominant hand over multiple t r i e s



5) Based on your line graph, did your handwriting get better or worse over time?

_____

6) How do you think writing with your non-dominant hand is similar to Winter trying her artificial tail for the first time?

_____

_____

7) Do you think it was harder or easier for Winter to learn to swim with her artificial tail than it would be for you to learn to write with your non-dominant hand? Why?

_____

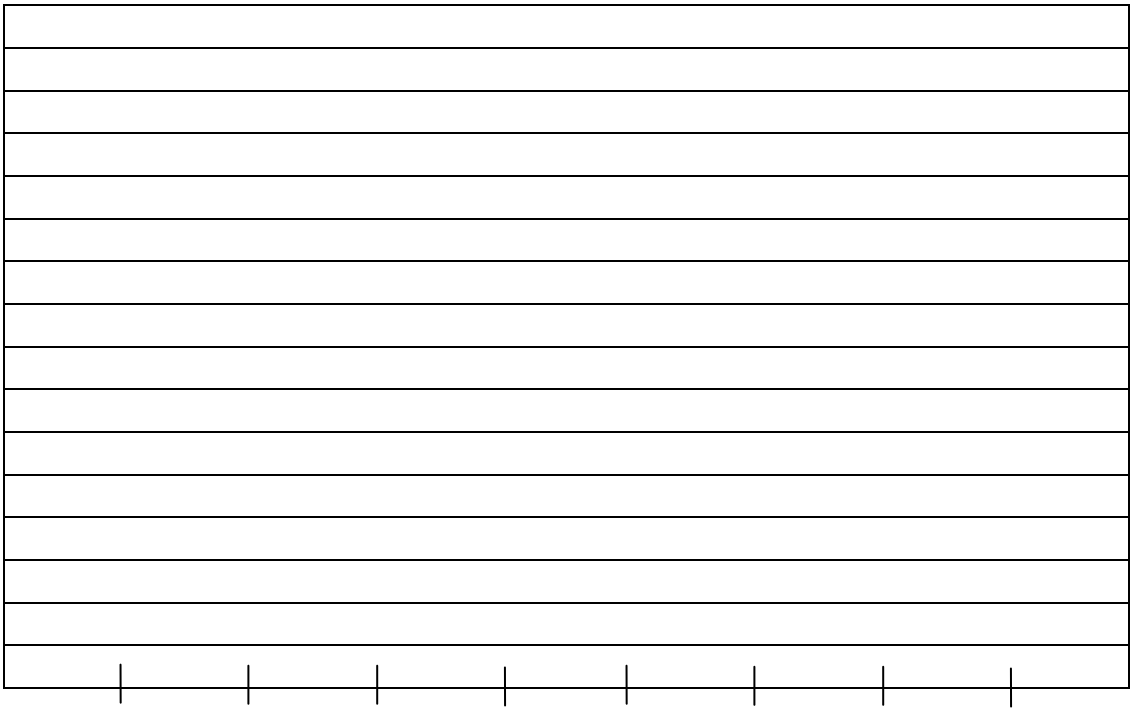
_____

_____

Part Two Directions: Now that you've learned how to make a line graph and plot points, let's apply our line graphs to Winter's progress. Look at the chart below. This chart shows the first 10 times Winter used her tail and how many minutes she used the tail properly each time.

	1st Time	2nd Time	3rd Time	4th Time	5th Time	6th Time	7th Time	8th Time
Minutes	2 min	4 min	8 min	7 min	10 min	10 min	13 min	15 min

Using the line graph provided, write a title, label the vertical axis, label the horizontal axis, and plot the points to track Winter's progress wearing her tail over time.



8) Based on your line graph, did Winter's swimming get better or worse over time?

_____

9) Why do you think Winter progressed like she did?

_____