Educator Guide to What Makes A Fish A Fish?

Grade Level 1 - 3

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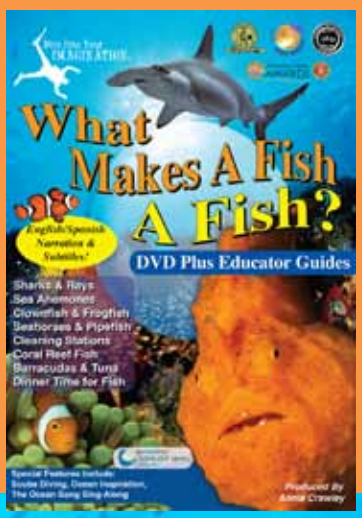
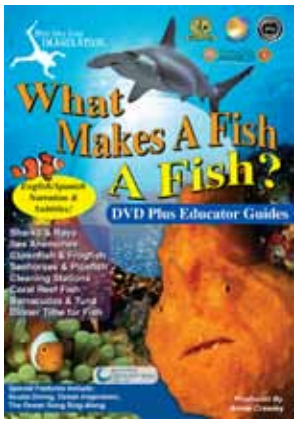
By Michele Hoffman Trotter
and Annie Crawley



Dive Into Your IMAGINATION®



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By: Michele Hoffman-Trotter
& Annie Crawley, aka Ocean Annie

Dedicated to Mother Ocean, Harriet Pergande, and Sandra Hoffman

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Ocean Annie

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Educators Guide to What Makes A Fish, A Fish

Dive Into Your Imagination is changing the way a new generation views the ocean and themselves. Founder Annie Crawley, born and raised in Chicago, did not see the Ocean until College. Learning to scuba dive changed her life. Scuba diving allows people to explore, study, and experience our ocean. Dive Into Your Imagination was founded and this project was conceived to bring the ocean to children via educators by integrating all content areas, including character education and a behavioral component in which children use their imagination and become scuba divers during lessons. Students learn the golden rule of scuba diving and of life: *"If you get excited remember to: Stop, Think, Breathe slowly and then Act!"* Contact us if you are interested in bringing Annie Crawley, aka Ocean Annie, to your school system for dynamic multi-media programs designed to leave a lasting impression on students, parents, and teachers.

Our ocean is 90% unexplored; yet we are completely interconnected. Our ocean is responsible for our weather, oxygen, water, and 70% of our population relies on the resources from the sea as their main source of protein. Everything we do on land affects our ocean. We want children, educators and parents to love the ocean because we protect what we love. Dive Into Your Imagination wants you to become involved in the Ocean Revolution happening on our planet. Please call, text, email, bing, youtube, facebook, tweet, tumble, and share your experiences with us or follow us on our blogs and through social media. *We are a global society and our ocean is our universal language.*

"Sometimes we need one person to believe in us until we can believe in ourselves." As educators, you are that one person for each of your students.

Award winning Underwater Cinematographer and high definition pioneer, Tom Campbell, was that person for Annie Crawley. She met Tom on a rainy afternoon 14 years ago when Manta Queen Dr. Andrea Marshall was a student at UCSB working for him. Annie needed a member of the National Press Photographers Association to approve her application and she targeted Tom because he was her underwater photography hero. When she told Tom she wanted to specialize in the underwater realm, Tom said, "It's the toughest industry in the photographic world."

He was not kidding; his brutal honesty committed and pushed her to demand excellence. Tom left a lasting impression on Annie, as all great teachers do and his words of encouragement still ring in her head. Tom watched Annie grow and during the past decade he coached, mentored and even hired her to go on expedition. Because of Tom's guidance and willingness to mentor Annie, she too has become the teacher sharing the knowledge through her books, videos and these educator guides. A true Guru is forever the teacher, forever the student. Special thanks go to Tom Campbell for his belief in Annie, the vision of Dive Into Your Imagination, and the desire to help educate our world about our ocean.

Give thanks and gratitude for everyone and everything.

The Dive Into Your Imagination series of DVDS, books and educators guides would not have been possible without the support of grants from the Save Our Seas Foundation (SOSF). SOSF is a non-profit organization that initiates and supports numerous projects focused on conservation, awareness, research and education of the global marine environment. For more information visit www.SaveOurSeas.com

Marine ecosystems around the world have been greatly diminished due to overfishing, pollution and habitat loss. To make a difference, together we need to raise awareness, create educational programs and inspire people to appreciate the intricate nature of how we are all bound to the health of the sea. Through these materials, we hope you can teach and inspire children to become the future custodians of our marine world. As long as there are people who care and take action, we can and we will make a difference.

THANKS TO OUR CONTRIBUTORS

These lessons would not have been possible without the generous and brilliant contributions of exceptional educators, artists, and subject matter experts. We are infinitely grateful for your experience, ideas, editorial support, and unwavering belief in this project. Special thanks to Amy M. Ludwig, extraordinary educator, mother, and thought leader and Mike Braniger for believing in the vision before it was conceived!

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Michele Hoffman-Trotter wishes to personally thank Annie Crawley for her ambition, inspiration, and vision; my beautiful boy Ryan, my primary motivation for wanting to make the world a little better and cleaner; my husband Bob, my rock (and when needed my backbone); my spectacular parents, Sandy and Les who always believed I could achieve; and my Grandpa Dr. Herbert P. Albert; who had the foresight and wisdom to tell me when I was a very small child that "our future is the ocean".

We create our character and our lives. Faith, Courage, Enthusiasm coupled with Patience, Persistence, Perseverance and Passion are the seven words Annie Crawley lives by. There is great power in the words we say to ourselves and the words we give to others. Motivational Speaker Les Brown has become a force in Annie's life as he has mentored her for more than a decade.

"Can you do more than what you are doing today? Whatever goal you have, you first must believe it is possible. Embrace yourself and believe. You can go beyond what you are capable of if you believe in yourself."

Annie Crawley is a member of the Les Brown Platinum Speakers, trained by Les Brown. For more information on bringing Ocean Annie, aka Annie Crawley to your school, group, or for professional development, contact her today.

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HOW TO USE THIS BOOK

Whenever a scuba diver or snorkeler enters the ocean, they experience a world in which the unbelievable is real. Purple staghorn coral, rainbow fish, sharks, dolphins, sea stars and creatures that look like they come from outer space live beneath the surface of our one ocean. Human beings have a direct connection with the sea, just think of how you feel when you see a dolphin. It is our goal that you use the ocean to engage your students to learn English, Science, Geography, Communication Skills, Math and Character Education.

The more we learn about the ocean, the more we understand how it affects our weather, climate and makes earth habitable. Humans are inextricably interconnected to the ocean. New species are being found beneath the sea as the ocean is 90% unexplored. These lesson plans allow you to enter the water with your students as Imagination Explorers and scuba divers, so you can view this underwater world as a brilliant masterpiece. The ocean is an underwater living museum, providing both education and entertainment. Together, you will cultivate many ideas on this journey. Encourage your students to question all they see while guiding them to seek answers. Help them apply scientific inquiry to all aspects of their lives.

On the Dive Into Your Imagination DVDs there are always bonus materials you can view to gain a deeper understanding for what one needs to be a scuba diver and underwater explorer. You can also purchase complimentary books, DVDs and more lesson plans combining photographs, cartoon characters and high definition footage for further discovery and learning. The Adventures of Ocean Annie, Makaio, Fringy the Ichthyologist Fish and Finnagain the Friendly Shark will engage your students for hours. You may even want to visit your local scuba diving shop to discover scuba diving in a swimming pool near you!

Thank you for becoming an ocean classroom. With *The Educators Guide to Explore What Makes A Fish, A Fish*, you are going to cultivate students who want to use their imagination, learn and discover. Thanks for helping change the way a new generation views the ocean and themselves. Our ocean needs to be protected and we protect that which we love. We look forward to your emails with questions, suggestions, comments, or to find out how you can bring the real Ocean Annie to your school! Remember to keep diving into your imagination!

Hi, I'm OCEAN ANNIE!
WELCOME! We have lots of FUN tips to share with you and your students in all the lessons and activities!

INTRODUCTION

The *Educators Guide to Explore What Makes A Fish, A Fish* brings the award winning Dive Into Your Imagination DVD, *What Makes A Fish, A Fish* alive in your classroom. This guide corresponds with each chapter from the DVD of the same title produced by Annie Crawley about life in the ocean. These cross-curricular lessons are ideal for young learners and bring science together with Art, Language Arts, Geography, Math, Music, Social Studies, Movement, Teamwork, Collaboration, Character Building Skills, Imagination Play and more.

For each chapter of the video there is a lesson plan that includes:

a. Character education and imagination play for your students.

b. A set of student questions correlating to the lessons designed to prompt discussion and enhance learning during video and multi-media viewing.

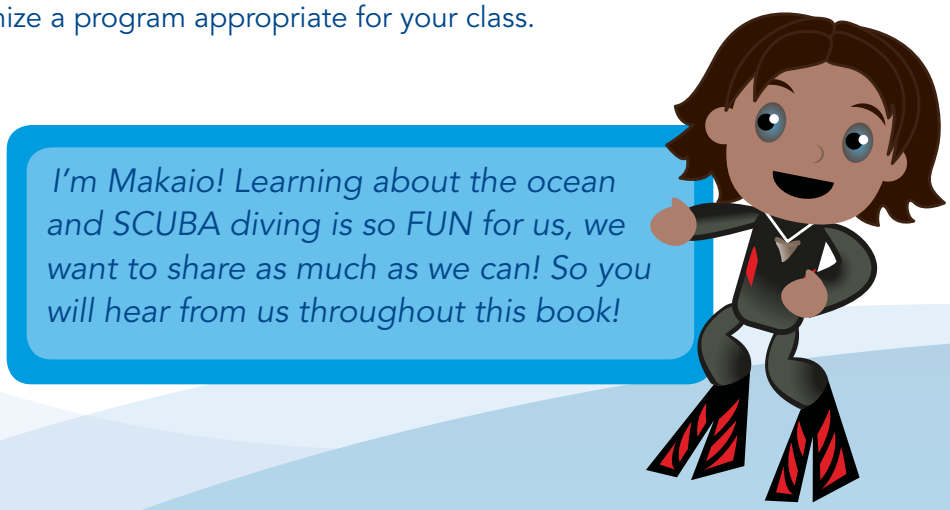
c. Ideas and support materials you can use to build learning centers in your classroom which combine science with other core subjects.

d. A glossary of scientific terms, eco-tips and websites for educator content support.

e. Suggested book lists and extension activities that can be used to bring an ocean of imagination flooding into your class.

WHO IS THIS BOOK FOR?

This book is designed for educators to use in planning ocean based activities for students combining science, literacy, math, geography, and character education. It is important to recognize individual and collective capabilities of the students in your class, and modify activities to address the needs of each student. Though each unit provides several learning station activities, we suggest choosing 2-3 of them for use at any one time. Our goal is to provide you with many tools and options in order for you to customize a program appropriate for your class.



OCEAN tips share fun and engaging ocean facts from the recommended Ocean Literacy Standards.

SCUBA tips share physical and mental behaviour tips you can use to keep your students engaged in the activities.

HOW IS THIS BOOK ARRANGED?

Each chapter of the DVD, *What Makes A Fish, A Fish,* is presented starting with an introductory question and answer section giving you the tools necessary to introduce and pre-teach important aspects of the video segment. Following each introduction are activity center concepts with extension ideas. At the end of the book is an appendix aligning each lesson with key educational standards and a master book list for suggested further reading.

Each chapter contains the following:

1. General Concepts/Topics to Teach
2. Objectives
3. Character Education
4. Treasure Chest of Vocabulary Words
5. Required Materials
6. Anticipatory Set: Lead In Questions and Answers
7. Imagination Play Script
8. Classroom Activity Stations
9. Extension Ideas and Journaling
10. CCSS Alignment
11. Book List/Applications/DVDS Specific to tie Activities and Character Education
12. Closure and Follow-Up
13. Plan for Independent Practice
14. Transcript of DVD
15. Go Blue Environmental Section

Below is an overview of what to expect in each of the sections listed above.

General Concept/Topics To Teach

This part of the book explains the key topic addressed in the lesson plans and the central ideas or take away themes for students. Science is a fundamental part of our lives and the scientific method of inquiry is a cornerstone enabling us to think logically through everyday issues. These lesson plans are underlain with science, math, English, art and imagination concepts, and include a cross curricular approach to science based thinking. In addition, the students will learn how to think, synthesize information and take a global approach to learning about our environment.

Objectives

This section explains the key purpose of the lesson and concepts or ideas that are to be conveyed in greater detail. Also included are the skills students will have an opportunity to exercise as they participate in the learning station activities.

Character Education

Dive Into Your Imagination materials encourage students to imagine they are marine biologists, scuba divers, scientists, artists, boat captains, submarine pilots, underwater filmmakers and much more. Through our specialized behavioral philosophy, we combine a solid foundation in science with imagination to achieve a cross-curricular approach to education. This methodology is designed to make science relevant in daily life and take exploration to a new depth of understanding.

Ocean Annie provides educators with a basic understanding of what it is like to be a scuba diver so you can become a Scuba Instructor in your class. You can then guide students toward becoming imagination explorers and scuba divers. Most importantly, knowing the fundamental rules of scuba diving will provide you with an opportunity to manage your classroom in a whole new way through our specialized style of communication skills. This section addresses the basics of Scuba diving and provides you with the framework needed to help your students **Stop, Think, Breathe Slowly and then Act**. This tool helps your students center their bodies and minds as they begin to explore the exciting world of science and the ocean. Use your imagination and take your students scuba diving in your classroom each day!

Treasure Chest Of Vocabulary Words

This section introduces vocabulary words unique and specific to the ocean education topics being discussed in the lesson plan. At the end of the book is a complete glossary with definitions you can use to create word lists or an Ocean Dictionary for your classroom.

Required Materials

This is a list of all items and tools needed for each lesson plan, and then within each specific activity station is a required material list for the activity.

Anticipatory Set: Lead In Questions And Answers

Lesson plans include a set of introductory discussion questions designed to assess and build students' background knowledge. There are many effective strategies teachers can use to help begin a lesson. Below are descriptions and icons of popular strategies we suggest to help get you started.

KWL

"KWL" methodology can be very effective with young learners. This strategy addresses what the students already **Know**, what they **Want** to know, and by the end of the lesson what they have **Learned**. KWL is effective even with non-readers. When educators use written lists, it provides a visual point of reference for the learner to measure progress. A discussion comparing and contrasting prior knowledge to knowledge gained is important to help the students further understand achievement and boost self-esteem.

KWL involves dividing a board or large sheet of paper into three columns labeled K, W, and L across the top. Before the activities begin, the educator will screen students for what they think they already know about the subject. Educator will collect students' ideas on the board in the "K" column. Writing a student's name or initials next to his or her fact is very empowering for them.

Next, ask students what kinds of facts they *want* to know "W" and record those in the "W" column. At this point it is time to watch the chapter of the DVD corresponding to the lesson. This is also an ideal opportunity to ask students to become buddy teams as they watch the film, and to "Think, Pair and Share" about what they experienced while watching the film. As scuba divers, working in teams comes naturally. Asking students to work as buddies as they look for information together, and share what was learned with a buddy is an easy way to increase socialization and promote consensus before fact sharing with the larger group. As students complete their activities, continue to add new facts they have learned to the "L" column.

What Makes A Fish DVD can be viewed in English, Spanish, or with *no dialogue at all*. To pick the language selection, visit the main menu of the DVD and make a choice from the tabs English, Spanish or Music Only. You can play chapters more than once to shift student focus and have complete emphasis on the visual content. Be prepared for your students to get very excited because the real ocean animals in the DVDs are professionally filmed in a way that incorporates multi-sensory stimulation. All Dive Into Your Imagination programs are designed to foster a love of the Ocean because we protect what we love.

List – Group – Label

Another effective introduction method is List-Group-Label. Begin to "List" by asking students to brainstorm words they can relate to or reminds them of the topic being discussed. For example if the subject is fish, students might suggest words like swim, fins, or gills. Record student responses, even those that do not accurately reflect the main topic.

Next, provide students with an opportunity to break into small groups or buddy teams and work to group the class list of words into subcategories. Inaccurate words may be ruled out at this time. Challenge students to explain reasoning for placing words together or discarding them.

Finally, ask students to label or title the groups of words they have formed. For example, fins, mouth, and gills could be labeled "body parts". The groupings can be revisited after watching the video to check for inaccuracies, students may also regroup or add to categories to reflect their learning.

Anticipation Guides

Another introduction exercise you can use are anticipation guides. Write several true or false statements about key ideas from the main topic in chart form. Columns can be provided following the statements for the student to check off true or false, yes/no, or agree/disagree, etc. Read each of the statements and ask students if they agree or disagree with the statement. Have the students watch the film clip paying close attention and listening for the statements they want to verify. They may take notes during this time or make changes to their anticipation guide. Bring closure to the session by rereading each of the statements and determining the correct answer. Challenge students to make changes to the false statements to make them true.

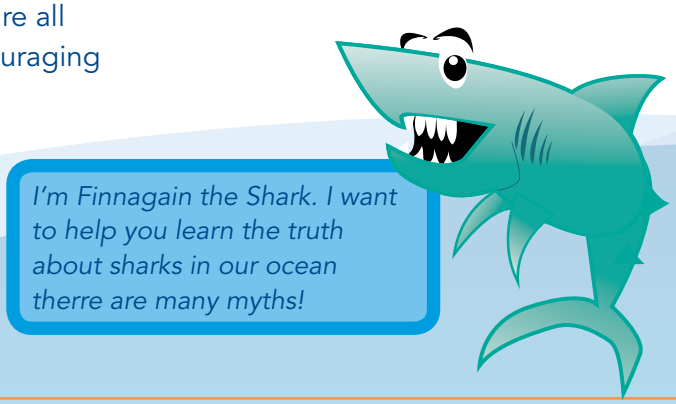
Word Maps

One final introductory exercise idea is to build word maps. Begin by selecting a key vocabulary word from the unit and placing it in the center of the map. Help students define the word by placing boxes around the key word including: definition, synonyms, and antonyms. Students can also use the word in a sentence, or draw a picture. Ask students to suggest words or phrases to put in the other boxes, which describe the key vocabulary word. The class can review the word map following the video to make changes and or additions to reflect their learning.

Imagination Play Script

Each lesson includes elements of imagination play. Everything we use in our lives from the pencils we write with, the chairs we sit in, to the mask and fins we use to snorkel began with an idea in someone's mind. Through experimentation, knowledge, education, and creativity our ideas turn into reality. Dive Into Your Imagination wants children to be able to actively use their imagination as a fundamental component of every lesson.

Science is the foundation of logical thought, directed by inquiry, curiosity, and the quest for knowledge. Science is how we figure things out. It is a systematic way of thinking. We are all scientists in our exploration of life. By encouraging the use of imagination in children, we enhance their learning and their lives. It is important for children and adults to know they do not have to aspire to be a scientist in order to communicate ideas that are scientific. Science is important in art, entertainment, medicine, law, and every discipline in which we engage. This section will give you ideas to stimulate your students' imagination before the activity begins.



Classroom Activity Stations

A complete "materials" list provides you with items required for each activity set up. The "Objective" section describes the purpose of the activity, the skills and the abilities the activity helps your students build. A "Lesson Procedure" section details the steps of the lesson together with discussion ideas.

Extension Ideas And Journaling

This section provides you with ideas to further learning by including extra activities you can have your students do individually, as buddies, at home, or as a class. We also recommend each student creates a journal. Asking students to collect their work in a journal is an integral part of helping them to see in a concrete way how much knowledge has been gained on a subject. Compiling art work, activity sheets, vocabulary, sentences, and stories into a central point of reference, such as their own *What Makes A Fish A Fish Book,* provides students with a reflection of what they have learned.

Common Core State Standards CCSS Alignment

This section shows you how each lesson aligns directly with Common Core State Standards (CCSS). We will be building this area to demonstrate how our lesson elements align with Math, Literacy, and Science standards. As you use this guide and create other connections, please share these with us. We will be continuing to update as more and more educators use the ocean to teach math, science, and literacy! Thanks for your help in continuing to advance this guide.

Book Stalls and Master Book List

Suggested topic specific books are recommended at the end of each lesson so you can build a book stall for students to explore and further their knowledge on the subject being taught. All book suggestions have been reviewed and approved by educators and team members of Dive Into Your Imagination. They are the highest quality, accuracy, and content available for each subject on the market. The book stall list also incorporates a bonus activity, incorporating the character education topic related to the lesson. At the end of this Educators Guide, a master book list contains all of our book suggestions, including appropriate age range and a brief summary of the book.

Closure and Follow Up

Here we provide you with ways to discuss and review what the class has learned, assess learning, detail plans for independent practice, and underscore the connectivity between this activity and other academic subject areas.

The reflection discussion time can also be used to talk with students about relationships in nature and our important role in keeping the planet healthy. Tie ins can include things your students already understand, such as the way we depend on doctors and dentists to keep our own body healthy. It is essential to have respect and concern for our planet and all living things because human beings rely on nature and our ocean for a healthy planet. This relationship with nature can be similar to the relationship we have with our parents, ourselves, and loved ones. Emphasize there is no animal in the ocean or anywhere that lives completely alone or independent of other living things, we are all interconnected. Pick out elements from the lesson that demonstrates our interconnection.

Encourage students to think of ways humans rely on the ocean to illustrate the important connection that all living things have with a healthy ocean. The phytoplankton mass in our ocean is responsible for 70% of the oxygen our planet needs. Everything we do on land affects our ocean. If our Ocean is unhealthy, our planet is unhealthy.

Plan For Independent Practice

Ideas for expanding your lesson are provided here. The concepts and ideas provided here can be used to perpetuate study beyond the classroom, foster a student's independent abilities, and even create a class or school project reaching families and your community.

Transcript of DVD

The text from the DVD is provided so you can select words or review content as needed for use with your class. You can also have students practice reading the script and create their own story based on the script. Please note that a script for a DVD is not necessarily grammatically correct if reviewing from a language/literacy point of view. Scripts are created so they sound correct to the listener.

Go Blue! Environmental Section

Go Blue is information for you, and for your students to share with their families. These can be reproduced, posted, or sent home as a way for families to stay in touch with what their children are learning. They raise awareness of issues impacting ocean health and give tips and ideas about how we can all change our daily lives to help restore health to the planet. Using these concepts, families take an active role in protecting our environment. This tip section provides educators with ideas for extension activities and additional lesson plans.

Ocean Literacy

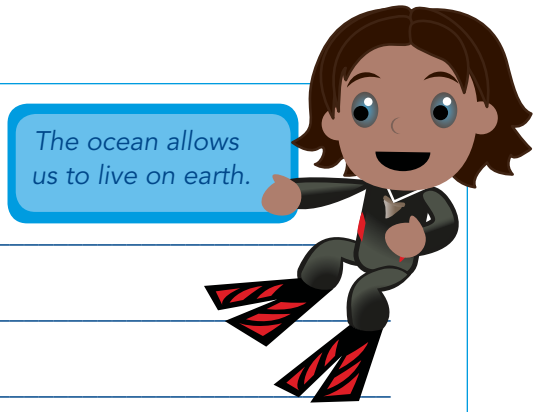
Within each activity a direct connection is drawn to principles called Ocean Literacy Standards endorsed by the National Marine Educators Association. The Ocean Literacy Campaign is a wide-ranging, collaborative and de-centralized effort by scientists and educators to create a more ocean literate society.

Standards

All of the Dive Into Your Imagination lesson plans are designed to achieve benchmarks set out under Common Core State Standards (CCSS), Mid-continent Research for Education and Learning (McCrel), and Ocean Literacy Standards (OLS). Teachers can make informed decisions and modifications as needed to align with the needs mandated by individual state or district standards. Please share with us any additional CCSS alignments you create.

Now, slip into your wetsuit, get your mask on, grab your fins. Let's get ready to Dive Into Your Imagination and explore our Underwater World! On the count of three, you know the magic words! 1, 2, 3…imagination!

NOTES



Treasure Chest Terms

These are definitions to the words used in each chapter of this Guide.

Algae

» Any chlorophyll-containing, mainly aquatic eukaryotic organism ranging from microscopic single-celled forms to multicellular forms 100 ft. (30 m) or more long, distinguished from plants by the absence of true roots, stems, and leaves.

Anemone

» Any of the relatively large, solitary polyps of the phylum Cnidaria. Unlike the closely related corals, they do not create a calcium carbonate skeleton. Most are predators, immobilizing their prey with the aid of specialized stinging cells called nematocysts.

Bacteria

» Single-celled organisms that exist singly or in chains, various species of which are involved in fermentation, putrefaction, infectious diseases, or nitrogen fixing.

Bone

» Hard connective tissue forming the substance of the skeleton of most vertebrates composed of a collagen-rich organic matrix impregnated with calcium, phosphate, and other minerals.

Camouflage

» Concealment by some means that alters or obscures the appearance: *Drab plumage provides the bird with camouflage against predators.*

Cartilage

» A firm, elastic, flexible type of connective tissue of a translucent whitish or yellowish color; gristle.

Cell

» Microscopic body that is the basic structural unit of all organisms.

Chromatophore

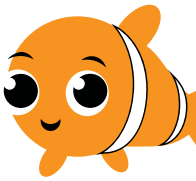
» (kr*uh*-**mat**-*uh*-fawr) A cell containing pigment, that through contraction and expansion produces color change in the skin, as in fishes and octopuses.

Cleaning Station

» An area on a coral reef where fish gather to be picked free of parasites, dead skin, or to generally be cleaned by other reef animals specialized to perform this task.

Denticles

» A small tooth or toothlike projection.



Disguise

» To change the appearance or guise of so as to conceal identity or mislead, as by means of deceptive garb.

Diversity

» A point or respect in which things differ. Variety or multiformity: *"Charles Darwin saw in the diversity of species the principles of evolution that operated to generate the species: variation, competition and selection" (Scientific American).*

Ectotherm

» A member of the group that displays the ability to regulate its internal body temperature largely by exchanging heat with its surroundings.

Elasmobranch

» Any of numerous fishes of the class Chondrichthyes, characterized by a cartilaginous skeleton including the sharks, rays, chimaeras, and skates.

Elasmobranchologist

» A scientist who specializes in the study of sharks and other fish that possess cartilage based skeletons.

Treasure Chest Terms (Continued)

Endemic

» A group of organisms is endemic when they are found in a particular geographic area.

Esca

» A piece of flesh that is attached to the illicium and modified to look like a lure or bait that will attract potential prey.

Estuary

» That part of the mouth or lower course of a river in which the river's current meets the sea's tide.

Fins

» Limbs used to help the fish find balance and steer swimming.

Fishes

» Correct plural of fish when referring to multiple fish of different species. "Fish" is the correct form when talking about multiple fish of the same species.

Gills

» The respiratory organ used by the fish and other aquatic animals to pump gases in and out of the body.

Herbivore

» An animal that feeds chiefly on plants and algae.

Hover

» To hang fluttering or suspended.

Hydrodynamic

» Having a shape or features that allow a shape to move through the water more efficiently.

Hygiene

» Condition or practice that supports the preservation of health, as cleanliness.

Ichthyologist

» (ik-thee-**ol**-*uh*-jist) a scientist who studies fishes.

Ichthyology

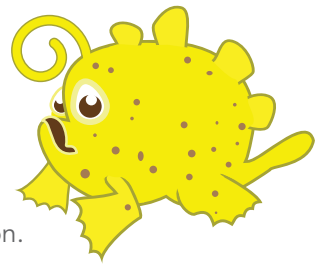
» (ik-thee-**ol**-*uh*-jee) The branch of zoology dealing with fishes.

Illicium

» the first spine of the dorsal fin is modified into a moveable fishing rod or luring apparatus.

Invasive Species

» A species that is not native to a certain area and potentially out-competes natural species.



Invertebrate

» Any animal lacking a backbone.

Mating

» To pair for the purpose of reproduction.

Naturalist

» One who is an expert or interested in botany or zoology (particularly out in the field) and studies plants and animals in their natural surroundings.

Omnivore

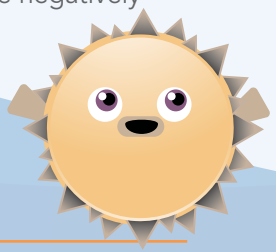
» An animal whose normal diet includes both plants and animals.

Organ

» A grouping of tissues into a distinct structure, as a heart or kidney in animals or a leaf or stamen in plants, which performs a specialized task.

Parasite

» Organism that lives on or in another species from which it receives a benefit while negatively impacting the host organism.



Treasure Chest Terms (Continued)

Piscivore

» A carnivorous animal, which lives on eating fish.

Planktivore

» An animal feeding primarily on plankton.

Plankton

» A generic term for organisms that float in the sea and cannot swim against a current.

Population

» The assemblage of a specific type of organism living in a given area.

Predator

» Any organism that exists by preying upon other organisms.

Scales

» One of the hard, bony or dentinal plates, either flat or denticulate, forming the covering of certain other animals, as fishes.

Scientist

» A person having expert knowledge of one or more sciences, especially a natural or physical science.

SCUBA

» The commonly used acronym for "self-contained underwater breathing apparatus" referring to portable equipment containing compressed air and used for breathing under water. SCUBA divers carry their air supply with them below the surface of the water.

Skeleton

» The bones of a human or an animal considered as a whole, together forming the framework of the body.

Species

» The basic category of biological classification, composed of related individuals that resemble one another, are able to breed among themselves, and produce offspring capable of breeding.

Swim bladder

» Gas-filled organ that allows some fish to control their buoyancy.

Symbiosis

» Any interdependent or mutually beneficial relationship between two organisms.

Tentacles

» Elongated flexible organs present in some animals, especially invertebrates. Usually, they are used for feeding, feeling and grasping.

Type

» A number of things or persons sharing a particular characteristic, or set of characteristics, that causes them to be regarded as a group.

Vertebrate

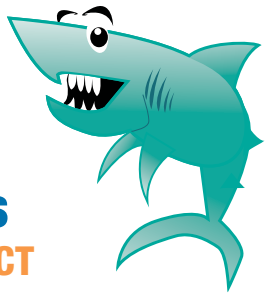
» An organism that has a brain enclosed in a skull or cranium and a segmented spinal column.

Water

» a transparent, odorless, tasteless liquid, compound composed of hydrogen and oxygen.

Zoologist

» A scientist who specializes in the study of the structure, function, behavior, and evolution of animals.



SPECIAL SECTION: Ocean Annie teaches you about Scuba Diving!

Essential Communication Skills for Scuba Divers

COMMUNICATION SKILLS: STOP, THINK, BREATHE SLOWLY, THEN ACT

When snorkeling or scuba diving you wear a mouthpiece for breathing so you need to learn how to talk with your hands, not your voice when under water. Scuba divers use hand signals, eye contact, and special waterproof slates to write notes to one another. Scuba divers dive in buddy teams. You can dive in groups of 3, 4 or more, but you always want to have one special buddy. There are several important hand signals to learn so you can communicate effectively with your buddy.

Let's start with OK. When you signal your buddy OK, you are saying, I am OK. Are you? Then you need to wait for your buddy to respond. If there is something wrong, you need to let your buddy know.

One of the most important rules while scuba diving is to move slowly, breathe slowly and never hold your breath. When students get really excited, such as during play or before tests, they start to breathe really fast or may even forget to breathe altogether. Scuba divers must learn to control breathing because we carry tanks of air and we need our air to last. When a scuba diver breathes fast they tend to move fast, use air quickly, and miss seeing marine life. If you move fast you appear as a bubble-blowing monster and can scare all the animals. Fish swim away if you move and breathe fast. When you breathe slowly, you move slowly. Remember the golden rule is to Stop, Think, Breathe Slowly, and then Act.

You can establish a positive atmosphere in any classroom or household using hand signals and these breathing techniques. Use the mantra with your students: Stop, Think and Breathe Slowly. Share this lesson with parents to provide consistency in the classroom and at home.

Once you master these hand signals and concepts with your students, set the stage to go scuba diving during imagination play with your students before every activity. You can either use this as a script or create your own!

Before we dive into our imagination and travel under water, let's go through the steps to become scuba divers!

1. Get together with your buddy.
2. Get your equipment in place. Put your mask on, get your fins on and review hand signals with your buddy, remember we are silent when we go scuba diving.
3. Signal your buddy that you are OK to go down.
4. On the count of three, let's use our imagination and become scuba divers, scientists and underwater explorers! Let's say the magic word (imagination) 1, 2, 3…Imagination!

Anytime your students get off task, use the mantra with your hand signals: Stop, Think and Breathe Slowly!

Communication Signals

"Are you OK?" or "OK!"

Use to ask your buddy if they are OK or to signal to your buddy that you are OK

1. Make a circle with your thumb and forefinger
2. Extend remaining three fingers
3. Combine with other signals to form sentences

"Go up" or "Are you ready to go up?"

Use to signal to your buddy that you are ready to go to the surface

1. Make a fist with one hand
2. Point your thumb toward the surface
3. Combine with the "OK" signal

"Go down" or "Are you ready to go down?"

Use to signal to your buddy that you are ready to go dive

1. Make a fist with one hand
2. Point your thumb down
3. Combine with the "OK" signal

"Get with your buddy"

Use to signal to a group that each person should get closer to their buddy

1. Make a fist with both hands
2. Extend index fingers
3. Bring hands together

"Hold hands"

Use to signal to your buddy that they need to hold your hand to stay close

1. Clasp your hands together
2. Show your buddy your clasped hands

"Look at" or "Watch"

Use to signal to your buddy when you want them to look at something or watch you

1. Make a fist with one hand
2. Point your index and middle finger toward your eyes
3. And point to what you want them to look at

"Me" or "I"

Use to signal to indicate to yourself to your buddy

1. Point to your chest with your thumb or index finger
2. Combine with other signals to form sentences

"Stop"

Use to signal to your buddy that you would like them to stop

1. Raise your hand
2. With your fingers together, turn your palm toward your buddy
3. Move hand slightly forward
4. Combine with other signals to give instructions

"Think" or "Remember"

Use to signal to your buddy when you want them to think or remember something

1. Make a fist
2. Point index finger to your head
3. Combine with other signals to form sentences

"Slow down"

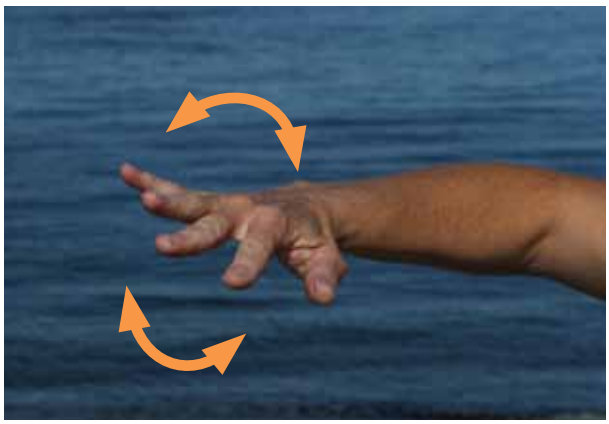
Use to signal to your buddy that they should slow their breathing or to stop moving fast

1. With your fingers together, press your palm down
2. Move hand up and down slowly
3. Combine with other signals to form sentences

"Something is wrong"

Use to signal to your buddy that something is not right

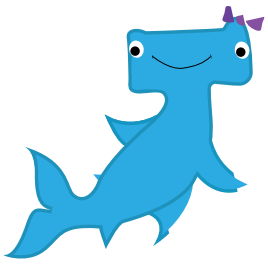
1. With your palm facing down, spread your fingers apart
2. Rotate your hand at the wrist back and forth
3. Combine with other signals to form sentences



"Danger!"

Use to signal to your buddy that something is dangerous and they should be careful

1. Make a fist with one hand
2. Extend your fist in the direction of danger
3. Combine with other signals to form sentences



SPECIAL SECTION: Ocean Annie teaches you about Scuba Diving!

Special Equipment Needs For Scuba Diving

SCUBA stands for Self Contained Underwater Breathing Apparatus. The basic equipment needed for snorkeling and scuba diving include a mask, snorkel, fins and wetsuit. In addition to this, scuba divers need a SCUBA tank, BCD and regulator. Below is a detailed description of all of the equipment needed for scuba diving, so that you can become a scuba instructor in your class:

Mask

Humans need air in front of their eyes in order to see otherwise everything under water would be blurry. When you go swimming, you might wear swim goggles, but when snorkeling and scuba diving, you need to wear a mask so your nose is enclosed within the air space. Water pushes the mask to your face as the pressure of the water increases with depth. Exhaling through your nose adds air to the mask and balances the pressure, a process called equalization. When snorkeling and scuba diving we need the mask to enclose our noses.

Snorkel

A snorkel is a hollow tube attached to the mask that allows snorkelers and scuba divers to comfortably float or swim on the surface of the water without having to lift the head to breathe.

Fins

Human feet are very small and do not provide great propulsion in water, so when swimming in the water legs become tired quickly. Wearing fins that lengthen the leg and widen the feet improves propulsion which is why scuba divers and snorkelers wear fins that help them move like a fish. Many marine animals have different shaped fins because they have adapted to different lifestyles in the sea. There are different fin styles snorkelers and scuba divers can choose too!

Wetsuit

Under water heat leaves our bodies 25 times faster than it does on land, so people get colder more quickly in water. Wearing a wetsuit made of neoprene rubber helps keep people warm. If the wetsuit fits properly it will be snug over the entire body, and trap in water that will be warmed by the heat given off by the wearer.

The ocean has many different water temperatures. Near the equator where it is warm, snorkelers and scuba divers may only need a rash guard or thin wetsuit to stay warm. When diving in cold water, they wear a thicker wetsuit or a drysuit. A drysuit is warmer because it prevents water from entering the suit. The drysuit connects to the scuba tank, keeping air next to the body instead of water. Air does not conduct heat away from the body as quickly as water so people stay warmer under water in a drysuit.

SCUBA Tank

Humans need oxygen in air in order to live. Air is composed of approximately 79% nitrogen and 21% oxygen. Because scuba divers submerge completely under water, they need to carry air to breathe. The SCUBA tank is an aluminum or steel cylinder filled with pressurized air. The tank is what allows scuba divers to breathe air underwater in combination with our SCUBA regulator.

SCUBA BCD

BCD stands for Buoyancy Control Device. The BCD is a jacket-like device that straps the SCUBA tank in place. In addition to carrying the tank, the BCD helps controls buoyancy. Air is added to the BCD because it has a bladder inside of it like a balloon. By filling it up with air, you will float. If the air is deflated from the BCD, you will sink. When scuba diving, we add and subtract the air in the BCD in order to be neutrally buoyant underwater. Scuba divers don't float or sink when scuba diving, they are like astronauts in space with zero gravity. Did you know astronauts learn how to scuba dive to practice what it will feel like before going into outer space?

Ocean Annie teaches you about Scuba Diving! (Continued)

SCUBA Regulator

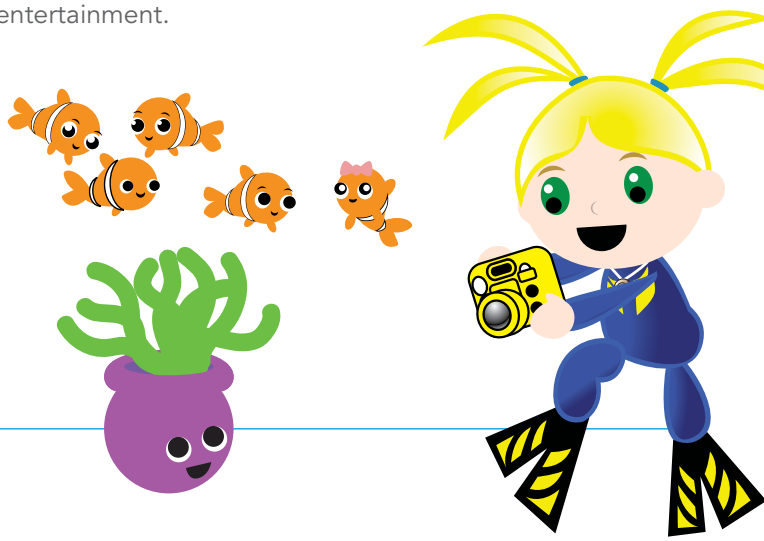
The SCUBA regulator is the device attached to our SCUBA tanks that converts high pressure air into one that the user can breathe under water.

SCUBA Gauge

Scuba divers have to know how much air is inside the scuba tank. The deeper you dive, the more air you use which affects how much time can be spent underwater. A scuba gauge provides the information needed so you can monitor the air in the SCUBA tank. Many gauges also have a compass attached to them that can help the wearer determine the direction of travel while under water.

Underwater Camera

There are special underwater cameras and lights snorkelers and scuba divers use to document the dives. Photographs and videos taken under water can be used for scientific reasons, education or entertainment.

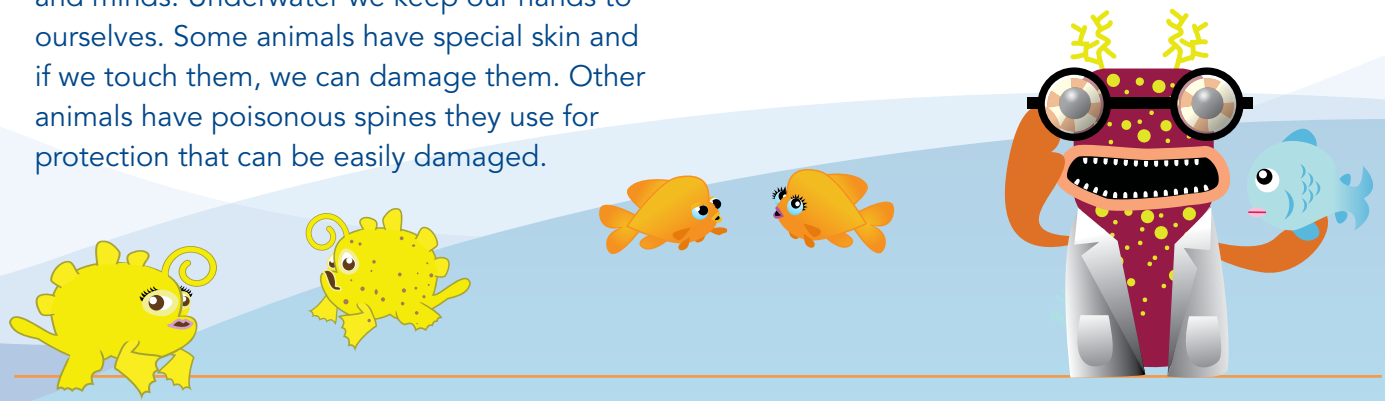


RESPECT THE ENVIRONMENT AND OUR BUDDY

Before we go scuba diving, we have to learn how our equipment works and about the environment we will enter. Sometimes we will scuba dive in a pool, lake or in the ocean. In class, you will be scuba diving into your imagination and exploring the world through the knowledge you are learning with books, DVDS and these activities. When we enter the water we must not only respect the equipment and our buddy, but we also must respect the animals we will encounter. It is tempting to touch the animals because they look so amazing, yet we have to understand that we are only allowed to touch with our eyes, thoughts and minds. Underwater we keep our hands to ourselves. Some animals have special skin and if we touch them, we can damage them. Other animals have poisonous spines they use for protection that can be easily damaged.

It is important to use and show respect in all areas of our lives! So remember, we don't need to touch our buddies to work with them, just like we don't need to touch the animals to observe and experience them!

The more we learn about the Ocean, the more you will want to protect it. Our ocean is responsible for 70% of the Oxygen our planet needs, all of our water and many people rely on the food from the sea as their only source of protein. Everything we do on land affects the Ocean. We rely on the Ocean for the health of our planet. I hope you will want to help protect our sea!



Can you identify Ocean Annie's SCUBA gear?

Mask
BCD
Air tank
Regulator
Compass
Fins
Wet suit
Snorkel

Educator Key

CLASSROOM ACTIVITY STATION A2 - SCRAMBLED FISH

1. SWIMS
2. BONE
3. SCUBA
4. SCIENTIST
5. FINS
6. GILLS
7. SKELETON
8. HOVER
9. SCALES
10. SWIM BLADDER
11. FISHING
12. MOVE

OCEAN ANNIE'S SUPER SCUBA CHALLENGE:
MOST FISH SWIM

CLASSROOM ACTIVITY STATION A5 - SPLISH-SPLASH FISH MATH - EDUCATOR KEYS A,B,C

FORM A

1. 3
2. 2
3. 9
4. 3
5. 8
6. 3
7. 8
8. 2
9. 6
10. 10

FORM B

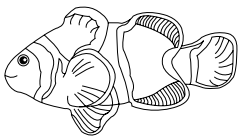
1. 5
2. 7
3. 10
4. 8
5. 10
6. 5
7. 9
8. 4
9. 3
10. 8

FORM C

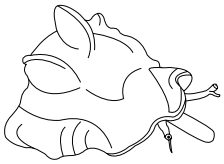
1. 15
2. 13
3. 8
4. 4
5. 14
6. 2
7. 20
8. 16
9. 6
10. 20

CLASSROOM ACTIVITY STATION B1 - "C" IS FOR CLOWNFISH! - LABELED ART

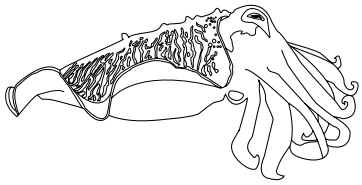
Clownfish



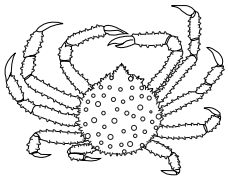
Conch

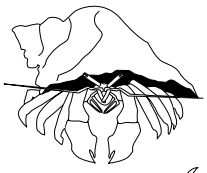


Cuttlefish

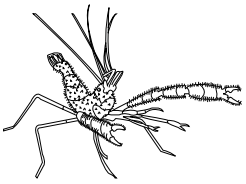


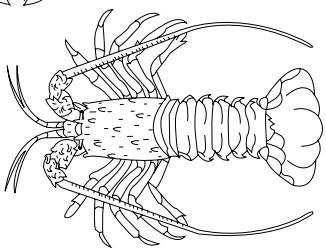
Crab



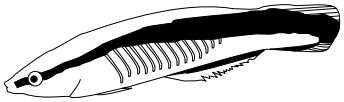


Crustaceans

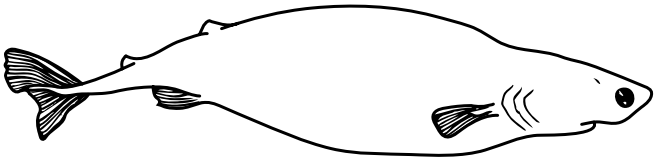




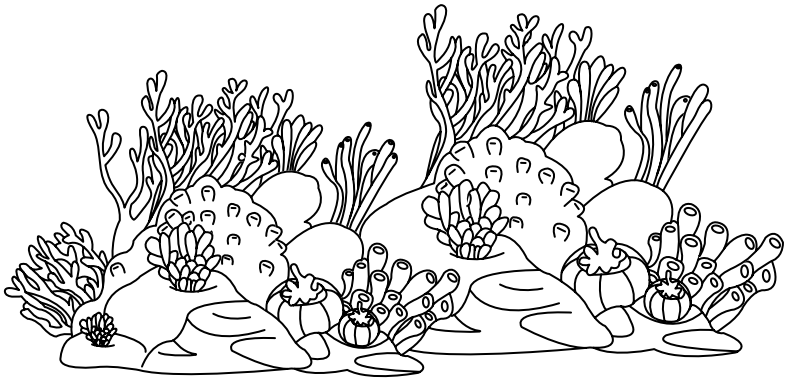
Cleaner wrasse



Cookie Cutter Shark



Coral



CLASSROOM ACTIVITY STATION B5 - SYMBIOSIS IS LIVING TOGETHER

1. ANEMONE
2. HOVERING
3. ANIMALS
4. TOGETHER
5. INVERTEBRATES
6. TENTACLES
7. NEST
8. STING
9. MUTUAL
10. RETREAT

CLASSROOM ACTIVITY STATION C4 - HIDE 'N SEEKABLE SYLLABLES

WORDS	NUMBER OF SYLLABLES	WRITE AND SEPARATE SYLLABLES
PIGMENT	2	PIG/MENT
DISGUISE	2	DIS/GUISE
COLORATION	4	COL/OR/A/TION
HIDE	1	HIDE
ENVIRONMENT	4	EN/VI/RON/MENT
CAMOUFLAGE	3	CAM/OU/FLAGE
CONCEAL	2	CON/CEAL
OBSCURE	2	OB/SCURE
TRANSPARENT	3	TRANS/PAR/ENT
ELUSIVE	3	EL/U/SIVE

CLASSROOM ACTIVITY STATION C5 - "A-REEF-MATIC" - FORM A

1. ~~The yellow seahorse ate six shrimp~~. 9
2. ~~The tiger shark swam seven miles~~. 8
3. ~~The grouper had eight eggs~~. 6
4. ~~The purple magnificent sea anemone had eight tentacles~~. 16
5. ~~The brown oyster made six pearls~~. 2
6. ~~There were four red sea stars on a rock. There were seven brown sea stars on the coral reef.~~
   3
7. ~~There were five hawksbill sea turtles sleeping in a cave~~. 6
8. 10

OCEAN ANNIE'S SUPER SCUBA CHALLENGE:

If you add all the answers together, what is the final number? 60

CLASSROOM ACTIVITY STATION C5 - "A-REEF-MATIC" - FORM B

1. ~~The yellow seahorse ate six shrimp~~. 20
2. ~~The tiger shark swam seven miles~~. 15
3. ~~The grouper had eight eggs~~. 13
4. ~~The purple magnificent sea anemone had eight tentacles~~. 25
5. 13
6. ~~There were four red sea stars on a rock~~. 4
7. ~~There were nine hawksbill sea turtles sleeping in a cave.~~ 21
8. 25

OCEAN ANNIE'S SUPER SCUBA CHALLENGE:

If you add all the answers together, what is the final number? 136

CLASSROOM ACTIVITY STATION C5 - "A-REEF-MATIC" - FORM C

1. ~~The yellow seahorse ate six shrimp~~. 36
2. ~~The tiger shark swam seven miles~~. 40
3. ~~The grouper had eight eggs~~. 17
4. ~~The purple magnificent sea anemone had eight tentacles~~. 25
5. 13
6. ~~There were four red sea stars on a rock~~. 4
7. ~~There were nine hawksbill sea turtles sleeping in a cave.~~ 21
8. 25

OCEAN ANNIE'S SUPER SCUBA CHALLENGE:

If you add all the answers together, what is the final number? 257

CLASSROOM ACTIVITY STATION D2 - SIZE IT UP - FROGFISH SAME SIZE

1. B, D
2. A, B
3. C, D
4. A, C
5. B, C
6. A, D
7. A, C
8. A, B

CLASSROOM ACTIVITY STATION D4 - FROGFISH OPPOSITES

1. If some frogfish are bumpy, then some frogfish are SMOOTH.
2. Though one frogfish is SLOW, then another is fast.
3. When that frogfish is AWAKE, then that one is asleep.
4. This frogfish is wide, and another one is NARROW.
5. That frogfish is BIG and that one is small.
6. When that frogfish wiggles, this one lies STILL.
7. Though that frogfish are thick, that one is THIN.
8. This frogfish is strong, and another one is WEAK.
9. That frogfish is long, but this one is SHORT.
10. Though that frogfish is LIGHT, another is dark.

CLASSROOM ACTIVITY STATION D5 - FROGOMETRY

1. If students are uncertain, help coax them with questions such as: Thick or thin? Big or small? Long or short? Bumpy or smooth?
2. Two
3. The first one is smaller, shorter, slighter, minor, littler, or petite. The second one is bigger, taller, major, larger, greater, higher, or longer.
4. If the starting observation was that the second spine was somehow longer, taller, or bigger than the first, then you were right!
5. Answers vary.
6. NO – the pectoral fin is longer, bigger, larger, superior, and greater than the pelvic fin.
7. YES – the pectoral fin is longer than the pelvic fin.
8. Students will probably offer a variety of answers, but for frogfish, a long pectoral fin is important because it is used to help the animal balance, and to work as modified "arms" that help it to crawl.
9. Nine inches
10. In some areas the dorsal fin is: taller, thicker, wider, broader, higher, longer or elongated.
11. It will be found in the area at the base of the pectoral fin.
12. It will be found at the base of the tail.

CLASSROOM ACTIVITY STATION D6 - MYSTERY FROGFISH DICHOTOMOUS KEY

1. a. If specimen has long, thin illicium (S) ..... go to 2
   b. If specimen has short, wide illicium with finger-like projections (H)..... go to 3

2. a. If the specimen has 18 rays in its dorsal fin..... go to 6
   b. If the specimen has 23 rays in its dorsal fin (S)..... go to 4

3. a. If the specimen has 12 rays in its dorsal fin (H) ..... go to 5
   b. If the specimen has 15 rays in its dorsal fin..... go to 6

4. a. If the specimen has a spotted pattern on its skin (S)..... go to 5
   b. If the specimen has a banded pattern on its skin ..... go to 6

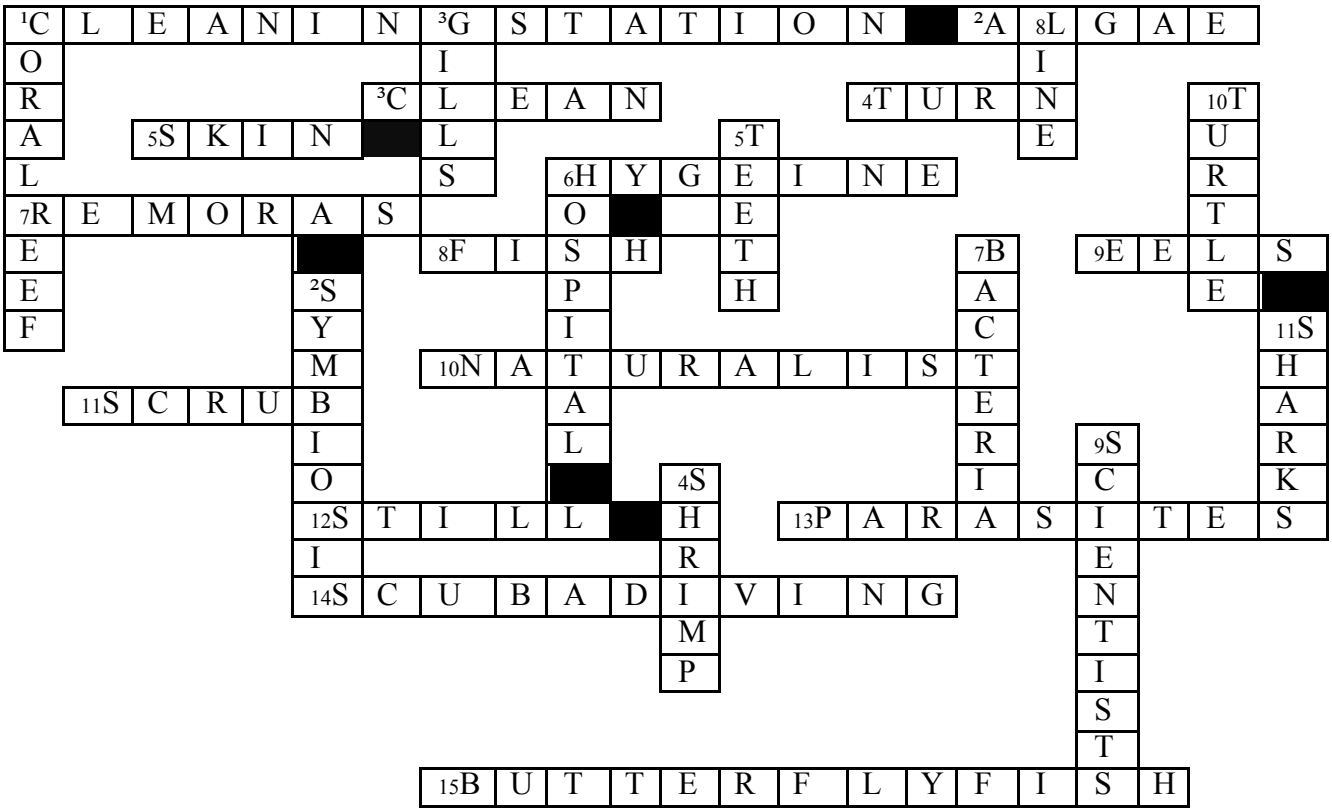
5. a. If specimen has stripes around the eye (S & H)..... go to 6
   b. If specimen has no stripes around the eye ..... go to 8

6. a. If specimen has fleshy bumps on the skin (H) ..... go to 7
   b. If specimen has smooth skin (S) ..... go to 8

7. a. If specimen has appendages at the end of its esca (S) ..... go to 8
   b. If specimen has finger-like appendages in front of its esca (H)..... go to 9

8. a. If specimen has a wedge-shaped esca..... go to 9
   b. If specimen's esca has 5 tear-shaped projections (S) ..... go to 10

CLASSROOM ACTIVITY STATION E5 - PICK IT CLEAN CROSSWORD - ANSWERS



CLASSROOM ACTIVITY STATION F2 - SWIMMING IN SEQUENCE

1. add XX to third shark
2. add XX to second shark
3. add XX to first shark
4. add XX to third shark
5. add XX to second shark
6. add XX to third shark
7. add XX to second shark
8. add XX to first shark

CLASSROOM ACTIVITY STATION F3 - SHARK TRIVIA ANSWERS

Questions for Students	Answers for Teachers
Some sharks spend much of their day resting nearly motionless on the sand.	*TRUE, it is a common misunderstanding that sharks must swim all the time in order to pass water through their gills to breathe. Many types of sharks remain still for long periods of time and "breathe" by using muscles in the gills to pump the water in and out rather than swimming.*
Some sharks can swim into river areas for periods of time.	TRUE, though there is no such thing as a "fresh water" shark, some types of shark can tolerate fresh water for long periods and are known to travel impressive distances up rivers. Bull sharks and saw sharks both have been documented in river mouths.
Sharks always swim alone.	*FALSE, sometimes sharks are seen in groups of hundreds. Certain hammerhead sharks are famous for exhibiting this schooling behavior.*
Sharks can swim in water as shallow as 2ft and as deep as or deeper than 4,000 feet.	*TRUE, sharks do not have the sensitive gas-filled swim bladder that most fish have, so they are able to tolerate a wide variety of water depths and the change in pressure that goes with it.*
Like all fish, sharks have only one pair of gills.	*FALSE, sharks usually have five, but may have six or even seven pairs of gills.*
Some sharks have an endless supply of teeth and can replace as many as they loose for as long as they live.	*TRUE, some sharks replace entire rows of teeth while others replace individual teeth that are lost. Some sharks will grow thousands of teeth during their lives.*
Some sharks lay eggs.	*TRUE, shark eggs are very leathery and some look like cork screws, while others look like pouches and are often called mermaid's purses.*
Shark parents work hard raising their young to protect them in the ocean.	*FALSE, new born sharks are tiny versions of adults, capable of protecting themselves and are on their own from the day they are born.*
Some sharks can jump over twenty feet in the air.	*TRUE, mako sharks are known for their ability to leap from the water and have been reported to jump as high as thirty feet! Also Great White Sharks have been observed jumping out of the water when hunting.*
Sharks were swimming in the ocean even before dinosaurs walked the earth.	*TRUE, the oldest shark fossils go back about 420 million years, while the oldest dinosaur fossils only date back about 240 million years!*

OCEAN ANNIE'S SUPER SCUBA CHALLENGE

What part of the sharks' bodies do we find as fossils? Do you know why?	*TEETH! Sharks bodies do not usually fossilize because they are made of cartilage. Have students look at a skeleton of a human body and skull. You never see a person's nose or ears because these are made of cartilage. Teeth are the only part of a shark that can fossilize!*

CLASSROOM ACTIVITY STATION F6 - SHARK-A-MANIA MATH

FORM A

1. 48
2. 21
3. 48
4. 12
5. 52
6. 56

Challenge
1200

FORM B

1. 84
2. 28
3. 144
4. 6
5. 104
6. 126

Challenge
2400

FORM C

1. 72
2. 28
3. 216
4. 8
5. 12
6. 6
7. 104
8. 105

Challenge
7500

CLASSROOM ACTIVITY STATION G1 - Munch-A-Bunch

FORM A

1. 7
2. 10
3. 4
4. 9
5. 4
6. 6
7. 10
8. 20

FORM B

1. 17
2. 18
3. 10
4. 18
5. 9
6. 6
7. 24
8. 21

FORM C

1. 37
2. 79
3. 40
4. 29
5. 5
6. 11
7. 32
8. 40

CLASSROOM ACTIVITY STATION G2 - FISHING FOR OPPOSITES

1. HUNTED
2. SPINES
3. SLOW
4. BIG
5. PREY
6. LONG
7. THIN
8. SHALLOW
9. DULL
10. FRIENDLY

CLASSROOM ACTIVITY STATION G5 - THE OCEAN FOOD WEB

PARROTFISH – Consume coral and algae. Since coral is an animal the parrotfish is considered an omnivore.	**GREEN SEA TURTLE** – As adults they eat sea grasses and algae. They are herbivores.
BRITTLE STAR – Typically feed on decaying remains of plants or animals. They are known as detrivores or scavengers.	**LOBSTER** – Consume fish, crabs, clams, mussels, sea urchins, and sometimes even other lobster. They are carnivores, scavengers and detrivores.
SEA ANEMONE – Use stinging tentacles to capture and eat small fish, shrimp, krill, isopods, and various other forms of plankton. The sea anemones are carnivores.	**BANDED CORAL SHRIMP** – They are cleaners that remove dead tissue, algae and parasites from other animals. They are considered omnivores, scavengers, and detrivores.
WHITE TIP REEF SHARK – Usually hunt fish, crustaceans & octopus. They are carnivores.	**NUDIBRANCH** – Feed on sponges, hydroids, sea slugs, barnacles, or even other nudibranchs. They are carnivores.
JELLIES – Use stinging tentacles to stun prey that they find drifting in the ocean which may include things such as eggs or larvae from a wide range of marine animals, fish, or even other jellies, and a wide array of plankton. They are carnivores.	**CORAL** – Use stinging cells to catch zooplankton, small drifting animals. They also get food from tiny symbiotic algae living in their skin tissue. They are omnivores.
OCTOPUS – Consume crabs, snails, fish, scallops, and other crustaceans. They are carnivores.	**GROUPER** – Often eat fish, crustaceans like shrimp and crabs, and even the occasional octopus. They are carnivores.
SALLY LIGHTFOOT CRAB – Consumes algae and also dead animal matter. It is considered an omnivore, detrivore, or scavenger.	**HUMANS** – Are adept predators, and eat kelp, fish, shrimp, lobster, sea urchins, and so much more. What else can you think of that human beings eat from the sea?
BLUE TANG – Feeds entirely on algae, so it is an herbivore.	**CROWN OF THORNS SEA STAR** – Dines exclusively on coral. It is a carnivore.

CLASSROOM ACTIVITY STATION H2 - "FIN-ONYMS!"

1. spiny, pointy, spiky, thorny, barbed, bristly
2. soft, squashy, spongy
3. greasy, oily, slippery, slick
4. powerful, tough, muscular
5. big, great, huge, bulky
6. little, minute, petite, slight, diminutive, tiny
7. glossy, gleaming, sparkly, glittering, shimmering
8. swift, speedy, quick, rapid, hasty
9. sluggish, leisurely, dawdling
10. broad, fat, wide, chunky, bulky, solid

CLASSROOM ACTIVITY STATION H1 - CURRENCY FISH Forms A, B, C

Form A

1. YES, YES, Nickel
2. YES, YES, Nickel and Penny
3. YES, YES, Four Pennies
4. YES, YES, Dime
5. YES, YES, Quarter and Nickel
6. YES, YES, Quarter
7. YES, YES, Dime and Two Pennies
8. YES, YES, Nickel and Three Pennies

Form B

1. YES, YES, Two Quarters
2. YES, YES, Dime, Nickel, And Two Pennies
3. YES, YES, Quarter and Dime
4. YES, YES, Two Quarters, Nickel and Penny
5. YES, YES, Quarter, Two Dimes and Three Pennies
6. YES, YES, Two Quarters and Two Dimes
7. NO, NO, total of all coins is 84¢, not enough money, not exact change
8. YES, YES, Quarter and Nickel

Form C

1. YES, YES, Dollar Bill and Four Quarters
2. YES, YES, Dollar Bill, Two Quarters, and Dime
3. YES, YES, Dollar Bill and Three Nickels
4. YES, YES, Dollar and Three Dimes, OR Dollar, Quarter, and Nickel
5. YES, YES, Five Dollar Bill, One Dollar Bill, Three Quarters, and Two Dimes
6. NO
7. YES, YES, Dollar, Five Dollar, and Quarter (OR Two Dimes and Nickel)
8. YES, YES, Dollar, Three Quarters, and Two Dimes

CLASSROOM ACTIVITY STATION H1 - FISH JUMBLE & TUMBLE ANSWERS

1. Scales
2. False (Salmon)
3. Gills
4. School
5. Camouflage
6. True
7. Omnivore
8. No
9. No
10. Yes
11. True
12. Yes
13. Whale Shark
14. True
15. Herbivore
16. Yes
17. Swim Bladder
18. True
19. Cleaning Station
20. Ichthyologist
21. Carnivores
22. True
23. Scuba
24. Yes
25. Fins
26. True
27. True
28. No
29. Migration
30. Yes
31. False
32. Yes
33. True
34. Yes
35. True
36. Yes
37. False
38. Illicium Or Esca
39. True
40. Symbiosis
41. Yes
42. True
43. False
44. Stonefish
45. True
46. Cartilage
47. Yes
48. Yes
49. True
50. Yes
51. Extinction
52. Yes
53. Reusable Water Bottles
54. True

Annie Crawley

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Contact **Annie@AnnieCrawley.com** or call **(805) 453-1947** to book her today!

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Dive Into Your Imagination

The Many Faces of Award Winning Author, Photographer, Producer and Empowering Speaker Annie Crawley

Keynote Speaker

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"Annie Crawley was born to inspire people. She lives the message she brings to the world, empowering people to use their imagination to live out of their vision of themselves, rather than their history. Annie Crawley is what the world needs now more than ever before." – ***Les Brown***

What will you do with your moment in time? Annie Crawley was born to inspire. Drawing upon the past two decades of experience as an underwater expert, world traveler and entrepreneur, she uses Ocean metaphors, video and photography in her multi-media and thought provoking presentations. Annie Crawley, reaches thousands of people every year as a renowned inspirational and motivational speaker.

Utilizing her techniques, you will understand how to create a more fulfilling life and career by helping you change your mindset to get you focused and motivated. Her presentations and workshops are unique because she uses the Ocean as a metaphor, teaching you to dive deeply into possibilities, breathe differently, face your fears, set goals, anchor your life, adapt to changes and focus on what is important today in order to reach your full potential. Annie Crawley gives you the power to believe in yourself as you dive into your greatness.

Annie Crawley's programs are tailored to your corporate, group or school's needs. Please review Annie's topics and choose one that suits your group best or contact us to create a personalized program.

Contact Annie Crawley at **Annie@AnnieCrawley.com** or call **(805) 453-1947** to talk with her today!

Meet Annie Crawley

Through public speaking tours, workshops and programs, Annie Crawley reaches a worldwide audience. While creating a successful business, Dive Into Your Imagination, Annie Crawley, aka Ocean Annie, continues to travel and document the world focusing on life in our Ocean. She is uniquely qualified to speak about our ocean, obtaining success by taking calculated risks, living your dreams and creating your greatest life. Originally from Chicago and trained as a photo and broadcast journalist, Annie Crawley spent the past two decades living and working around the world. After learning to scuba dive and sail, she became a PADI Master Scuba Diving Instructor and a 100 ton US Coast Guard Boat Captain. Annie Crawley specializes in the Underwater Realm as an underwater photographer, filmmaker, field biologist and expert. As a producer, Annie Crawley created an award winning series of ocean books, DVDs and educator lesson plans after being awarded four grants from the Save Our Seas Foundation. She was also responsible for single-handedly producing, shooting, and editing a series of programs taken on the SEAPLEX expedition with Project Kaisei and Scripps Institution of Oceanography in the Great Pacific Garbage Patch. She has worked with National Geographic, BBC, the Food Network and is published in magazines worldwide. Annie Crawley relates the lessons she learned traveling in a way that will inspire you to protect our environment and Ocean.

What are you waiting for, Dive Into Your Imagination and bring inspirational speaker Annie Crawley to your area today!

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