



Manatee ID Card Game

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www.conservationtales.com/manatees



Teacher's Guide

Grade Level: Grades 3-12

Timeline: 30 min, with extension to include 1-2
class periods

Materials:

Printed sets of cards (1 per group)
Teacher's answer key

Driving Question: *How can the patterns of scars be
used by scientists to identify manatees?*

Objectives:

- I can match photos of manatees with scar charts to identify the animals.
- I can describe factors that make identifying manatees more challenging.
- I can design ways to use the skills in this activity to study other species of animals.

NGSS Alignment

This activity addresses the following standards
from the Next Generation Science Standards:

Disciplinary Core Ideas:

ETS1.B: Developing possible solutions

Science & Engineering Practices:

Developing and using models

Analyzing and interpreting data

Engaging in argument from evidence

Cross-Cutting Concepts:

Patterns

Cause & Effect

Background Information

Manatees are protected marine mammals that often share a habitat with humans. Manatees live in both fresh and salt water, and usually stay close to shorelines. They feed on seagrasses in the shallow ocean water or brackish water where rivers meet the ocean, and come into the rivers to find freshwater to drink every few days. This means they spend a lot of time near people and their boats.

Because they are mammals, they also breathe air, so they stay close to the surface. While a manatee can move very quickly over a short distance, they spend most of their time slowly swimming along looking for food.

This means manatees sometimes are injured in collisions with boats. Manatees can also get tangled in fishing gear and crab traps. These injuries often leave scars on a manatee's skin or take out parts of flippers or tail flukes.

While this is not a good thing for the manatee, scientists know that the marks on a manatee can be used to identify individual manatees. Researchers who study manatees want to know how long manatees live, how far they travel, how often they reproduce, and what kind of problems they have in

their environment. Identifying individual animals can help scientists understand how manatees live, and use that information to protect them.

At Mote Marine Laboratory and Aquarium, a team of researchers takes photographs of manatees and compares the pictures to diagrams made by researchers all along the Gulf Coast. The diagrams record the pattern of scars and injuries, and when scientists can positively identify an individual, they give the animal a name. They share these diagrams and data about each animal with other researchers to help study where manatees travel and how long they live.

To help new researchers learn to match photos with the diagrams, they use cards to help the scientist practice. This task is not always easy to do! If the water is murky or the animal is seen at an angle that does not show all the scars, matching photos with the database diagrams can be tricky!

In this lesson, students can practice the same skills with the same type of cards. This lesson guide provides downloadable templates, standards alignment, and tips for teachers to help them integrate this activity into their lesson plans.

Teacher's Guide (Cont'd)

Prior to Activity

If your students read *Conservation Tales: Manatees* prior to doing this activity, they will have read about some of the scientists who study manatees, including the work to identify manatees based on the scars and injuries they carry. If they have read the book, please refer to the images that show manatees with scars.

We also recommend you discuss the importance of observations prior to this activity. Students will be more successful with this task if they have practiced observing physical features of animals, including describing their observations.

Introducing the Activity

To introduce the lesson, begin by talking about manatees and the research scientists do to help protect this species, including the importance of identifying individuals. You can also discuss how manatees get the scars used to identify them. The background information on the previous page gives some information you can share with students. You may also choose to view some online videos of manatees and manatee researchers.

Groups

This activity lends itself to working in groups of 2-4 students. The cards are large enough to see details, and students may need to spread them out on a table.

Card Matching Activity

Each set has 24 cards. Twelve of these cards are photographs of manatees. Each of these cards has a number in small print next to the copyright logo. The other twelve are "scar charts," diagrams showing where specific manatees have scars. Each of the diagrams includes a name of the manatee.

The task for students is to match each photograph with the diagram that describes that manatee. When they are finished, groups should be able to tell you the names of the manatees on each photograph card. There is an optional "Manatee ID Record" you have groups fill out and turn in to check their work. You may also choose to go

around to each group to check their work. The latter makes it easier for students to have a 2nd or 3rd try to get the correct matches.

Some of the photos are easier to match than others. In some cases, two manatees have similar marks, so students need to notice where the scars are in relation to the flippers or tail or how large the scars are. In some photographs, the entire animal is not visible, and there may be marks on the diagram that are not seen in the photos. This accurately simulates the real challenges the manatee researchers face – rarely is a photograph so clear that all the features are visible!

As you circulate among the groups, you can guide their observations and discussion by asking if they notice how close the marks are to each other, or how they are positioned in relation to other body parts. You might also point out that the diagrams show a view directly from above the manatee, and the photos may be a side view. Parts of the scars might appear to be missing in either the diagram or photo. If students can visualize a three-dimensional manatee, it may help them make this connection. (A plush manatee toy or a plastic model can help with this!)

Answer Key

When students have completed their matches, the following key will help you check their answers. If they have any incorrect matches, encourage them to discuss how features to observe and look for more details.

Photo #	Name
1	Colby
2	Sarafina
3	Pancho
4	Ellis
5	Waffle
6	Sully
7	Oppa
8	Jelly
9	Mack
10	Mowgli
11	Scout
12	Crystal