The Chesapeake Bay: A Home for Many

Ecology: Chesapeake Bay
The Chesapeake Bay
Who likes animals?
Chesapeake Bay
Chapter One: Meet Jim and Danny
Ecology: Chesapeake Bay
Grandpa, What is that fish?
Ecology: Chesapeake Bay
Danny: Grandpa, Look at that crab! What is it eating?
The Chesapeake Bay
Who likes to eat blue crabs?
What do the blue crabs eat?
What about the other animals?
What do they eat?
Ecology: Chesapeake Bay
Many food chains together form a food web.
Grandpa: *Look at the top of this food web, Danny. That’s you and me! When we catch fish for supper, we are part of the food web!*

*In a balanced food web, there are not too many predators or prey.*
These plants and animals in the Bay ecosystem depend on each other to survive.

A healthy ecosystem is one with a balanced food web.
Jim: The Chesapeake Bay is the largest watershed in the United States.

Danny: What is a watershed, Grandpa?
Jim:
A watershed is an area of land that drains into a river, lake, bay or ocean.

Can you find the Chesapeake Bay on this map?
The Chesapeake Bay Watershed

The Bay area stretches across 64,000 miles over six states: Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and The District of Columbia.
Testing a Watershed

- river
- fertilizer
- pollution
- agricultural waste
Fishing and Sailing

Jim: I was born and raised here. I made my living here - fishing and sailing. It’s important to keep the water of the Bay clean.

Danny: That’s a lot of boats, Grandpa! Is it always this crowded?
Jim: Not always…
More and more people and businesses are moving here.

Do you know that over 17 million people live in the Chesapeake Bay watershed?

They have a big impact on the ecosystem.
Jim shows Danny dead zones in Chesapeake Bay

Danny: Grandpa, what is that green slime on the water?

Jim (shaking his head): That green slime is algae. When I see all that algae, I know there is trouble. “
Grandpa: *Look at this, Danny.*

Danny: *The water is not blue. It is reddish brown. And there is a dead crab. What is wrong?*
Grandpa: That reddish brown water is called mahogany tide. The algae here is not green, but reddish brown and there is too much of it.

Danny: How did this happen?
Grandpa: *Because there is too much nitrogen in the water, making the algae grow too fast.*

Danny: *What is nitrogen and where does it come from?*
Grandpa: The nitrogen comes from pollution in the water.

When the algae grows too fast, it blocks the sunshine.

Without sunshine, the grasses cannot make enough oxygen for the fish and other animals to breathe.
Grandpa: When the fish cannot breathe, they die.

That makes a dead zone in the Bay.
Grandpa: *Our watershed is the largest in the United States and brings water all the way from New York.*
Grandpa: *Dead zones are more and more of a problem because there are many farms, cities and factories in the watershed.*
Grandpa: *Pollution from the farms, cities, and factories run into the rivers, and the rivers carry the pollution to the Bay.*

Danny: *Grandpa, what can we do to stop the dead zones?*
Grandpa: Let’s go for a drive. I will show you some of the reasons that the Chesapeake Bay is polluted.
Jim and Danny drive past a chicken farm.

Jim: Did you know the Chesapeake Bay area is famous for growing chickens?

But too much chicken waste also goes into the Bay.
Jim: *Chicken waste contains nitrogen. Nitrogen helps the algae grow.*

*Too much algae hides the sun and makes dead zones in the Bay.*
Jim and Danny drive past another farm.

Jim: Look at this farm. Farmers use different pesticides to help their crops grow.

When it rains, these pesticides run off into the rivers of the watershed.

Danny: So, the pesticides end up in the Chesapeake Bay. That’s awful, Grandpa!
On their way home, Jim and Danny see many new houses being built. Jim: *Many trees and forests are cut down to build houses.*

That means that when it rains, there are no trees to hold the water in the soil.

Danny: *And the water ends up in the Bay, again.*
Danny: Grandpa, we have the same problem in the city because of so many buildings and people.

There aren’t many trees in the city.

Grandpa: They all add to the pollution that affects the Bay.
On their way back to Baltimore…

Danny: Grandpa, look at all these cars and trucks! They all add to the pollution.

We have to show people how beautiful the Chesapeake Bay is without pollution.

Jim: That’s a great idea, Danny. Let’s go home and get started.
The next day in class, Danny showed his photos to his classmates.

Danny: Look, isn’t it beautiful?

The Chesapeake Bay is home for many.

We must make efforts to keep its ecology healthy.