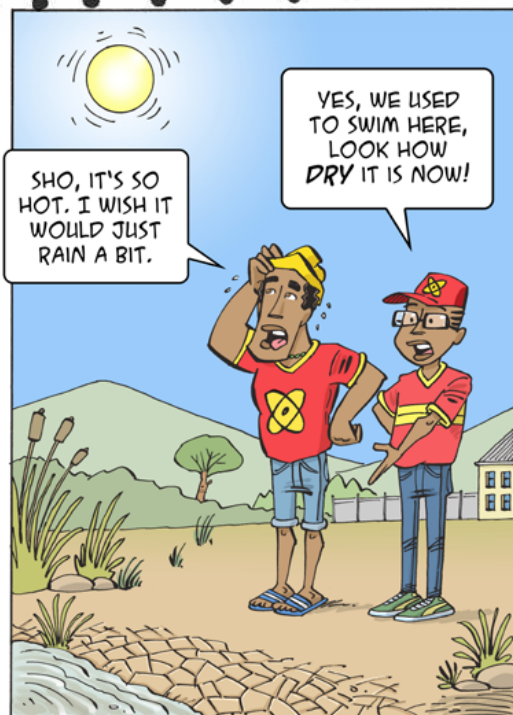


SCIENCE SPAZA

www.sciencespaza.org



SEDIMENT SCIENCE: MUDDY TALES OF THE PAST



STORIES IN SEDIMENT

FINE MATERIAL LIKE SAND AND POLLEN CONTAINS SIGNALS FROM THE ENVIRONMENT WHERE IT COMES FROM. AS IT COLLECTS ON THE GROUND IT FORMS **SEDIMENT**. EARTH SCIENTISTS DRILL INTO MUDDY PLACES TO COLLECT A **SEDIMENT CORE SAMPLE**.

IN THE LAB, WE READ EACH LAYER OF SEDIMENT LIKE A BOOK FROM THE OLDEST MUD AT THE BOTTOM TO THE NEWEST AT THE TOP OF THE CORE, JUST LIKE A STORY FROM START TO END TO LEARN ABOUT THE PAST ENVIRONMENTS.



Photo:
Dr. Jemma Finch



Knowledge is Ncah!



SHAKE IT UP WITH SEDIMENT!



DO AN EXPERIMENT TO SEE WHAT'S IN THE SEDIMENT AT YOUR SCHOOL OR HOME.



YOU WILL NEED:

- GLASS OR CLEAR PLASTIC JARS WITH LIDS
- MUD OR SOIL FROM A FEW DIFFERENT PLACES
- WATER
- A NOTEBOOK, RULER AND PEN

1 ADD THE MUD OR SOIL SAMPLES TO THE JARS.



2 ADD WATER. FILL ALL THE JARS TO THE SAME LEVEL.



3 CLOSE THE LIDS AND SHAKE WELL. MARK THE JARS AND LET THEM STAND FOR 24 HOURS.



4 **NEXT DAY:** LOOK AT THE LAYERS THAT FORMED IN EACH OF THE JARS. COMPARE THE DIFFERENT SAMPLES TO EACH OTHER. CAN YOU SEE DIFFERENT LAYERS? DOES THE THICKNESS OF EACH LAYER DIFFER BETWEEN YOUR SAMPLES?

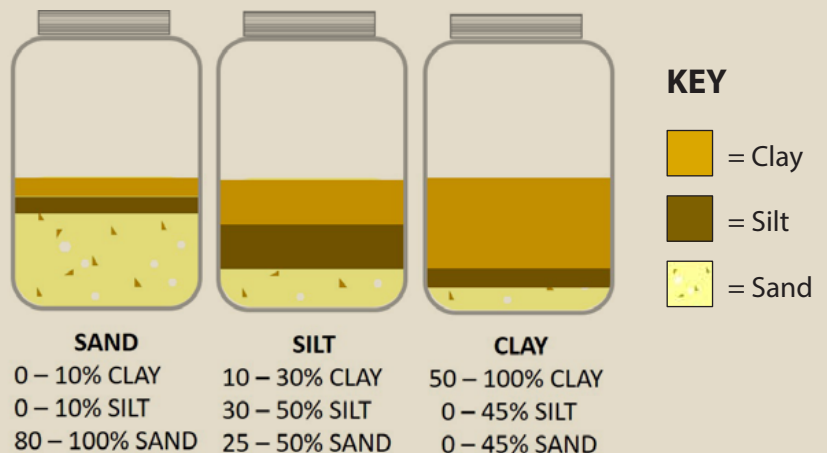


WHAT'S HAPPENING HERE?

After 24 hours your samples will settle into layers of *clay*, *silt* and *sand*. The thickness of each of the layers in your samples will give you an idea of what type of sediment you have.

Earth scientists use different methods, much like the experiment you just did, to learn about sediment and what the environment looked like in the past.

What does the size of sediment grains tell us? Large grains like sand or gravel are heavy and probably washed in with water, telling scientists something about the rainfall at the time.



PREPARING FOR THE FUTURE BY LOOKING AT THE PAST

Palaeo scientists (palaeo = past) can build up pictures of what a place looked like a long time ago to see how it changed over time.

This is important to help us prepare for the climate change challenges that we are facing now.



Photo: Torsten Haberzettl



Photo: Magnus Schult

CAREERS



Darryl Dreyer

is an **Environmental Educator** at the West Coast Fossil Park. Darryl helps visitors to the park understand what **fossils** are, how they formed and what we can learn from them. "When we understand how we are all connected to our surroundings it gives us a more caring attitude towards one another and the environment."



CURRICULUM LINKS

- *Life Science Gr 10-12*
Diversity, change and continuity: History of life on Earth;
Environmental studies:
Biosphere to ecosystems
- *Natural Science Gr 7-9*
The Earth as a system: The rock cycle; Atmosphere

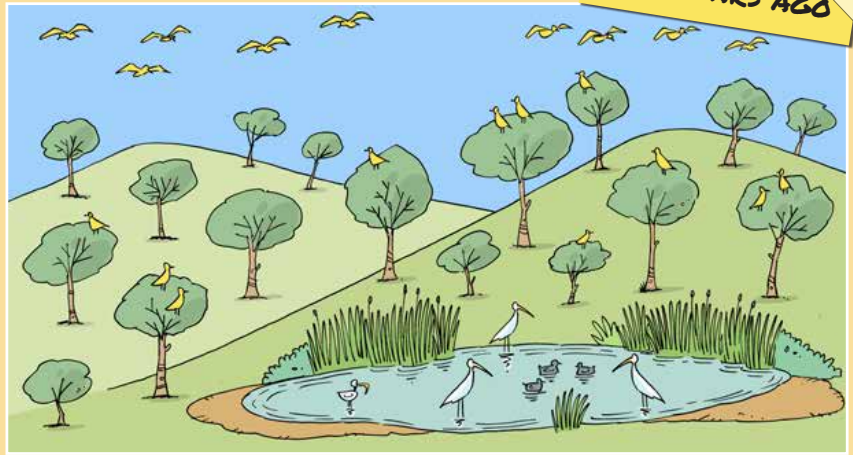
Knowledge is NCAW!



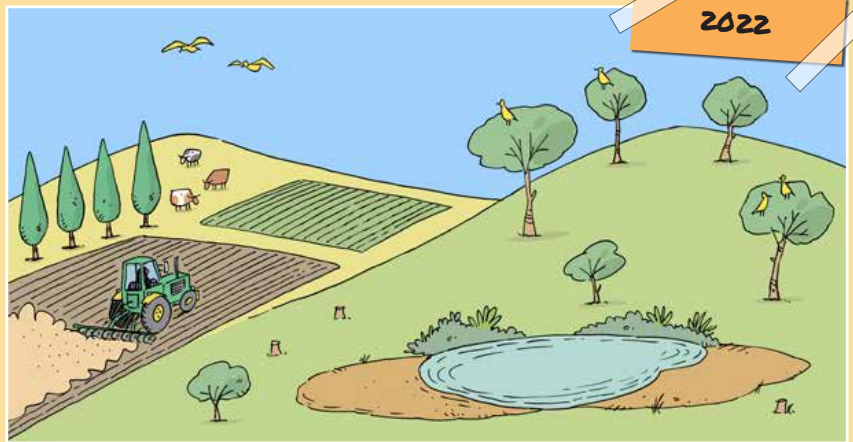
SPOT THE DIFFERENCES

PLACES CHANGE OVER TIME.
CAN YOU SPOT THE DIFFERENCES
BETWEEN THE TWO PICTURES?

THINK ABOUT IT.
HAVE A GROUP DISCUSSION
ABOUT WHAT YOU THINK
CAUSED THE CHANGES IN
THE PICTURE.



1000 YEARS AGO



2022

Answers: 1. Tractor and farmland; 2. Fewer trees; 3. Fewer birds in the air and trees; 4. Water birds in the air and trees; 5. Less water and more mud; 6. New type of plants near farm land and at the water

START YOUR OWN SCIENCE SPAZA

Do you want to start a science club at your school? Send us the following information, and Science Spaza will contact you.

School: _____

Name: _____

Telephone number: _____

Email address: _____

Physical address: _____

Visit www.sciencespaza.org, email info@sciencespaza.org, SMS or WhatsApp us on 076 173 7130 or write to us at PO Box 22106, Mayor's Walk, 3208.

COMPETITION ALERT!

SEND US PHOTOS OF YOUR SEDIMENT EXPERIMENT AND YOUR THOUGHTS ON HOW ENVIRONMENTS AROUND YOU HAVE CHANGED THROUGH TIME. WHATSAPP US YOUR ANSWERS ON 076 173 7130 AND STAND A CHANCE TO WIN COOL PRIZES!*

*top 5 entries will be chosen to win a prize



This worksheet represents a collective effort put together by the participants of the Train-ME2 connect 2021 summerschool. Train-ME2 connect is a training initiative born out of the German-South African project "Tracing Human and Climate impacts in South Africa" (TRACES), an international and interdisciplinary collaboration of researchers funded under the "Science Partnerships for the Adaptation to Complex Earth System Processes" (SPACES II) program of the German Federal Ministry of Education and Research (BMBF).



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