

|Interspectra|

InsideTM Explorer

3D Content Catalogue

V 1.1 2021

Making the inside visible - An intuitive and interactive
3D learning experience

www.interspectra.com



SPECIAL CONTENT PACKAGE

DIG DEEPER - MONSTROUS CREATURES OF THE SEA

Dig Deeper: Monstrous Creatures of The Sea is an interactive digital excavation that takes us into the ground and beneath the waves to meet the marine creatures that inhabited the waters a hundred million years ago when the mighty dinosaurs ruled the land. Examine fossils found on the sea floor, and solve a 100-million-year-old underwater crime. Who and what killed the Eromangasaurus?

Let's help Dr. Scott Hocknull find fossils buried deep in the soil and explore a real dig site from Queensland, Australia brought to you by our Inside Explorer 3D technology. Imagine that the sliders are your shovel and dig away.

Dr. Hocknull is there to guide your visitors through the dig site and down to the very bones of two prehistorical sea monsters. With the help of fossils and 3D technology paleontologists of today can rebuild the face and bodies of extinct species and create 3d replicas of what these monstrous creatures might have looked like. Turns out Platypterygius has dorsal and tail fins just like sharks and dolphins of today.



PLATYPTERYGIUS – BROAD-FINNED ICHTHYOSAUR

Platypterygius was a dolphin-like marine reptile living in the Eromanga Sea in Australia during the Early Cretaceous. Platypterygius reached a length of about 7 metres. It had a long snout and a powerful finned tail.



EROMANGASAURUS – EROMANGA SEA ELASOSAUR

Elasmosaurus was one of the largest plesiosaurs (marine reptiles), living during the late Cretaceous period. Elasmosaurus would have had a streamlined body with paddle-like limbs, a short tail, a small head, and an extremely long neck. The neck alone was over 7 meters long. Elasmosaurids were well adapted for aquatic life, and used their flippers for swimming.

DIG DEEPER MONSTROUS CREATURES OF THE SEA



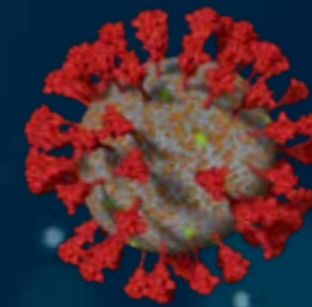
SPECIAL CONTENT PACKAGE

THE CORONA EXHIBITION

The COVID-19 pandemic has shown us, more than ever, the importance of science communication. The new Corona Exhibition in Inside Explorer will enable users to explore the SARS-CoV-2 virus and its effect on the human body, and our world. The exhibit is built on a collaboration with scientists and doctors, and it communicates real scientific research on the Coronavirus and COVID-19 using the power of visualization.

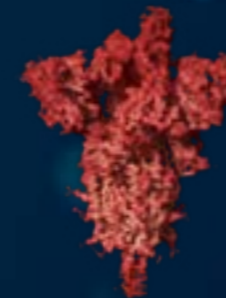
Embedded within each 3D dataset is a series of informational popups with detailed explanations and descriptions, making Inside Explorer a textbook coming alive. The combination of interactive 3D visuals, texts and illustrations creates a highly immersive learning experience that engages people of all ages. For the very youngest of children the colourful images and 3D visualizations spark fascination, and for the more mature audience, the exhibition gives a detailed narrative of the world changing pandemic.

Installing the ready-to-go Corona Exhibition at your science centre or public venue saves you both time and resources and most importantly, it empowers your visitors with knowledge.



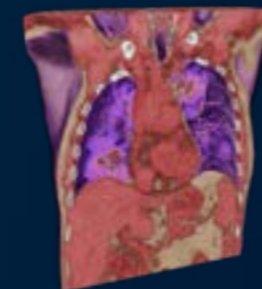
SARS-COV-2 VIRUS

To unmask the virus and making it visible to our human eyes, visitors can cut into a SARS-CoV-2 virus particle and study its structure and viral properties. In a world where billions of people live under the threat of COVID-19 it's important to gain a better understanding of how the virus actually works - how it spreads, how it infects us, and how the virus got so viral.



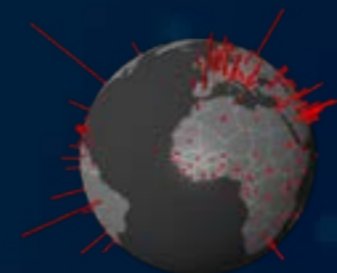
SPIKE PROTEIN

The SARS-CoV-2 spike proteins play a central role in infecting our human cells, and it is a target for both antibodies and vaccine designers. With this data set users can study a real Spike protein from the SARS-CoV-2 virus scanned using cutting edge CRYO Electron Microscope technology.



LUNGS

These Chest CT scans allow visitors to experience what kind of physical damage the SARS-COV-2 virus can cause and what that looks like in our bodies. Slide through five different scans and follow the development of a severe COVID-19 infection from inside the lungs of a hospitalized patient.



TWO YEARS OF COVID-19 PANDEMIC

The users will be guided from the first confirmed case of COVID-19 reported in Wuhan, China in December 2019 through the world wide outbreak, tracking the first two years of the COVID-19 pandemic via an interactive 3D globe.

Statistics

Max Roser, Hannah Ritchie, Esteban Ortiz-Ospina and Joe Hasell (2020) - "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/coronavirus' [Online Resource]

Credits

- SciLife Lab at The Karolinska Institute, Stockholm
- Visualiseringscenter and Linköping University, Sweden
- Nanographics, Vienna, Austria
- Dr. Lars Edling, Infectious Disease Specialist, Örebro Universitetssjukhus, Örebro, Sweden
- Norman Gellada, Imaging specialist, 3D and advanced visualization at Cedars-Sinai hospital in Los Angeles
- Dr. Altair Costa, Thoracic surgeon at the Federal University Hospital in São Paulo, Brazil
- Marie Larsson, PhD, Professor, Molecular Medicine and Virology, BKV, Linköping University



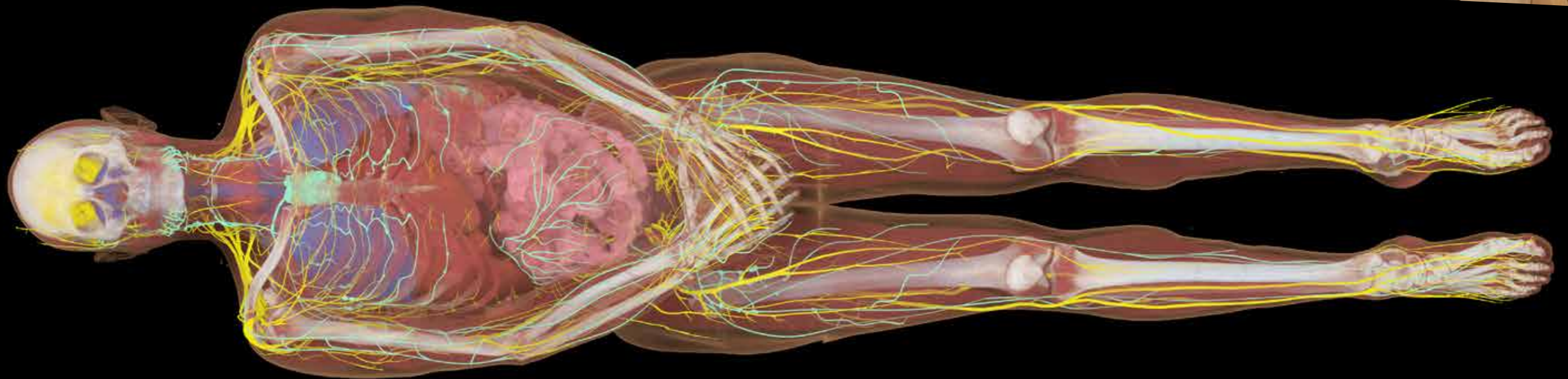
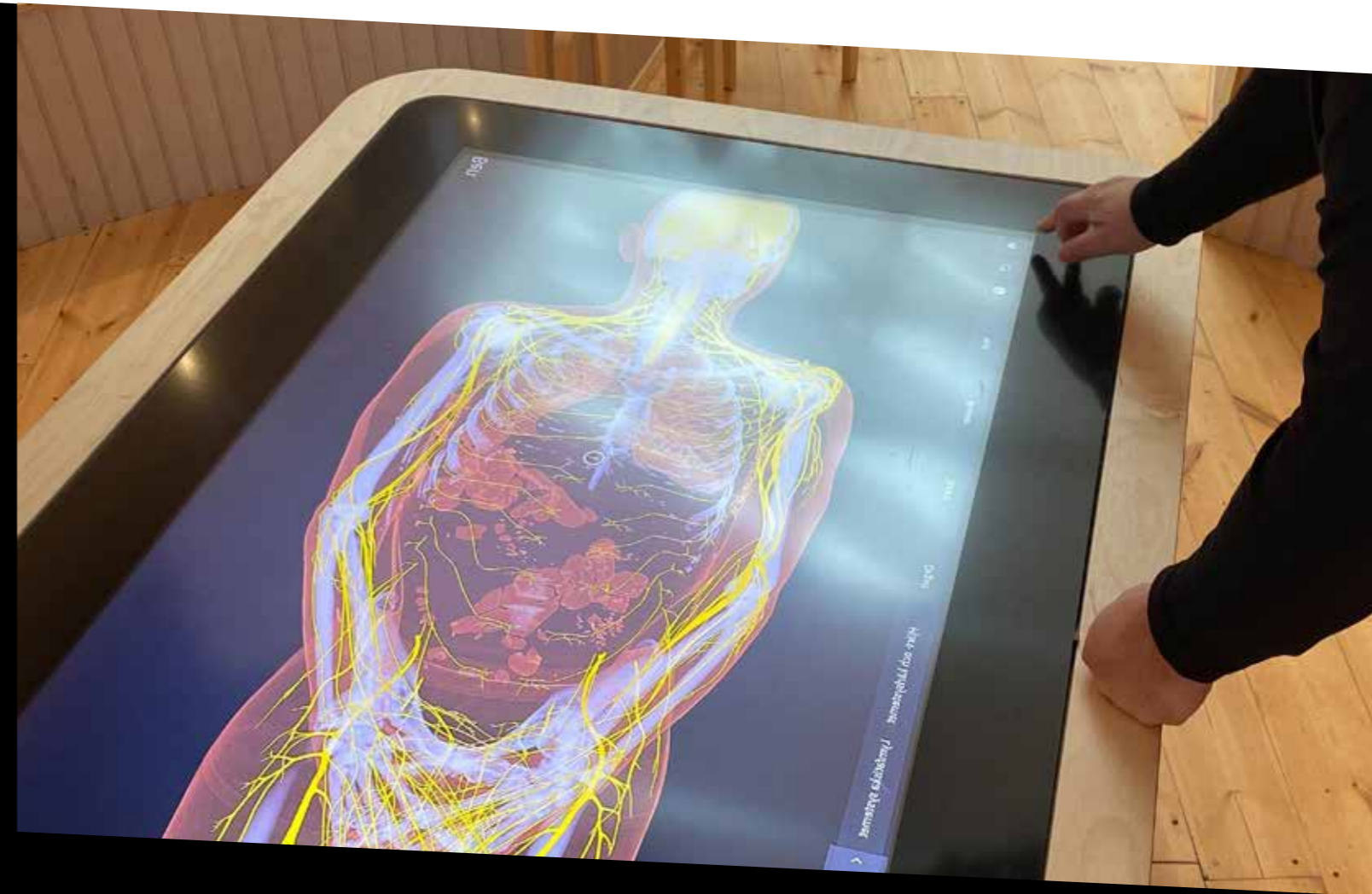
SPECIAL CONTENT PACKAGE

BEN BODY HUMAN ANATOMY

Ben Body is our most detailed human anatomy dataset produced in collaboration with Benjamin Moreno, CEO at IMA solutions. Thanks to a combination of real-captured data and anatomical representations in 3D, the inside of Ben offers a detailed and thorough visual experience of a healthy human body. The visualization and segmentation of the dataset took over a year to finalize and it comes preloaded with 34 informative annotations.

The data set is designed by scientists for a deeper learning experience through a great range of visualized data, like a realistically modelled lymphatic system and a complete nervous system. Ben comes equipped with a variety of organs and a vascular system made visible through the use of contrast fluid during scanning.

This special dataset can be used for exhibit purposes and educational classes to enrich the learning experience, allowing everybody to increase their understanding of the human body.



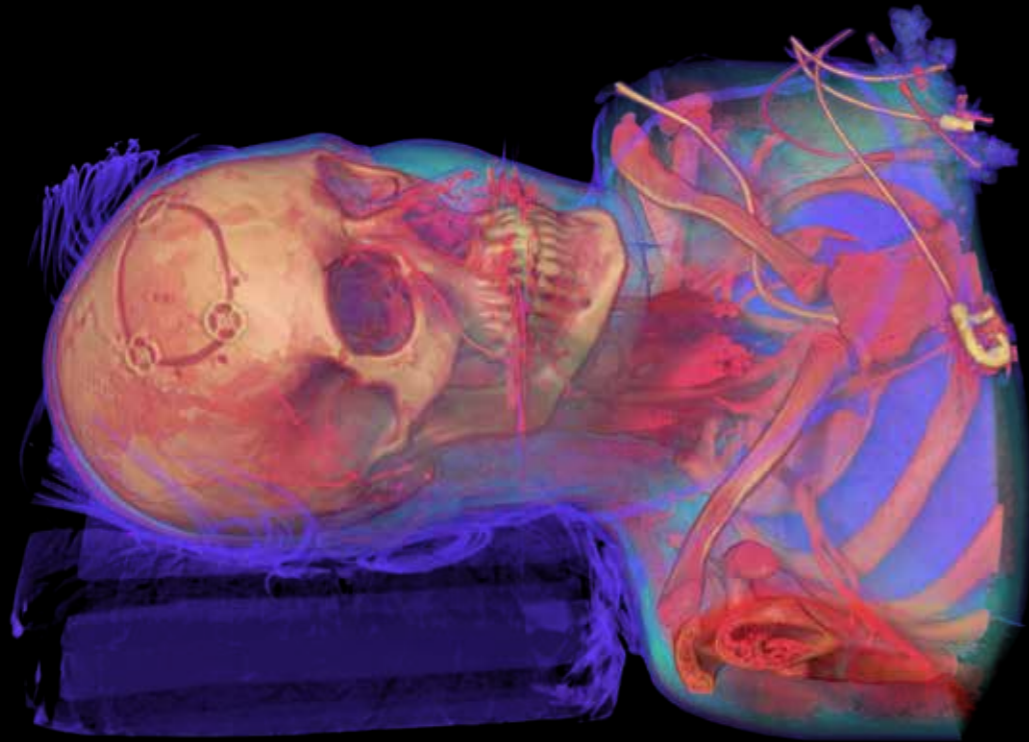


STANDARD CONTENT PACKAGE

HUMAN ANATOMY

The Human Anatomy Content package will provide the prerequisites for understanding the human anatomy and how it is affected by diseases, accidents and aging by exploring spectacular cases, unique for Inside Explorer.

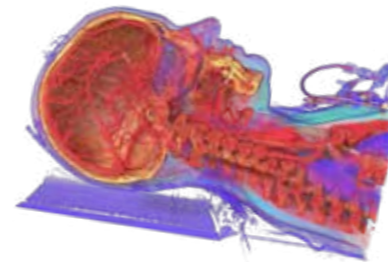
For the first time, you will be able to examine a heart pump, different signs of aging, the implications of a severe traffic accident and explore the most detailed 3D representation of a human brain. This content package can be used for exhibit purposes and educational classes to enrich the learning experience, allowing everybody to increase their understanding of the human body.



FULL BODY SCAN - TRAFFIC ACCIDENT

A scan of a woman who died in a road accident. The examination provides a quick overview of the dead woman's anatomy and can reveal the cause of death—in this case, a broken neck. There are also a number of visible fractures to the jaw, on the right foot, left tibia and fibula, the right knee, several pelvic fractures and the left neck of the femur.

Data by
Linköping university,
Sweden



STROKE PATIENT

A CT scan of a living patient who has been treated for stroke. The patient has undergone surgery for a ruptured aneurysm in a small blood vessel in the brain using a procedure called "clipping", which simply put means the burst blood vessel is repaired using a small metal clip.

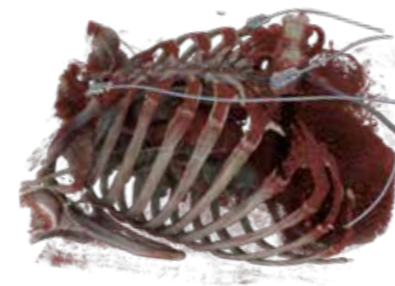
Data by
Linköping university,
Sweden



FULL BODY SCAN - AGING

Scan of a man in his fifties in physically good health. An example of natural ageing of the body is seen in the spine where the height between the first and second vertebra is reduced. You can also see calcification in the vertebrae, also a result of ageing.

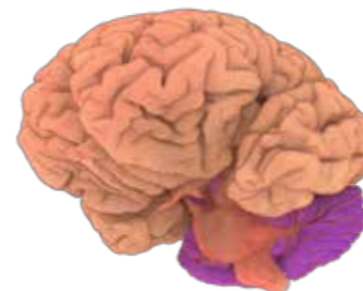
Data by
Linköping university,
Sweden



ARTIFICIAL HEART PUMP

The heart pump fits neatly into a cavity below the heart next to the diaphragm. It connects to the left ventricle, where the blood leaves the heart. This particular type of pump is used where heart function has all but failed and conventional medical treatment is unable to help.

Data by
Linköping university,
Sweden



BIG BRAIN ATLAS

Brain Atlas, which are used by other scientists investigating specific parts of the brain. In this dataset you will be able to explore the highest resolution 3D Brain Atlas yet made of a human brain and learn more about the brain.

Data by
Jülich Research Centre,
Montreal Neurological
Institute



STANDARD CONTENT PACKAGE

HUMAN ANATOMY 3D PRINTING AND IMPLANTS

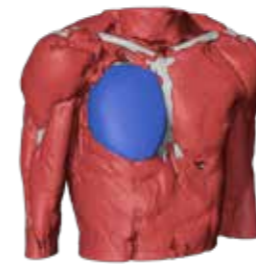
The Human Anatomy content package "3D Printing and Implants" will provide a number of examples of how CT-scanning, 3D modelling and 3D printing can be used to create custom-made implants that are perfectly fitting each patient's anatomy for low invasive treatment of pathologies such as Pectus Excavatum, Poland Syndrome and Airway Stenosis Disease.



AIRWAY STENOSIS DISEASE

Chest CT scan with contrast of a living patient suffering from an airway stenosis. The patient cannot breathe normally because of a reduction of the section of the airway. Treatment consists in implanting an airway stent to get a normal airway section.

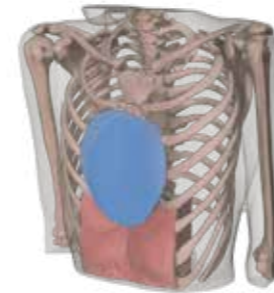
Data by
IMA Solutions SARL,
France



POLAND SYNDROME

CT scan acquisition of a living patient suffering of a Poland Syndrome congenital disease. Poland Syndrome is a partial or total lack of the Pectoralis Major muscle. It can be corrected by inserting a 3D custom-made implant through surgery.

Data by
IMA Solutions SARL,
France



PECTUS EXCAVATUM

CT scan acquisition of a living patient suffering of a Pectus Excavatum congenital deformation. Pectus Excavatum is a deformation of the ribs and sternum. With a frequency of 1 over 300 births, it is the most common thoracic congenital deformation. This patient underwent a surgery to place a 3D custom-made implant to correct the deformation.

Data by
IMA Solutions SARL,
France



MANDIBULAE RESECTION – CANCER

Face CT scan of a living patient. The mandibular bone has been partially resected to remove a cancer tumor. Patient will undergo a surgery to reconstruct the missing mandibular part.

Data by
IMA Solutions SARL,
France



MAXILLOFACIAL – PROTRUDING MANDIBULAE

Face CT scan of a living patient. The mandibular bone is protruding meaning a bad alignment of upper and lower teeth. The patient will undergo a surgery to realign correctly the mandibular with the maxillary bone.

Data by
IMA Solutions SARL,
France



STANDARD CONTENT PACKAGE ANIMAL ANATOMY

Our Animal Anatomy content package is a great tool for learning more about animals and their living conditions. Based on CT-scans of animals from Kolmården animal and wildlife park, the largest park in Northern Europe, we have created a content package of fascinating animals. By taking part of the annotations about the animals and virtually explore the anatomy, you will receive insights about the fascinating animals included in this content package.

This content package is suitable for education and public outreach at aquariums, animal and wildlife parks, natural history museums, science centers etc.



CHIMPANZEE (PAN TROGLODYTES)

The chimpanzee is an 11-year-old male. He weighs 65 kg and comes from the Kolmården Zoo in Sweden. A chimpanzee's skeleton is similar to a human's but differs in a number of ways.

Data by
Kolmården animal and wildlife park, Sweden.



GOLDEN EAGLE (AQUILA CHRYSAETOS)

This eagle was found in the southern part of Sweden in 2008. It was injured in one of the wings and was placed in rehabilitation for a couple of weeks. The eagle was then transferred to the Kolmården zoo. It's a female and weighs 5.2 kg.

Data by
Kolmården animal and wildlife park, Sweden.



GREY SEAL (HALICHOERUS GRYPUS)

A fullbody scan of a The grey seal is found on both shores of the North Atlantic Ocean. It is a large seal, with males reaching 3 m long and weighing between 170 and 310 kg. The seal was born at the Kolmården zoo in Sweden in 2009. It was only 28 days old when it was scanned in the CT-scanner.

Data by
Kolmården animal and wildlife park, Sweden.



LION (PANTHERAL LEO)

The lion is a three year old female called "Shira". She comes from the Kolmården Zoo in Sweden and weighs 122 kg. An old fracture can be seen in one of the vertebrae close to the scapula and pieces of bone are visible in the stomach.

Data by
Kolmården animal and wildlife park, Sweden.



MOOSE (ALCES ALCES)

The moose is the largest living species in the deer family. Moose typically inhabit the boreal forests of the Northern Hemisphere in temperate to subarctic climates. Their diet consists of both terrestrial and aquatic vegetation. The most common moose predators are wolves, bears and humans.

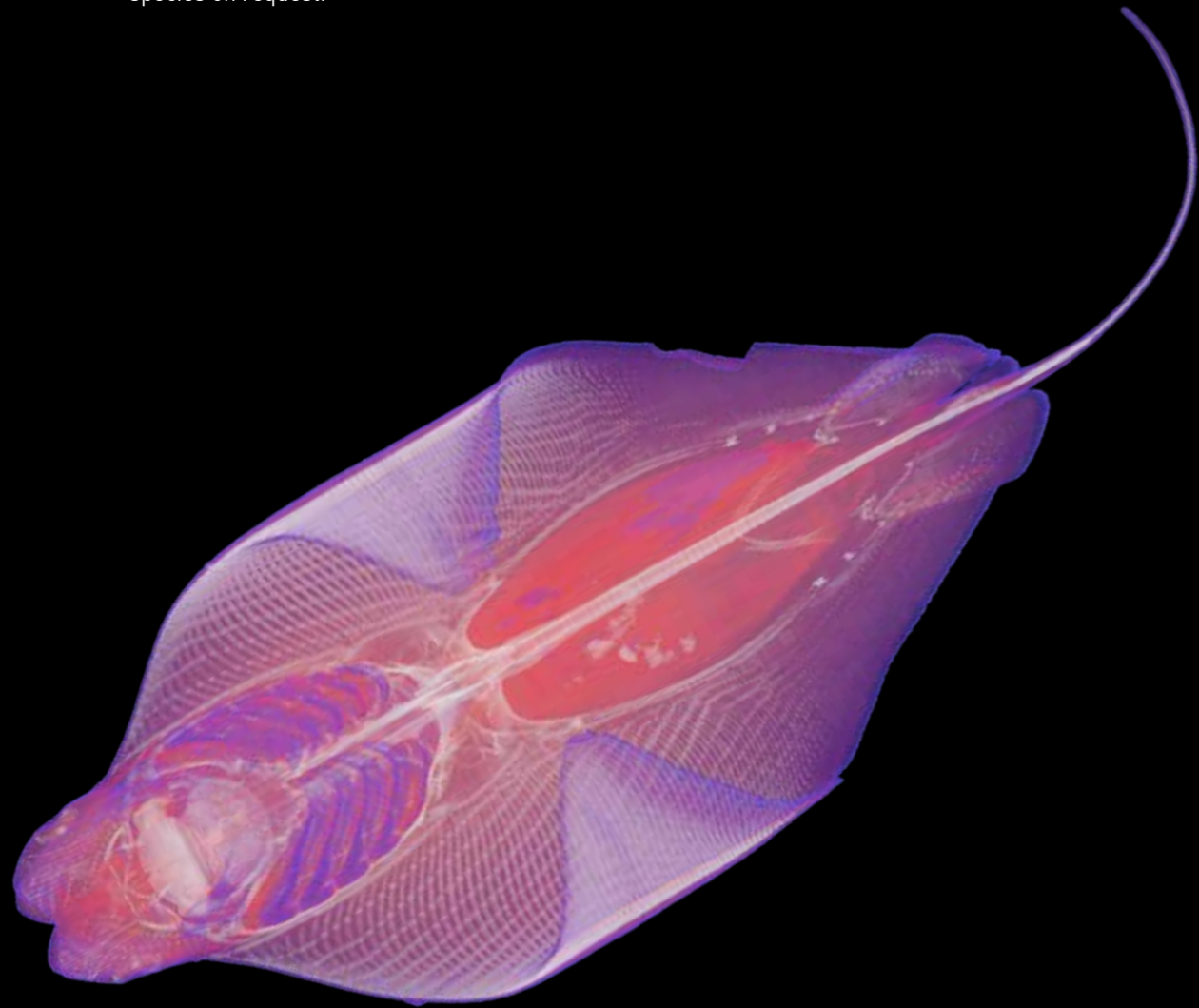
Data by
Kolmården animal and wildlife park, Sweden.

STANDARD CONTENT PACKAGE

SHARKS & RAYS

A collection of dataset featuring a selection of some of the most common sharks and rays. This unique content package is developed in an exclusive collaboration with shark expert and researcher Professor Gavin Naylor at Hollings Marine Lab, US. The package is a subset of a database called "Chondrichthye", which allows users to explore the evolution of over 1,000 species of sharks and rays.

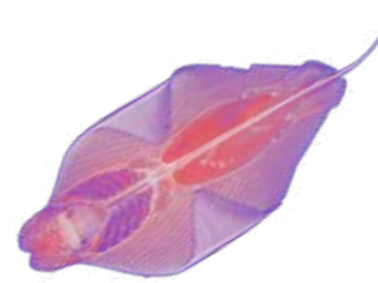
This content package is suitable for education and public outreach at aquariums, animal and wildlife parks, natural history museums, science centers etc. Interspectra can add further species on request.



SHORT-FIN MAKO (ISURUS OXYRINCHUS)

The short-fin Mako is one of the most beautiful of all of the sharks. It is also the fastest with burst speeds topping 60 mph. Known for making spectacular leaps 6m out of the water, short-fin makos are highly sought after by sports fishermen. (Juvenile female)

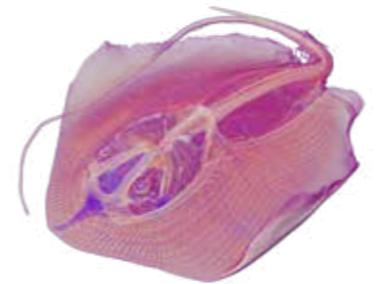
Data by
Professor Gavin Naylor,
University of Florida, US



COWNOSE RAY (RHINOPTERA BONASUS)

Cownose rays are probably best known for their spectacular seasonal aggregations where thousands of individuals migrate en masse along the Western North Atlantic coast. (Female)

Data by
Professor Gavin Naylor,
University of Florida, US



SOUTHERN STINGRAY (HYPANUS AMERICANUS)

Southern stingrays occur in coastal waters of the western Atlantic Ocean Gulf of Mexico, Caribbean Sea, to Brazil. They can often be found around coral reefs and sea grass beds. (Male)

Data by
Professor Gavin Naylor,
University of Florida, US



SCALLOPED HAMMERHEAD (SPHYRNA LEWINI)

The scalloped hammerhead has an unusual and distinctive structure of their heads, which are flattened and laterally extended into a "hammer" shape called a cephalofoil, giving the species its characteristic "scalloped" appearance. (Female)

Data by
Professor Gavin Naylor,
University of Florida, US



CLEARNOSE SKATE (ROSTRORAJA EGLANTERIA)

The Clear-nose skate is common in waters off the North West Atlantic coast from New England to the Gulf of Mexico. It is widely used in biomedical research as it is easy to maintain in laboratory conditions. Like all skates, it lays eggs in capsules known as "mermaids purses" that often wash up on shores.

Data by
Professor Gavin Naylor,
University of Florida, US

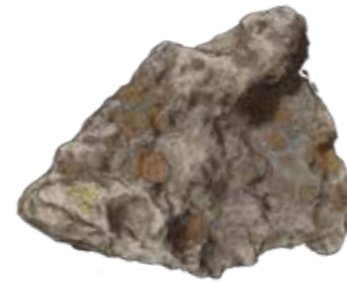
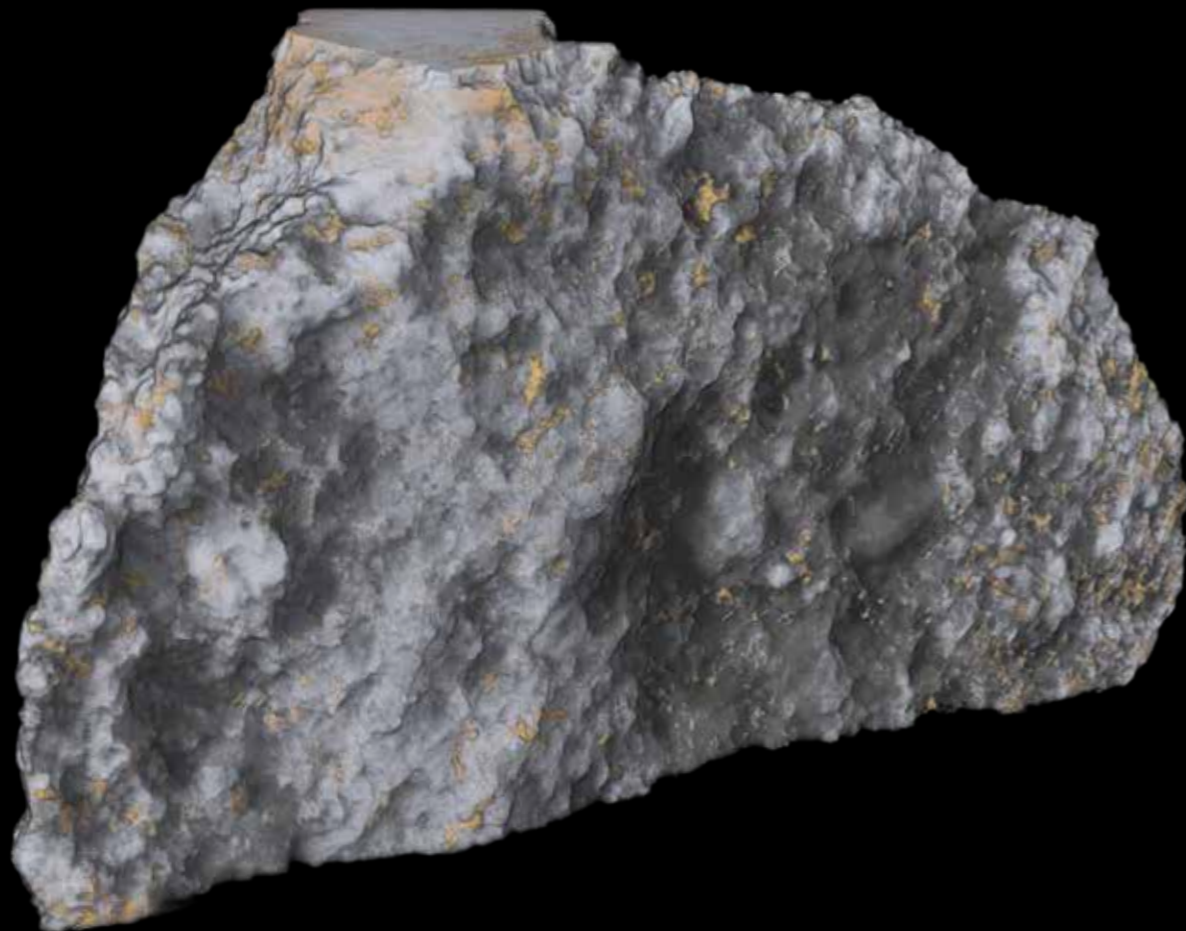


STANDARD CONTENT PACKAGE

METEORITES

A collection of meteorites from the Field Museum of Natural History in Chicago, US. This unique content package was developed in a collaboration with the researchers at Field Museum which holds one of the largest and most important natural history collections in the world. The content package contains a selection of important meteorites from the world-class meteorite collection at museum, one world's largest meteorite collections.

This content package is suitable for education and public outreach at natural history museums, planetariums, science centers etc.



ALLENDE - A CARBONACEOUS CHONDRITE

Get the inside story on a true rock star. The Allende meteorite is one of the most famous - and well studied - meteorites in the world. The silicate body of the meteorite contains carbon (= carbonaceous) and surrounds small mineral inclusions called chondrules (= chondrite). Only about 4% of all meteorites are carbonaceous chondrites.

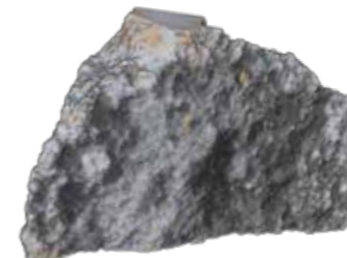
Data by
The Field Museum of
Natural History, Chicago,
US



NWA 11115 - A MARTIAN METEORITE

NWA stands for Northwest Africa, where this meteorite was found in 2015. The number 11115 means that this is the 11,115th meteorite found in the region. In 2016 Field Museum scientist, together with an international team of colleagues, confirmed that this is a piece of Mars's crust knocked from the surface if that planet by an asteroid.

Data by
The Field Museum of
Natural History, Chicago,
US



BOTTEN 003 - A FOSSIL METEORITE

466 million years ago two large asteroids collided violently, sending meteorites raining down on Earth across the Globe. This one fell to the seafloor, where it was preserved as a fossil until it was uncovered in a quarry in Sweden un 2002. See what we're learning from this ancient space rock.

Data by
The Field Museum of
Natural History, Chicago,
US



CHELYABINSK

The Chelyabinsk meteorite captured the world's attention when it exploded in Russia in 2013. Scientists study fragments like this one to understand their cosmic origins. See what we're discovering.

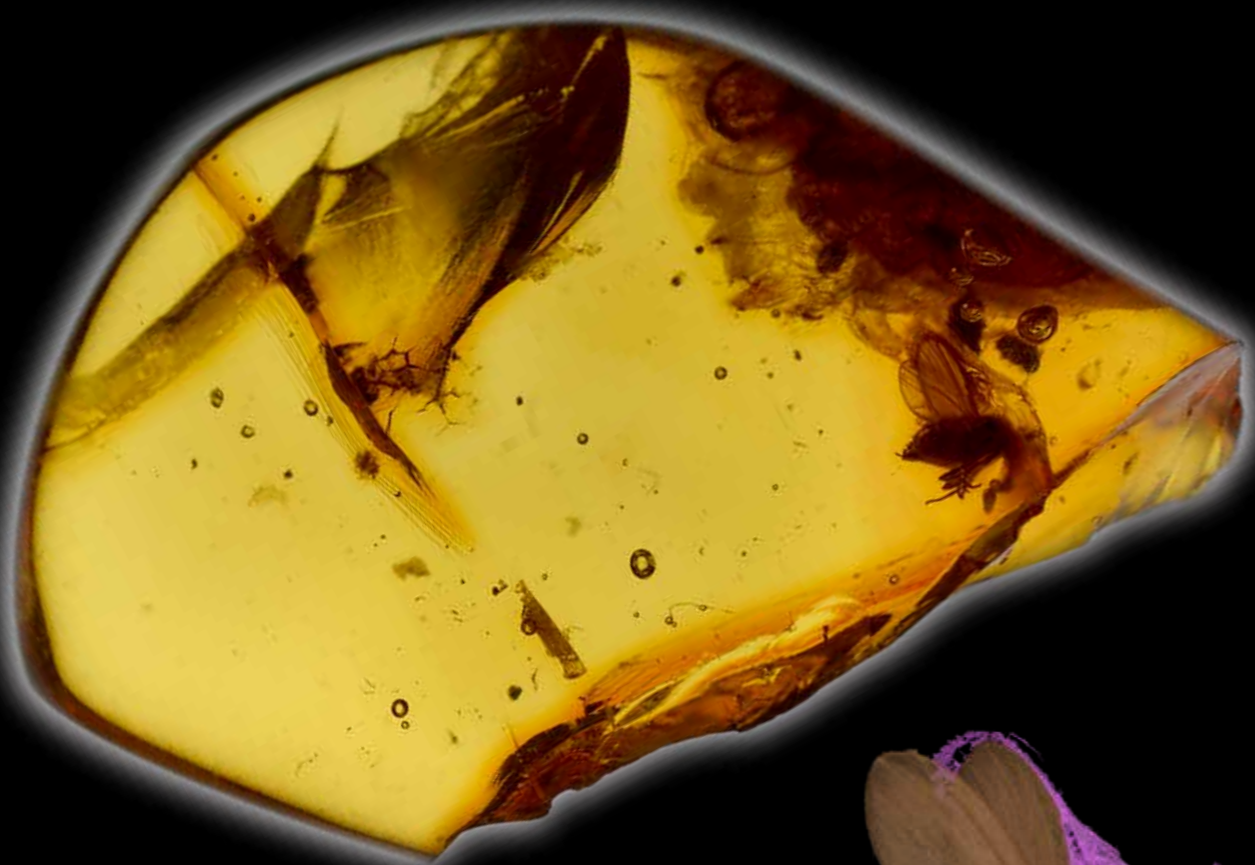
Data by
The Field Museum of
Natural History, Chicago,
US



STANDARD CONTENT PACKAGE

FOSSILIZED INSECTS IN AMBER

A collection of fossilized insects in amber from the Field Museum of Natural History in Chicago, US. This unique content package was developed in a collaboration with the researchers at the Field Museum. This content package is suitable for education and public outreach at natural history museums, planetariums, science centers etc.



FLY IN AMBER

Amber—fossilized tree resin—can preserve the anatomy of a trapped insect down to the tiny hairs on the legs of a fly. Now with new powerful x-rays, scientists can see more than ever.

Data by
The Field Museum of Natural History, Chicago, US



ROVE BEETLE IN AMBER

This rove beetle specimen is surrounded by cracks and air bubbles, making details hard to see with traditional microscopes. With high-resolution scans, scientists can remove obstructions and get a close look at and inside the specimen.

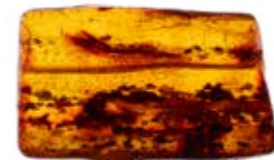
Data by
The Field Museum of Natural History, Chicago, US



SPIDER IN AMBER

Picking out the spider in this amber piece isn't easy for the untrained, or even trained, eye. The specimen is hidden by wood pieces. However, thanks to powerful x-rays, we can finally take a close look.

Data by
The Field Museum of Natural History, Chicago, US





STANDARD CONTENT PACKAGE

INSECTS

Explore the amazing world of insects in this selection of award-winning 3D Micro-CT scans by insect researcher Professor Javier Alba-Tercedor at University of Granada, Spain.

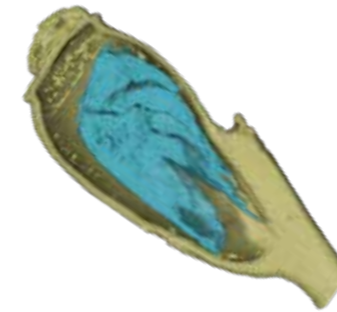
This content package is suitable for education and public outreach at natural history museums, science centers etc.



DUNG BEETLE (SCARABAEUS SP.)

A 3D scan of an dung beetle curated, scanned and interpreted Professor Javier Alba-Tercedor at University of Granada, Spain.

Data by
Professor Javier
Alba-Tercedor at
University of Granada,
Spain



HUMAN LOUSE EGG (PEDICULUS HUMANUS CAPITIS)

A 3D scan of an human louse egg curated, scanned and interpreted Professor Javier Alba-Tercedor at University of Granada, Spain.

Data by
Professor Javier
Alba-Tercedor at
University of Granada,
Spain



DESERT ANT (CATAGLYPHIS VELOX)

A 3D scan of an desert ant curated, scanned and interpreted Professor Javier Alba-Tercedor at University of Granada, Spain.

Data by
Professor Javier
Alba-Tercedor at
University of Granada,
Spain



MASSON BEE (OSMIA RUFA)

A 3D scan of an masson bee curated, scanned and interpreted Professor Javier Alba-Tercedor at University of Granada, Spain.

Data by
Professor Javier
Alba-Tercedor at
University of Granada,
Spain



HOUSE FLY (MUSCA DOMESTICA)

A 3D scan of an house fly curated, scanned and interpreted Professor Javier Alba-Tercedor at University of Granada, Spain.

Data by
Professor Javier
Alba-Tercedor at
University of Granada,
Spain



SPECIAL CONTENT PACKAGE

EGYPTIAN MUMMY - NESWAI

complete interactive application making it possible to explore the mummy Neswau currently in the collection of Museum of Mediterranean and near eastern antiquities, Stockholm, Sweden. Neswau, an ancient Egyptian priest, has been resting inside his intact wrappings for more than two thousand years. Unlike many other mummies that came to Europe in the 19th century, Neswau's mummy was never unwrapped and its contents stayed unrevealed. It is not until now, with the aid of modern scanning and visualization technology, that we can investigate the remains of Neswau and his burial equipment, inside-out, without causing physical damage.

Explore the mummy yourself by peeling off layer by layer and discover through this interactive visualization what is hidden within its wrappings! Study the details of the exquisitely inscribed and decorated coffins, made of heavy wooden planks imported from a foreign land. Stare face-to-face with Neswau himself as you find his gilded face mask and colourful cartonnage cover inside the inner coffin, there to magically preserve Neswau's body and identity for all eternity.

PACKAGE INCLUDES:

- Color 3D print of Neswau's inner coffin
- 3D printed Golden Falcon amulet
- High resolution photos and video material from the project process
- 4 Datasets including a high resolution full body CT scan and photogrammetry scan of Neswau





SPECIAL CONTENT PACKAGE

MUMMIES BY THE FIELD MUSEUM

This content package – first created for the acclaimed ‘Mummies’ travelling exhibition produced by the Field Museum – consist of two interactive experiences, one featuring Egyptian mummies and one Peruvian mummies. The exhibition ‘Mummies’ premiered 2016 and have since then been displayed at Los Angeles Natural History Museum and American museum of Natural History.

The interactive experience allow visitors to explore inside the wrappings of mummified human and animal remains. By featuring data garnered from CT scans via a touch screen interface, visitors can interact with selected mummies in a variety of ways: They can remove layers of ornament and wrapping, examine details of the mummification process, and “section” mummies to examine their skeletons and see internal elements, such as organ preservation.

Embedded within each mummy dataset is a series of informational popups that highlight important and unique aspects and reveal internal details that scientists have learned using CT scan technology.

EGYPTIAN MUMMIES

The Egyptian experience features four mummies: the Gilded Lady, an adult male, a mummy from the pre-dynastic period, and a mummified gazelle.



PERUVIAN MUMMIES

The Peruvian table will feature three: a child who was buried with several figurines and two mummified groupings, one a mother and child and the other an adult with two children. Visitors can choose which mummy to explore from a menu screen.





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|Interspectral|

Interspectral AB is a Swedish company with ambition to dramatically improve the learning experience in museums and science centers by making the inside visible. Our touch table solutions including CT-scanned content generates a deeper understanding of the subject and add a completely new dimension to the learning experience.

CONTACT

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