

OUR HEROBES

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BRAIN CORAL

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CORAL REEFS - BURSTING WITH LIFE TROPICAL CORAL REEFS MAKE UP LESS THAN ONE PERCENT OF THE SEABED WORLDWIDE, ASTONISHINGLY ENOUGH, THEY ARE HOME TO HOUSANDS OF ANIMAL AND PLANT SPECIES. WHILE VAST PARTS OF THE SEAFLOOR ARE PLAIN, SOFT BOTTOMS HOSTING RELATIVELY FEW SPE-CIES, CORAL REEFS BURST WITH LIFE! THERE ARE 1500 REEF-FORMING UN-FILLED SHALLOW WATERS OF THE TROPICS. EVEN IN THE COLD AND DARK DEEP-SEA YOU WILL FIND CORAL REEFS; BIOIVERSITY HOTSOFI AMIDST MUDDY AND SPECIES-POOR ABYSSAL AMIDST MUDDY AND SPECIES-POOR ABYSSAL























AND ALL YOU CORALS NEED THAT ENERGY TO GROW, AND TO FORM YOUR STONY SKELETONS. BIT BY BIT, MILLIMETER BY MILLIMETER.



HARD FACTS

SOC WRINEN'S COUSINS OCTOPUSES ARE AMAZINGLY SMART ANIMALS WHO BELONG TO THE MOLLUSCAN CLASS CEPHALOPODS. THEY ARE ABLE TO CHANGE THEIR SKIN COLOR AND TEXTURE TO CAMOUFLAGE WITHIN THEIR SURROUNDINGS. THE COMMON OCTOPUS OWNS EIGHT TENTACLES, EACH UP TO A METER LONG AND LINED WITH TWO ROWS OF SUCTION CUPS. HE SKILLFULLY APPLIES THESE TENTACLES, AND CAN EVEN USE THEM TO WIELD TOOLS SUCH AS STICKS. WHILE USING HIS PARROT-LIKE BEAK, HE LIKES TO CRACK OPEN SCALLOPS AND OTHER SHELL BEARING ANIMALS.

BREAKING WAVES



STONY CORALS BUILD UP THE REFES

ELKHORN CORALS GROW IN THE SUNLIGHT SHALLOW WATERS OF THE CARIBBEAN. THEY SHIELD THE COAST BY ABSORBING WAVE ENERGY WITH THEIR 'ANTLERS' SOME DECADES AGO, THEY FORMED A PROTECTION BELT ALONG THE COASTLINE. TODAY, THERE ARE OFTEN ONLY SINGLE ELKHORN COLONIES LEFT AND THE SPECIES CAN BE FOUND ON THE RED LIST OF ENDANGERED SPECIES DO YOU THINK THEIR 'ANTLERS' LOOK LIKE THE



STONY AND SOFT CORALS, AS WELL AS SEA FANS AND WHIPS. SOFT CORALS, LIKE TREE CORALS, ARE OFTEN COLORFUL AND HAVE TINY LIMESTONE NODULES WITHIN THEIR BODY. THEIR BODY IS BASICALLY A BULGING TUBE, STABILIZED BY WATER PRESSURE. SEA FANS AND WHIPS HAVE A FLEXIBLE, HORNY SKELETON, WHICH ALLOWS THEM TO SWAY WITH THE CURRENT OR SWELL. OFTEN A FEATHER STAR SITS ON TOP OF A SEA FAN, TAKING ADVANTAGE OF ITS EXPOSED SPOT TO CATCH MICROORGANISMS OUT OF THE WATER FLOWING PAST FOR A TASTY MEAL. IT'S ONLY THE STONY CORALS WHO BUILD UP A ROCK-LIKE SKELETON MADE OF CALCIUM CARBONATE. THE DEAD PART BELOW THE LIVING CORAL FORMS THE REEF'S FRAMEWORK. THIS REEF SUBSTRUCTURE IS INTERVEINED BY CREVICES AND A KIND OF CAVE SYSTEM, POPULATED BY SPONGES AND OTHER ANIMALS.



RCHITECTS

CORAL REEFS ARE THE GREATEST STRUCTURES THAT HAVE BEEN BUILT BY LIVING BEINGS ON EARTH. YOU CAN EVEN SEE THEM FROM SPACE! FROM THE FOSSIL RECORD WE KNOW THAT CORAL REEFS HAVE EXISTED FOR OVER 400 MILLION YEARS. THE ANCIENT CORALS WHO POPULATED THE REEFS BACK THEN ARE CALLED RUGOSA AND TABULATA AND HAD A DIFFERENT BUT STILL CALCAREOUS SKELETON LIKE THE CORALS TODAY. STONY CORALS AS WE KNOW THEM APPEARED AROUND THE TIME OF THE FIRST DINOSAURS. MODERN CORAL REEFS HAVE EXISTED FOR THE PAST 60 MILLION YEARS. AT PRESENT, CORAL REEFS ARE THREATENED: THE MAIN REASONS ARE CLIMATE CHANGE, POLLUTION AND OVER-FISHING.

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DO YOUR OWN RESEARCH:

- 1. WHAT'S YOUR FAVORITE CORAL SPECIES?
- 2. WHERE IS THE CORAL TRIANGLE AND WHAT IS SO SPECIAL ABOUT IT?
- 3. WHICH ANIMALS ARE NATIVE TO CORAL REEFS?
- 4. WHAT IS A BASKET STAR?
- 5. WHICH ANIMALS DRILL THEIR TUBES RIGHT INTO THE CORAL SKELETON?
- 6. WHAT IS THE CEMENT OF CORAL REEFS?

... INFO AND SOLVING AT WWW.SECORE.ORG, RUBRIC EDUCATION

FOR WELL-STUDIED CORAL SPECIES, SCIENTISTS MAY BE ABLE DO REDICT THE TIMING OF CORAL ALMOST TO THE MINUTE. TO SYNCHRONIZE THEIR DURING A YEAR TO SET THE MONTH, THE LUNAR COLE SET THE DAY, AND THE TIME AFTER SUNSET TO SET THE ANY AND THE TIME AFTER SUNSET TO SET THE ANY AND THE TIME AFTER SUNSET TO SET THE ALMORE, FOR INSTANCE, THE ELKHORN CORALS ASACT HOUR, AND THEN THEN RENDEZVOUS ASACT HOUR, AND THEN RENDEZVOUS

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