

# NeMO-Net Patch



Classifying coral reefs for science

## Intro

NeMO-Net is a free, single player iPad game where players help NASA classify coral reefs by painting 3D and 2D images of coral. Players can rate the classifications of other players and level up in the food chain as they explore and classify coral reefs and other shallow marine environments and creatures from locations all over the world!

## Mission

What if you could help NASA protect the ocean by playing a game on your iPad? In NeMO-Net, you paint real underwater photos of coral reefs and your labels go straight to NASA's supercomputer, which uses them to learn how to map reefs all over the world.

Players can rate the classifications of other players and level up in the food chain as they explore and classify coral reefs, shallow marine environments, and creatures from locations all over the world!

The more you play, the smarter the AI gets. And the smarter the AI gets, the better scientists can protect reefs.

## How does it work?

NeMO-Net inspires active learning and data fusion, using high-resolution 3D images of coral reefs captured with NASA's FluidCam instrument. This instrument is remarkable for its ability to remove the distortion created by ocean waves, creating incredibly detailed images and data that scientists can use to evaluate coral health.

These data are used to train low resolution data from NASA's Earth Observing System – including data captured from aircraft and data captured from satellites – to determine coral reef ecosystem makeup globally at unprecedented scales.

## Instructions

The NeMO-Net game has a built-in Field Guide with photos and 3D models of every coral type. To rank up in the ocean food chain, players must pass an accuracy test. NASA checks your work before you level up!

To earn your patch, complete the Mission Card (page 2) by using the NeMO-Net Field Guide.

NeMO-Net Patch Design



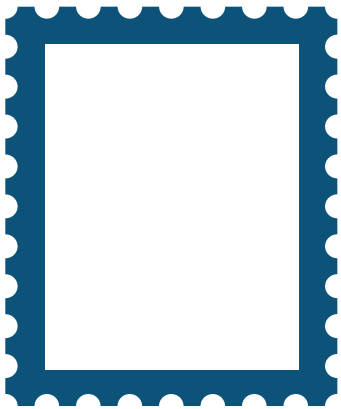
Get your patch at:  
[tinyurl.com/ames-earth-science-patch](http://tinyurl.com/ames-earth-science-patch)



# Mission Card

## 1. Check Field Guide

Before you paint, tap and hold any coral label to open the built-in Field Guide. Find ONE coral you have never seen before and sketch it here.



Coral name: \_\_\_\_\_

Looks like: \_\_\_\_\_

Healthy or stressed? \_\_\_\_\_

## 2. Classify Reef Images

Paint each reef image one at a time. Use the Field Guide if you are unsure what you see.

Each time you submit a reef, write one word below about what you saw.

Reef 1: \_\_\_\_\_

Reef 2: \_\_\_\_\_

Reef 3: \_\_\_\_\_

Reef 4: \_\_\_\_\_

Reef 5: \_\_\_\_\_

Reef 6: \_\_\_\_\_

## 3. Checklist

Check each one of these the moment you see it, screenshot, and label it in the game!

- Branching coral (like tree branches or antlers)
- Algae (fuzzy mat spreading over the reef)
- Sand or rubble (bare empty seafloor)
- Dome coral (round and smooth like a boulder)
- Bleached coral (white coral with no color left)

## 4. Check Stats

My food chain rank: \_\_\_\_\_

My coolest coral: \_\_\_\_\_

One thing that surprised me: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

***Share with your troop! Which coral surprised you the most? What did your reef look like?***

