I AM A MARINE BIOLOGIST

What to Know About This Kit:

Marine Biologists study the animals and plants that live in the ocean. This kit contains materials that will introduce you to the wide variety of marine life. The materials include actual specimens, reproductions, models, photographs, and books.

No marine biologist stays dry all the time, but there are a few specimens in the kit that shouldn't get wet, including the starfish and sponge. Please keep all the books and photo cards dry as well. Any items used in the water should be dried completely before putting them back into the kit.

Hands-on activities included in the kit offer suggested vocabulary, fun facts, and further reading. The chart below provides an overview of language, science, and math literacy skills highlighted in each activity.

	Activity #1 Marine Matching	Activity #2 Water Music and Motion	Activity #3 Why is a Blue Crab a Blue Crab?	Activity #4 Sinking and Floating
Language	Sensory terms, Animal body parts	Music terms Active listening	Colors, Patterns,	Position terms
Math	Matching, counting		Size, Shape, Numbers	Sorting Charting
Science	Observation, sensory exploration, descriptive investigations	Sounds	Body Parts	Prediction, Experimentation
Physical	Fine motor	Whole body		

Suggested Ages: 3-5 years

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Activity #1: Marine Matching

SUMMARY: Scientists use many senses to observe the world.

WORDS TO USE:

Senses—seeing, feeling, smelling, hearing, tasting
Observe—using one of our senses to learn about something
Model—a copy
Shell—a hard covering
Fin—what fish use for moving instead of legs
Smooth—no bumps
Fish—water animals that have scales and breath water
Reptiles—animals that have scales, breath air, and may live in water or on land
Mammals—animals that have fur, warm blood, breath air

MATERIALS TO USE:

10 ocean animal models (small plastic): manta ray, eel, elephant seal, sea turtle, lobster, crab, octopus, humpback whale, sailfish, hammerhead shark
10 photo cards
Drawstring bag
Goggles (optional)
Bubble bath (optional)

ACTIVITY:

- Many different animals live in the ocean.
- Look at the 10 ocean animal models. Count them.
- Find the matching photograph.
- Have your grownup share the fun facts on the back of each card.
- Talk about what makes the shape of each animal special? How many legs does it have? Does it have smooth skin? A shell? Fins?
- Put the ocean animal models into the drawstring bag.
- Use your fingers to find the animals that match each picture.
- Do the same activity, but this time do it in the bathtub!
- Cover the entire surface of the bathtub with bubbles so that you can't see below.
- Have your grownup show you one picture at a time. See if you can find the animal.

Please keep the photo cards dry!

OBSERVATIONS:

- Can you sort the animals by the number of legs? By color?
- Which are fish? Mammals? Reptiles?

DID YOU KNOW?

- Lobsters and crabs each have 10 legs.
- Manta rays and sharks both have skeletons made of cartilage rather than bone. Cartilage is the same material found in your nose and ears. It provides shape but is flexible.
- Turtles, fish, sharks, rays, and seals have bones inside their bodies, just like people do.
- The octopus, lobster, and crab don't have bones. The lobster and crab have a hard covering called an exoskeleton on the outside of their bodies. To grow they have to crawl out of the old exoskeleton and grow a new, larger one.
- A soft-shelled crab is a crab that has recently shed its exoskeleton. It takes a few days for the new one to harden

SUGGESTED READING

E Cummings	Chadwick the Crab
E Cummings	Meet Chadwick and His Chesapeake Bay Friends
E Peck	Way Down Deep in the Deep Blue Sea
E Yoon	Deep Sea Drive: Lift-the-flap Adventures
J 639.8 K	Life-size Aquarium
J 597 S	Fabulous Fishes

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Activity #2: Water Music and Motion

SUMMARY: Marine animals such as whales communicate with a variety of sounds that are very different than sounds heard on land.

WORDS TO KNOW:

Communicate—to exchange information from one to another
Click—a short, sharp noise
Pitch—how high or low a sound is

MATERIALS:

Recording of Whale Sounds. Many can be found on YouTube or on DVD's about whales or marine mammals
Rhythm instruments (optional)

ACTIVITY:

- Listen to a humpback whale. Can you make a sound like that?
- Move like a humpback whale while making sounds
- Listen to a dolphin. Can you make a sound like that?
- Move like a dolphin
- Listen to sounds of other whales, such as killer whales or belugas
- Can you name some other water animals? What sounds do they make? How do they move?

OBSERVATION:

- Why do you think the whales make these sounds?
- Are these high-pitched sounds? Low?

DID YOU KNOW?

- Water carries sound farther than air.
- Some whale songs can travel over 500 miles through the water
- Beluga whales are called sea canaries. Do you think their sounds would be deep and low, like the humpback whale? Find out!

SUGGESTED READING AND LISTENING

E Ziefert	Beach Party!
JCD Favorites Raffi	Animal Songs
JCD Favorites Raffi	Baby Beluga
J 599.525 S	I am a Whale: The Life of a Humpback Whale
J 599.542 L	Hello, Baby Beluga

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Activity #3: Why is a Blue Crab a Blue Crab?

SUMMARY: Someone had to be the first person to give an animal the name we use. Let's pretend that we are the first people to see an animal. What name would we give it? Why? By talking about an animal and its environment we can build vocabulary and observation skills.

WORDS TO USE:

Color words such as red, blue, green, black, pink
Size words such as big, small, large, wide
Pattern words such as spot, stripe, zig-zag
Math words such as one, two, three, few, many
Body words such as chin, throat, chest, wing
Shape words such as round, star, square

MATERIALS:

Books and magazines with pictures of aquatic animals. These can be from either the adult or children's part of the library.

ACTIVITY:

- Find a book or magazine with lots of pictures of ocean life.
- Pick an animal from one of the pictures.
- Talk about the animal and other items in the picture.
- What would you name this animal?

OBSERVATIONS:

- Does it have spots or stripes? Just one? A few? Many?
- What color are its eyes?
- What shapes do you see?
- Does it have any special colors or markings on one of its body parts? Which one?
- What color is it? Does it have more than one color?
- How many animals are in the picture?
- What do you think is happening?
- Is it warm or cold here? How do you know?

DID YOU KNOW?

- Some animals were named for their size, such as “Giant Squid” or “Pygmy Sperm Whale.”
- Some animals were named for their shapes, such as “Starfish or Sea Star.”
- Some animals were named for their color, such as “Blue Crab” or “Gray Whale.”
- Some animals are named after the first person who named it, such as “Steller Sea Lion.”
- Some animals are named for a pattern, such as “Striped Bass.”
- Some animals are named for a body part, such as “Whitebeak Dolphin.”
- Some animals are named because they reminded someone of another animal: Sea lion, catfish, seahorse.
- The scientific name of a blue crab is *Callinectes sapidus*, which means “tasty beautiful swimmer.”

SUGGESTED READING

E Sherry	I’m the Biggest Thing in the Ocean
E St. Pierre	What the Sea Saw
J 578.77 S	About Habitats: Oceans
J 597 S	National Audubon Society First Field Guide: Fishes
J 599.0973 B	Mammals
	National Geographic Magazine
	Ranger Rick Jr. Magazine
	Games and Interactives section, Montereybayaquarium.org

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Activity #4: Sinking and Floating

SUMMARY: Water is a special chemical. Some objects sink when they are put in water, while others float.

WORDS TO USE:

Surface—the top of the water
Sink—move downward in water
Float—stay on the surface of the water
Prediction—the guess a scientist makes before doing an experiment

MATERIALS:

Common household items such as: cork, wood, spoon, Styrofoam
Plastic tub, sink, or bathtub
Water
A chart (optional) Label the chart with SINK on one column, FLOAT on the other

ACTIVITY:

- Put water in a tub
- Pick up one of the objects. What is it? What is it made of?
- What do you think will happen when we put it in water? Will it sink or float? Scientists call this guess a prediction.
- Try it. Why do you think it did that?
- Repeat these steps for each object.
- Put all the objects that floated together. If you made a chart you can put them in the FLOAT column. What do you think these have in common?
- Put all the objects that sank together. Use the chart if you have one. What did they have in common?

DID YOU KNOW?

- Natural corks are made from the bark of a tree
- Some fish have a swim bladder, a bubble of air, in their bodies that when squeezed causes them to sink.

SUGGESTED READING

E Burningham	Mr. Gumpy's Outing
E De Seve	The Toy Boat
E Gibbons	Boat Book
ICR E Rey	Curious George: The Boat Show
PTC 372.5 A	Math and Science Investigations