

Name:
Marine Biology



HOW MANY WILL MAKE IT?

Watching a baby turtle (known as a "hatchling") struggle out of the nest and make its way to the water is an emotional experience. Everything from footprints to driftwood and crabs are obstacles, though this gauntlet is important for its survival. Birds, raccoons, and fish are just a few of the predators these vulnerable creatures face; some experts say only about one in a thousand will survive to adulthood under natural conditions.

★ **WATCH THIS:** [Baby sea turtles risk it all in treacherous scramble to the sea](#)

Your job: Let's determine the survival rate for baby loggerheads. Fill in the chart with the number of baby sea turtles that survive at each step. You will need access to a calculator. Simply subtract the losses from the population for each situation to get the number of babies that will survive in the end.

● **HYPOTHESIS- predicted survival rate:** _____

<p>a. A mother loggerhead lays 3 clutches of eggs. One nest had 116 eggs, the second nest had 132 eggs, and the third had 122.</p> <p>How many total eggs in all?</p>	<p>Starting population=(hint:116+132+122)</p> <p>a. Total: _____</p>
<p>b. Half of the eggs laid are not fertilized.</p>	<p>Total = (hint : divide- take # from a. and divide by 2)</p> <p>b. Total: _____</p>
<p>c. Some baby sea turtles get stuck in their eggs.</p> <p>This is a loss of 40 hatchlings.</p>	<p>Total = (hint take # from b and subtract 40)</p> <p>c. Total: _____</p>
<p>d. While climbing out of the nest, some baby turtles get trampled by their siblings.</p> <p>This is a loss of 35 hatchlings.</p>	<p>Total = (hint take # from c and subtract 35)</p> <p>d. Total: _____</p>
<p>e. Once out of the nest, the baby sea turtles rely on moonlight to guide them towards the direction of the ocean. Since there is so much coastal development on the shorelines, artificial lighting causes hatchlings to move inland.</p> <p>This is a loss of 22 hatchlings.</p>	<p>Total = (hint take # from d and subtract 22)</p> <p>e. Total: _____</p>

<p>f. As they emerge, hatchlings make bite-sized meals for birds, crabs and a host of predators on the shore.</p> <p>This is a loss of 44 hatchlings.</p>	<p>Total = (hint take # from e and subtract 44)</p> <p>f. Total: _____</p>
<p>g. Beach Driving, either at night or during the daytime, can negatively impact sea turtles. Night time driving can disturb nesting, disorient hatchlings, and crush hatchlings attempting to reach the ocean.</p> <p>This is a loss of 10 hatchlings.</p>	<p>Total = (hint take # from f and subtract 10)</p> <p>g. Total: _____</p>
<p>h. Once in the water, the babies are still not safe. Fish and sharks are going to consume these easy targets.</p> <p>This is a loss of 14 baby turtles.</p>	<p>Total = (hint take # from g and subtract 14)</p> <p>h. Total: _____</p>
<p>i. Nets. Fishermen forget to remove their nets and this causes juveniles to get stuck and drown.</p> <p>This is a loss of 9 baby turtles.</p>	<p>Total = (hint take # from h and subtract 9)</p> <p>i. Total: _____</p>
<p>j. Speed boats move fast and don't always see the turtles right at the water surface. Propellers injure these babies and they often die as a result.</p> <p>This is a loss of 6 baby turtles.</p>	<p>Total = (hint take # from i and subtract 6)</p> <p>j. Total: _____</p>
<p>k. Such a long journey and energy is needed. The baby turtles will feed on some small sea jellies. Unfortunately, they can sometimes consume plastic which looks like their favorite food.</p> <p>This is a loss of 1 baby turtle.</p>	<p>Total = (hint take # from j and subtract 1)</p> <p>k. Total: _____</p>
<p>TOTAL SURVIVING TURTLES →</p>	<p># of surviving baby turtles: _____</p>

Explanation Questions

1. What is the survival rate of these baby sea turtles? Use the equation to help you calculate this number.

*equation= # of surviving turtles (k) / # of eggs laid (a) X 100= _____%

Is this greater or less than your predicted survival rate? Explain.

2. From reading the scenarios in the chart, determine which situations are:

a. Natural threats:

b. Human caused threats:

3. How would the hatchling survival rate change if?

ECOSYSTEM SHIFT	WILL THIS LEAD TO AN INCREASE or DECREASE IN SURVIVAL RATE	NEW SURVIVAL RATE (hint: alter the total # of surviving hatchlings) ***show your math!
a) What if Fishermen did not leave their nets behind?		
b) What if the sea turtle contracts a deadly virus (Loss of 2 more hatchings)		
c) What if there was a reduction in ½ of the amount of shore predators(f)?		

4. Although these threats to sea turtles and destruction of their habitats seem almost too big to overcome, there are many things within our control that can be changed. List one way humans could help reduce our impact on sea turtle populations. How can we help the hatchlings?

