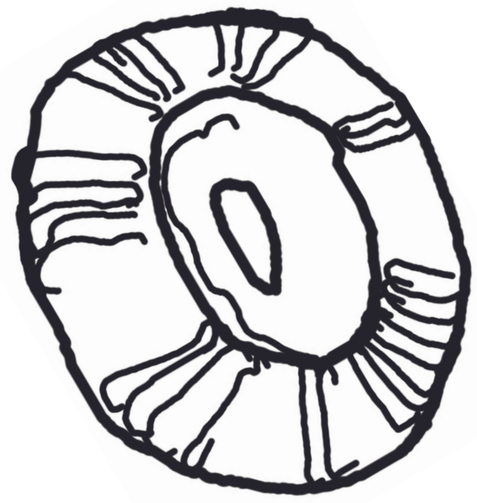
# WHAT IS CHALK



## LEARNING OBJECTIVES

1. TYPE OF SEDIMENTARY ROCK
2. TO UNDERSTAND THE ROCK PROPERTY: POROSITY

## DURATION
## 1 HOUR +
## DIFFICULTY
## MEDIUM

## YOU WILL NEED

- A PIECE OF CHALK AND OTHER ROCK TYPES
- WATER
- SET OF SCALES
- MEASURING CYLINDER/JUG

## COCOLITHOPHORE

IN THE LATE CRETACEOUS PERIOD, RISING SEA LEVELS MEANT THAT KENT WAS INUNDATED BY WARM SHALLOW SEAS.

MARINE PLANKTON, KNOWN AS COCCOLITHOPHORES, WHICH ARE SINGLE CELLED ALGAE WITH SMALL, CALCIUM-RICH SKELETONS, THRIVED IN THESE CONDITIONS.

AS THEY DIED, THEY SANK TO THE SEA BED, WHERE THEY BUILT UP OVER TIME AND WERE COMPRESSED TO EVENTUALLY FORM A TYPE OF ROCK: CHALK.

FOSSIL EVIDENCE IN THE CHALK TELLS US ABOUT THE CONDITIONS FOR WILDLIFE AT THIS TIME.

FOSSILISED SHARK TEETH, FISH, AMMONITES, SEA URCHINS, BIVALVES, SPONGES AND MARINE REPTILES CAN ALL BEEN FOUND IN THE CHALK.

CHALK IS A TYPE OF SEDIMENTARY ROCK.

IT HAS A SOFT FINE TEXTURE, IS WHITE/LIGHT IN COLOUR AND POROUS.

IT IS A TYPE OF LIMESTONE (CALCIUM CARBONATE) COMPOSED OF THE MINERAL CALCITE.

LIMESTONE IS A MATERIAL USED IN A VARIETY OF DIFFERENT WAYS, INCLUDING CONSTRUCTION AND WITHIN AGRICULTURE.

CHALK IS FOUND ACROSS THE GEOPARK UNDERNEATH THE CHALK GRASSLAND HILLS AND IN THE STEEP CLIFFS AT THE COASTLINE.

DID YOU KNOW THE KENT AND FRENCH COASTS ARE ACTUALLY STILL CONNECTED TODAY BY THIS LAYER OF CHALK? IT RUNS FROM DOVER ALL THE WAY TO CALAIS, UNDERNEATH THE SEA WAVES.

kentdowns.org.uk/geopark

CROSS-CHANNEL GEOPARK TRANSMANCHE

Kent Downs Area of Outstanding Natural Beauty

Parc naturel régional des Caps et Marais d'Opale

Interreg France (Channel Manche) England UNESCO Sites across the Channel European Regional Development Fund

Conservatoire d'espaces naturels Hauts-de-France

EUROPEAN UNION

# WHAT IS CHALK

## POCKETS
## PORES
## POROUS

## ACTIVITY

1. WEIGH YOUR PIECE OF CHALK WITH THE SCALES, THIS IS ITS WEIGHT WHEN DRY.
2. PLACE THE CHALK IN A CUP OF WATER AND WAIT 5 MINUTES.
3. TAKE THE CHALK OUT OF THE WATER, SHAKE IT AND WEIGH IT AGAIN, THEN RECORD THE WEIGHT.
4. REPEAT STEP 3 IN INTERVALS UNTIL THE CHALK NO LONGER INCREASES IN WEIGHT.

CALCULATE HOW MUCH WATER YOUR CHALK HAS ABSORBED.

FOR A BIGGER CHALLENGE CAN YOU CALCULATE WHAT PERCENTAGE OF ITS VOLUME THE CHALK HAS ABSORBED?

TO DO THIS YOU NEED TO KNOW THE VOLUME OF THE CHALK WHICH YOU CAN CALCULATE USING THE DISPLACEMENT METHOD: POUR 100 ML OF WATER INTO A MEASURING JUG AND ADD THE CHALK. MEASURE HOW MUCH THE WATER LEVEL HAS RISEN, THIS IS THE CHALKS VOLUME.

TO FIND WHAT PERCENTAGE OF ITS VOLUME THE CHALK HAS ABSORBED, DIVIDE THE VOLUME OF WATER BY THE VOLUME OF THE CHALK.

COLLECT DIFFERENT TYPES OF ROCK AND REPEAT THE EXPERIMENT TO FIND OUT WHICH ROCK IS MORE POROUS.

## AQUIFER

BECAUSE DIFFERENT TYPES OF ROCK ARE FORMED IN DIFFERENT WAYS, THEY HAVE A DIFFERENT SET OF PROPERTIES.

ONE PROPERTY OF A ROCK IS ITS POROSITY. THIS IS THE ABILITY FOR THE ROCK TO ABSORB WATER. A ROCK MAY HAVE TINY POCKETS OR PORES THAT CAN BE FILLED WITH WATER. THE MORE POROUS THE ROCK, THE MORE WATER IT CAN HOLD.

AN AQUIFER IS AN AREA OF ROCK UNDERNEATH THE SURFACE OF THE EARTH WHICH ABSORBS AND HOLDS WATER.

UNDERNEATH KENT'S CHALK GRASSLANDS, THERE ARE CHALK AQUIFERS, WHERE MUCH OF OUR WATER COMES FROM TODAY TO SUPPLY THE WATER IN OUR TAPS.

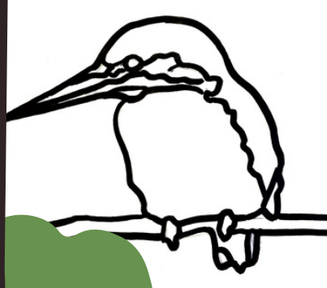
## CHALK STREAMS

THE UNDERGROUND WATER SOURCES THAT SUPPLY OUR DRINKING WATER, ALSO FEED OUR LOCAL RIVERS AND STREAMS.

THIS MEANS IT IS REALLY IMPORTANT THAT WE DO NOT WASTE OR POLLUTE WATER, SO THAT MORE REMAINS IN THE LOCAL ENVIRONMENT, CLEAN AND HEALTHY.

CHALK STREAMS ARE A GLOBALLY RARE FRESHWATER HABITAT AND IDEAL ENVIRONMENTS FOR LOTS OF WILDLIFE INCLUDING KINGFISHERS, TROUT, CADDISFLY LARVAE AND WATER CRESS.

THE MAJORITY OF THE WORLD'S CHALK STREAMS ARE FOUND IN ENGLAND, WITH SEVERAL IN KENT INCLUDING THE RIVER DARENT, DOUR, THE GREAT STOUR, THE LITTLE STOUR, NAILBOURNE AND THE NORTH AND SOUTH STREAMS.



kentdowns.org.uk/geopark

CROSS-CHANNEL GEOPARK TRANSMANCHE

Kent Downs Area of Outstanding Natural Beauty

Parc naturel régional des Caps et Marais d'Opale

Interreg France (Channel Manche) England UNESCO Sites across the Channel European Regional Development Fund

Conservatoire d'espaces naturels Hauts-de-France

EUROPEAN UNION