



**Mr. Goodbar**  
**Date of Birth:** October 20, 2019 (approximate)  
**Age:** 1 Week Old  
**Straight Length nose to tail:** 121 cm  
**Curve Length nose to tail:** 138 cm  
**Mass:** 36.5 kg  
**Blubber Depth Dorsal Sternum:** 1.42 cm

**Fun Fact:** When the pups are born, they have a layer of baby fur, called lanugo, and they have almost no blubber.



**Mr. Goodbar**  
**Age:** 3 Weeks Old  
**Straight Length nose to tail:** 134 cm  
**Curve Length nose to tail:** 154 cm  
**Mass:** 65 kg  
**Blubber Depth Dorsal Sternum:** 2.4cm

**Fun Fact:** Mr. Goodbar was often found resting in the same position as his mom.



**Mr. Goodbar**  
**Age:** 5 Weeks Old  
**Straight Length nose to tail:** 147 cm  
**Curve Length nose to tail:** 159 cm  
**Mass:** 88 kg  
**Blubber Depth Dorsal Sternum:** 3.15 cm

**Fun Fact:** Weddell seals can dive up 2,300 feet (700 meters) deep. That is about 59 big yellow school buses long!



**Mr. Goodbar**  
**Age:** 7 Weeks Old  
**Straight Length nose to tail:** 152 cm  
**Curve Length nose to tail:** 168 cm  
**Mass:** 102.5 kg  
**Blubber Depth Dorsal Sternum:** 3.5 cm

**Fun Fact:** About 40% of an adult Weddell seal's mass will be blubber. This blubber layer is around 5.08 cm.



## Caramello

**Date of Birth:** October 13, 2019 (approximate)

**Age:** 1 Week Old

**Straight Length nose to tail:** 127 cm

**Curve Length nose to tail:** 140 cm

**Mass:** 51 kg

**Blubber Depth Dorsal Sternum:** 1.49 cm

**Fun Fact:** Weddell Seal pups shiver to help stay warm!



## Caramello

**Age:** 3 Weeks Old

**Straight Length nose to tail:** 136 cm

**Curve Length nose to tail:** 153 cm

**Mass:** 65 kg

**Blubber Depth Dorsal Sternum:** 2.95 cm

**Fun Fact:** Caramello got his name because he was a mellow little pup. He stuck close to his mom and seemed to have an easygoing personality.



## Caramello

**Age:** 5 Weeks Old

**Straight Length nose to tail:** 142 cm

**Curve Length nose to tail:** 163 cm

**Mass:** 85.5 kg

**Blubber Depth Dorsal Sternum:** 2.72 cm

**Fun Fact:** Weddell seals can stay underwater for up to 80 minutes. They could hypothetically watch the entire original Disney movie, The Jungle Book, while underwater, without taking a breath!



## Caramello

**Age:** 7 Weeks Old

**Straight Length nose to tail:** 153 cm

**Curve Length nose to tail:** 158 cm

**Mass:** 83 kg

**Blubber Depth Dorsal Sternum:** 3.01 cm

**Fun Fact:** How to tell seals and sea lions apart: Seals have an ear hole and sea lions have an ear with a flap. Seals scoot on their belly when moving across land and sea lions use their flippers to "walk".



### Smartie

**Date of Birth:** October 26, 2019 (approximate)

**Age:** 1 Week Old

**Straight Length nose to tail:** 121 cm

**Curve Length nose to tail:** 136 cm

**Mass:** 41 kg

**Blubber Depth Dorsal Sternum:** 2.07 cm

**Fun Fact:** Weddell seal pups are usually born starting the second week of October, when the average temperature is around -19° Celsius (-2.2 ° Fahrenheit) and the average wind speed is 11 mph. However, the conditions can be much colder and wind speed can get much higher.



### Smartie

**Age:** 3 Weeks Old

**Straight Length nose to tail:** 136 cm

**Curve Length nose to tail:** 152 cm

**Mass:** 79 kg

**Blubber Depth Dorsal Sternum:** 2.57 cm

**Fun Fact:** Smartie was always by his mom's side. She could get him to go in the water, but it took a while for him to be willing to start his diving lessons.



### Smartie

**Age:** 5 Weeks Old

**Straight Length nose to tail:** 145 cm

**Curve Length nose to tail:** 165 cm

**Mass:** 102 kg

**Blubber Depth Dorsal Sternum:** 3.77 cm

**Fun Fact:** Weddell seals see in low light conditions below the sea ice due to a special structure in their eyes called the tapetum lucidum. Have you ever seen your pet dog or cat in a dim room, and it seemed like their eyes were glowing? This glow is caused by their tapetum lucidum eye layer.



### Smartie

**Age:** 7 Weeks Old

**Straight Length nose to tail:** 155 cm

**Curve Length nose to tail:** 165 cm

**Mass:** 107.5 kg

**Blubber Depth Dorsal Sternum:** 3.4 cm

**Fun Fact:** Weddell seals favorite food is fish, especially Antarctic cod and Antarctic silverfish. They also eat squid, octopus, and crustaceans like krill or prawns.



## Charleston Chew

**Date of Birth:** October 17, 2019 (approximate)

**Age:** 1 Week Old

**Straight Length nose to tail:** 126 cm

**Curve Length nose to tail:** 141 cm

**Mass:** 42.5 kg

**Blubber Depth Dorsal Sternum:** 2.2 cm

**Fun Fact:** Weddell seals are unusual because they learn how to swim from their moms. Most seals learn how to swim and dive entirely on their own, with no help from mom.



## Charleston Chew

**Age:** 3 Weeks Old

**Straight Length nose to tail:** 139 cm

**Curve Length nose to tail:** 150 cm

**Mass:** 66 kg

**Blubber Depth Dorsal Sternum:** 2.75 cm

**Fun Fact:** Charleston Chew was feisty pup who was quick to snap at nearby animals, including other pups and even his mom!



## Charleston Chew

**Age:** 5 Weeks Old

**Straight Length nose to tail:** 148 cm

**Curve Length nose to tail:** 167 cm

**Mass:** 96.5 kg

**Blubber Depth Dorsal Sternum:** 3.18 cm

**Fun Fact:** Weddell seal whiskers help them to detect water disturbances caused by their prey so that they are able to find food, even in complete darkness.



## Charleston Chew

**Age:** 7 Weeks Old

**Straight Length nose to tail:** 150 cm

**Curve Length nose to tail:** 169 cm

**Mass:** 101.5 kg

**Blubber Depth Dorsal Sternum:** 3.79 cm

**Fun Fact:** Weddell seals were named for Sir James Weddell, a British sealing captain in the 1820s.



Sweetart

**Date of Birth:** October 18, 2019 (approximate)

**Age:** 1 Week Old

**Straight Length nose to tail:** 127 cm

**Curve Length nose to tail:** 137 cm

**Mass:** 43.5 kg

**Blubber Depth Dorsal Sternum:** 1.65 cm

**Fun Fact:** Weddell seals have their pups on the fast ice because it keeps them safe from their primary predator, killer whales. Because they have no land predators, they are not afraid of humans.



Sweetart

**Age:** 3 Weeks Old

**Straight Length nose to tail:** 139 cm

**Curve Length nose to tail:** 155 cm

**Mass:** 64.5 kg

**Blubber Depth Dorsal Sternum:** 2.53 cm

**Fun Fact:** Sweetart had both a lively and a sweet side. She liked to stay tucked behind the snow drifts and sea ice pressure ridges.



Sweetart

**Age:** 5 Weeks Old

**Straight Length nose to tail:** 141 cm

**Curve Length nose to tail:** 158 cm

**Mass:** 74.5 kg

**Blubber Depth Dorsal Sternum:** 2.75 cm

**Fun Fact:** Weddell seals exhale before they dive under water and collapse their lungs. They store oxygen in their blood and muscles to help them make long dives.



Sweetart

**Age:** 7 Weeks Old

**Straight Length nose to tail:** 147 cm

**Curve Length nose to tail:** 169 cm

**Mass:** 90 kg

**Blubber Depth Dorsal Sternum:** 3.01 cm

**Fun Fact:** Weddell seals can have seal lice! The seal lice are not zoonotic, meaning they don't infest people. The team combed through the pups' fur to collect samples of the lice to study further.



6. Explain one characteristic of Weddell seal pups that aid in maintaining a stable body temperature.

7. Contrast the internal oxygen stores between Weddell seals and humans.

8. Write one question you have for the research team:

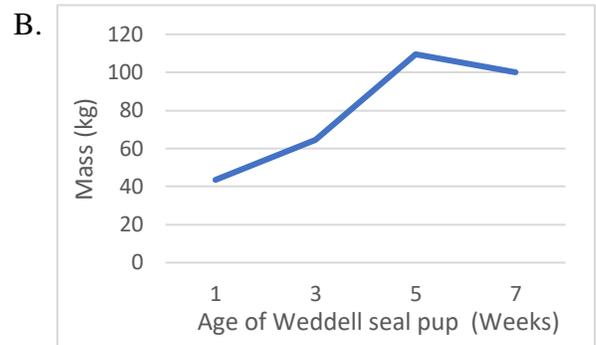
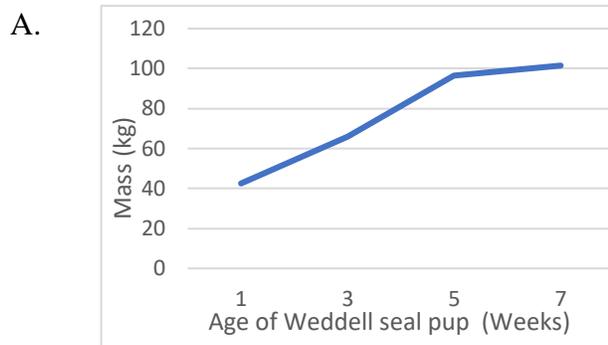
9. If you were on the Growing up on Ice research team what would you investigate about Weddell seals that would help answer 1 of the teams research questions.

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

### Growing Up on Ice - Student Worksheet

Weddell seals live around Antarctica, they are the southern-most breeding mammal. In September and October, soon to be mother seals haul out onto the sea ice and have a single pup. These pups are born between 1.2-1.5 (4-5 feet) long and weighing 22-30 kg (48-66 lb). Weddell seal pups, being mammals, rely on their mother's milk for food. Their mom's milk is mostly fat, about 50%. The pups turn this fat rich milk into blubber layer, which is responsible for most of their growth. Around 7 weeks old the pups wean, which means they stop relying on their mom's milk. In 2019 research team B-030, collected data on multiple Weddell seal pups, every two weeks, for the seven weeks the pups lived with their mothers. Each of the seal pups researched was named after a type of candy.

The research team thinks the seal pup, Twix, weaned before the age of 7 weeks old, because he began losing mass after week 5.

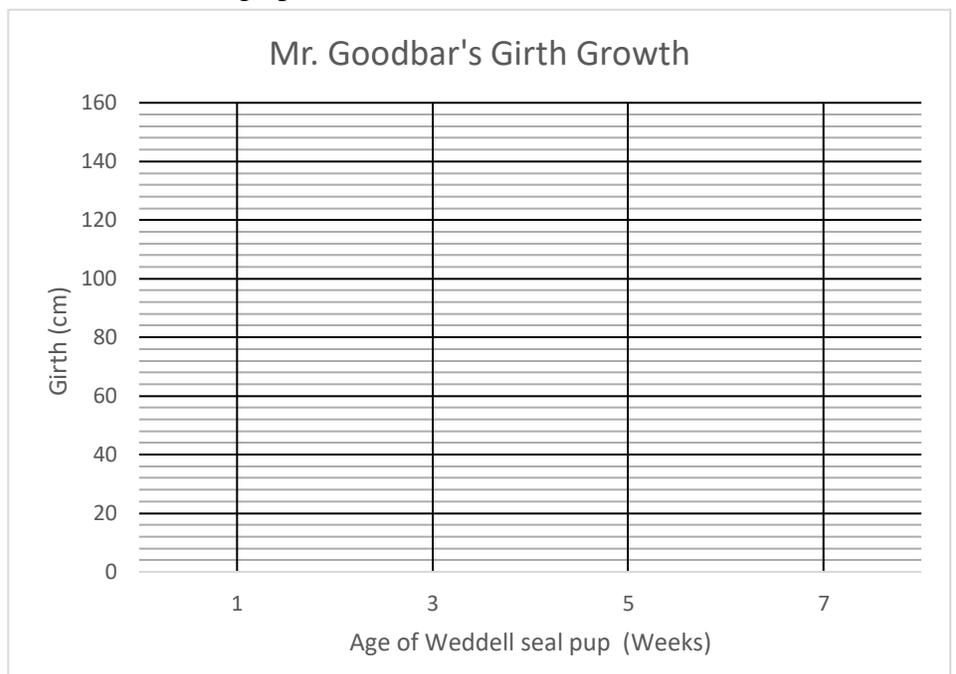


1. Which of the line graphs correctly represents Twix's mass data for the 7 weeks?

2. Explain why you chose that answer:

3. One of the measurements the researchers recorded was girth, the distance around the seal. Using the data below, draw the line of best fit on the graph below for Mr. Goodbar's sternum girth growth. Show your work!

Age (weeks)	Girth (cm)
1	90
3	106
5	120
7	



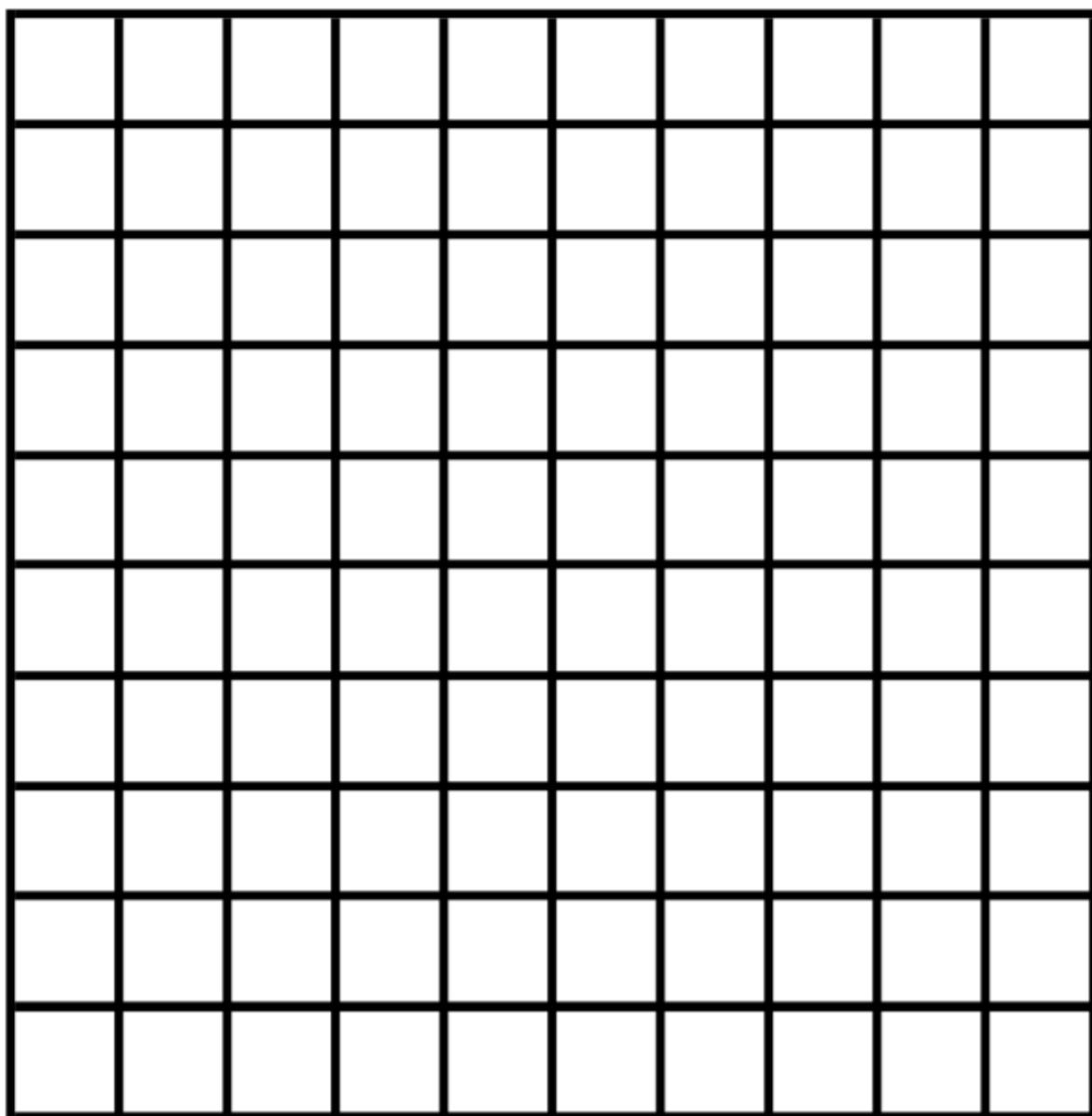
4. Use the line of best fit you drew to predict Mr. Goodbar's sternum girth for week 7.
5. Write the linear equation of line of best fit, which represents Mr. Goodbar's sternum girth growth over 7 weeks:
6. What does the y-intercept for this data set represent?
7. What does the slope represent for this data set represent?
8. Mr. Goodbar's actual sternum girth for week 7 was 122 cm. How is this different from your prediction?

Obtain the Weddell seals data cards. In your group assign each member 1 data set to analyze: mass, straight length nose to tail, curve length nose to tail, or blubber depth dorsal sternum. Have each person construct a graph to represent the data.

Before constructing your graph answer the following questions:

9. Which variable will be placed on the X-axis? \_\_\_\_\_
10. Which units will be used to measure this variable? \_\_\_\_\_
11. What is the data range for the X-axis? \_\_\_\_\_
12. The graph is 10 squares by 10 squares. What will your scale be on the X-axis? (How much will each square on the graph represent?)
13. Which variable will be placed on the Y-axis? \_\_\_\_\_
14. Which units will be used to measure this variable? \_\_\_\_\_
15. What is the data range for the Y-axis? \_\_\_\_\_
16. The graph is 10 squares by 10 squares. What will your scale be on the X-axis? (How much will each square on the graph represent?)
17. Explain which is the dependent variable and which is the independent variable:

Construct your line graph on the next page. Make sure to include a title, label the X-axis and Y-axis, scale, plot data points, connect data points with a line, and make a key.



Answer the following questions by comparing data from your group members' graphs.

18. Pick 1 growth variable to compare: \_\_\_\_\_

Which Weddell seal pup grew at the fastest rate? Support your claim with data as evidence

19. Looking at the mass, straight length nose to tail, curve length nose to tail, and blubber depth at the dorsal sternum, was the biggest seal pup at seven weeks the biggest for each category? Explain

20. Did any of the seal pups decrease in size over the seven weeks? (Support your claim, using data as evidence.)

21. Weddell seals are fully grown at 3 years old, approximately 157 weeks. The equation,  $y = 14.95x + 30.75$ , represents the mass gain of the Weddell seal pup Sweetart for weeks 1-7. Using this equation determine the predicted mass (kg) of Sweetart at week 157:

22. An adult Weddell seal has an actual mass around 545 kg. Why do you think Weddell seal growth is not linear?