

HAWAII STORM PATROL

INSTRUCTOR'S GUIDE



Aloha teachers and parents!

Welcome to the Instructor's Guide for the Storm Patrol educational videos. As your students work their way through each chapter, this guide will provide you with activities and discussion questions that will help expand on the material covered in the following videos.

The goal of this presentation is to educate your students on how Hawai'i's storm drains work, how various types of pollution can get into the drains, how this impacts beaches and oceans, and what we can all do to help.

Once students have watched each video and completed each quiz, they'll become Official Recruits of the Hawai'i Storm Patrol. This means that they'll be able to download a Storm Patrol Zoom background that they can use for online classes.

Encourage these Official Recruits to take pride in their newfound roles as protectors of Hawai'i's beaches and ocean!



Introduction for Students

Do you have what it takes to protect our beaches and ocean?

The Hawai'i Storm Patrol is looking for new recruits, like you, to team up and fight pollution!

In the following four videos, you'll join Mālama the fish and his four friends in learning all about something called storm water, how it can pollute the ocean, and what you can do to help.

Are you ready to get started? Alright recruit, let's begin by getting to know more about something you're already familiar with: water.



CHAPTER 1:

Where the Rain Runs Off



INTRODUCTION

The first video in this series introduces students to the concept of storm water, where it comes from, how storm drains prevent flooding, and how storm water can wash pollution into the storm drains. The following points are the most important for students to learn:

- Water is always moving around in a process called “The Water Cycle”
- Water is a precious resource
- Storm water is the water that comes from rain
- Storm drains protect our streets and sidewalks from flooding
- Storm water carries pollution into the storm drains
- Storm drains lead to the ocean

DID YOU KNOW? A city block creates five times more storm water runoff than rural areas.

DISCUSSION QUESTIONS

Once your students have finished watching the video, keep the conversation going with the questions below:

- What are three ways you use or interact with water every day?
- Do you know what mālama means? Mālama is a Hawaiian word that means, “to take care of.” What do you think he wants us to take care of?
- What kind of pollution do you think washes into the storm drains?
- Why is it important to stop pollution from washing into the storm drains?
- Can you think of who might be impacted by storm water pollution?

QUIZ ANSWERS

1. It is a part of the water cycle, moving around and around
2. To keep storm water from causing floods
3. The stream or ocean
4. It washes rubbish and pollution into the storm drains
5. All of the above

CHAPTER 2:

Three Types of Waste that Get Misplaced



INTRODUCTION

The second video in this series introduces students to three categories of pollution that often wash into the storm drains: sediment, chemicals, and green waste like grass clippings. The video covers their origins, how they affect the ocean, and what we can do to prevent them from entering the ocean. The following points are the most important for students to learn:

- Sediment refers to dirt and soil
- Sediment can pollute the ocean, cause harm to marine life, and damage coral reefs
- Chemicals that wash into the ocean include fertilizers, car soap, pesticides, and paint
- When people use too much fertilizer it can cause large algae blooms
- Green waste and grass clippings can reduce the amount of oxygen in the water, making it hard for fish to survive
- Green waste goes in the green bin

DID YOU KNOW? The Environmental Protection Agency (EPA) lists sediment as the most common pollutant in rivers, streams, lakes and reservoirs.

DISCUSSION QUESTIONS

Once your students have finished watching the video, keep the conversation going with the questions below:

- What do you think would happen if more people tried harder to keep sediment from washing into the storm drains?
- Are you surprised that paint contains chemicals that can harm the ocean?
- If you see someone fertilizing their yard, what advice would you share with them?
- How will you help your family next time they're doing yard work?
- Are you surprised that grass clippings can hurt fish?

QUIZ ANSWERS

1. Dirt and soil
2. All of the above
3. When it rains, it'll get washed into our drains and can cause algae blooms
4. In the green bin
5. It reduces the amount of oxygen in the water making it hard for fish to survive

CHAPTER 3:

What to do About the Terrible Two



INTRODUCTION

The third video in this series covers two categories of pollution that have a massively damaging effect on the ocean: oil and litter. This video explains how each category gets into the storm drains, their impact on the drains and subsequently the ocean, and what to do to help. The following points are the most important for students to learn:

- Oil that gets into our ocean can suffocate fish, make it hard for birds to fly and more difficult for turtles to swim and get their food
- Oil and grease can easily mix with storm water
- One way to minimize oil pollution is by washing cars on lawns, which will absorb the runoff
- Another way to minimize oil pollution is to go to car washes which are properly equipped to capture the runoff
- When litter blocks storm drains it can cause flooding
- Litter makes the ocean more toxic
- Picking up after your pet keeps harmful bacteria out of the water

DID YOU KNOW? The EPA estimates that American households improperly dump about 193 million gallons of used oil every year.

DISCUSSION QUESTIONS

Once your students have finished watching the video, keep the conversation going with the questions below:

- Have you ever seen a turtle or bird with oil all over it?
- Practice what you'd say to your parents or neighbors if they were washing their car the wrong way. Remember to be polite!
- What kinds of litter do you most often see on the ground?
- Where do you see the most litter?
- What's one thing you'll do to help keep litter out of the ocean?

QUIZ ANSWERS

1. It makes it hard for birds to fly by coating their feathers
2. The grass absorbs the runoff, so it doesn't wash into the ocean
3. It keeps harmful bacteria from washing into our storm drains when it rains
4. It causes our streets and sidewalks to flood
5. Car washes are equipped to capture oily water before going into our storm drain

CHAPTER 4:

The Solution to Pollution



INTRODUCTION

The fourth and final video in this series covers the key points from the previous three videos. It begins by highlighting the importance of our storm drains, next it reviews the five main types of pollution, and finally it asks students to think about how they can keep the ocean clean now that they are a quiz away from joining the Hawai'i Storm Patrol. The following points are the most important for students to learn:

- Sediment is the dirt and debris that can come from construction sites
- Chemical waste comes from everyday items like fertilizer, pesticides, and paint
- Green waste and grass clippings harm our ocean by taking oxygen away from the fish
- Oil and grease can wash into the storm drains when we don't wash our cars properly
- Litter blocks our storm drains and is also toxic for the ocean
- We all need to work together to keep our ocean clean
- We're all the solution to the ocean's pollution

DID YOU KNOW? One simple way to prevent storm water pollution is to sweep driveways and sidewalks instead of hosing them down.

DISCUSSION QUESTIONS

Once your students have finished watching the video, keep the conversation going with the questions below:

- What would happen if we didn't have storm drains?
- Can you recite the five main types of pollution without looking?
- What's one thing you can start doing today to make the ocean cleaner tomorrow?
- Is there an activity you can plan on doing with your parents to clean up pollution?
- How does it feel to join the Hawai'i Storm Patrol?

QUIZ ANSWERS

1. All of the above
2. All of the above
3. All of the above
4. All of the above
5. Yes

Storm Patrol Zoom Background

INSTRUCTIONS

Once students' have finished watching the four videos and completed the four quizzes, they'll be official storm water recruits. Here's how you can help them set up their new background:

STEP 1: Click "download" the on the summary page of the Hawai'i Storm Patrol remote learning site.

STEP 2: Save the Hawai'i Storm Patrol background image to your desktop.

STEP 3: Launch Zoom and click on the user icon in the top right corner.

STEP 4: Click "settings," select "virtual background" and then click the + icon.

STEP 5: Upload the Hawai'i Storm Patrol image, then select it as your virtual background.

STEP 6: Uncheck "Mirror my video" to get the background right.



Activities

Help your student protect our 'āina with some easy, fun activities they can try at home.

NEW RECRUIT

Even simple tasks like tidying up at home can be fun and eco-friendly. Here's an easy DIY activity for recruits of all levels. <https://www.trashfreehawaii.com/blog/upcycled-organization>

MID-LEVEL RECRUIT

Though it's important to start by protecting our local beaches and oceans, it's equally important to encourage students to become global citizens. Here's an activity for mid-level and top recruits that'll do just that. <https://www.trashfreehawaii.com/blog/diy-paper-mache-globe>

EXPERT RECRUIT

Cleaning up the environment begins with the choices we make at home. Composting is a great way to turn waste into eco-friendly material. Expert level recruits can try to start their own compost bin. <https://www.stormwaterhawaii.com/latest-news/community-outreach/diy-compost-bin>

