

# WHAT IS FLINT



**LEARNING OBJECTIVES**

1. TYPES OF ROCK
2. ROCK FORMATION
3. USES OF ROCK

**ELEMENT > COMPOUND > ROCK**  
**SILICON > SILICA > FLINT**

IN CHEMISTRY, AN ELEMENT IS A SUBSTANCE THAT CONSISTS OF ONLY ONE TYPE OF ATOM.

A COMPOUND IS A SUBSTANCE THAT CONSISTS OF TWO OR MORE ELEMENTS.

**SILICON**  
 ELEMENT  
 SILICON IS AN ELEMENT THAT IS ABUNDANT ON EARTH.

IT HAS MANY USES, INCLUDING IN CONSTRUCTION, GLASS MAKING AND FOR MAKING ELECTRONIC PARTS, SUCH AS EXTREMELY ACCURATE CRYSTAL OSCILLATORS FOR COMPUTERS AND WATCHES.

**SILICA**  
 COMPOUND  
 SILICA IS SILICON DIOXIDE, A COMPOUND OF SILICON WHICH IS FOUND IN SAND, QUARTZ, AND FLINT.

FLINT IS A TYPE OF NATURALLY OCCURRING SEDIMENTARY ROCK, MADE FROM SILICA. IT IS FOUND IN A VARIETY OF SIZES, FROM PEBBLES, TO LARGER STONES, TO SHEETS OF ROCK.

THE EXACT DETAILS OF HOW FLINT IS FORMED ARE COMPLEX AND STILL UNCERTAIN- WHICH MAKES IT ALL THE MORE INTERESTING TO STUDY!

IT ALL STARTS IN THE ANCIENT SEAS OF THE CRETACEOUS PERIOD, MILLIONS OF YEARS AGO.

TINY PLANKTON CALLED COCULITHOPHORES, THRIVED IN THESE SEAS. WHEN THEY DIED THEIR CALCIUM RICH SKELETONS SANK TO THE SEA BED.

ALSO WITHIN THESE SEAS, WERE LIVING ORGANISMS SUCH AS SEA SPONGES WHOSE SKELETONS CONTAINED THE MATERIAL SILICA. AGAIN, WHEN THEY DIED THEIR BODIES SANK TO THE SEA BED.

THIS SEA BED BECAME DEEPLY BURROWED BY MANY DIFFERENT MARINE ORGANISMS SUCH AS WORMS AND SHELLED ANIMALS.

OVER TIME, THE SEA BED WAS COMPRESSED AND CEMENTED TO FORM ROCK. THE CALCIUM RICH SKELETONS OF THE COCULITHOPHORES MADE CHALK.

BUT WHAT ABOUT THE SILICA DEPOSITS?

WELL, THE SILICA WENT THROUGH A GEL OR SLIME-LIKE PHASE, FILLING THE HOLES AND BURROWS IN THE SEA BED MADE BY THE WORMS AND MARINE CREATURES, BEFORE HARDENING INTO FLINT.

THIS IS WHY FLINT OCCURS IN INTERESTING LUMPS (OR NODULES) AND LAYERS WITHIN THE CHALK, THAT CAN RESEMBLE WORM BURROWS OR BRANCHES.

BECAUSE THE FLINT IS BURIED WITHIN CHALK, THESE NODULES ARE OFTEN COATED WITH A THICK WHITE LAYER.

WHEN THE CHALK UNDER THE HILLS AND VALLEYS BECOMES ERODED, THE FLINT NODULES APPEAR AND ACCUMULATE IN GRASSLANDS OR AT PEBBLE BEACHES.

THESE FLINT DEPOSITS HAVE SOMETIMES BEEN TRANSPORTED AND DISPLACED AWAY FROM THEIR CHALK SOURCE, BY THE ACTION OF GLACIERS AND THE LONG-SHORE DRIFT.

FLINT IS A VERY HARD MATERIAL. WHEN STRUCK, IT FRACTURES LIKE GLASS TO CREATE RAZOR SHARP EDGES. BECAUSE OF THESE PROPERTIES, FLINT HAS BEEN USED THROUGHOUT HISTORY BY HUMANS.

PREHISTORIC TOOLS WERE MADE FROM FLINT INCLUDING CUTTING TOOLS FOR COOKING, ARROW-HEADS FOR HUNTING AND AXE-HEADS FOR WORKING OTHER MATERIALS LIKE WOOD.

IN KENT, EVIDENCE OF EARLY HUMANS HAS BEEN FOUND IN THE GRAVELS OF EARLY COURSES OF THE RIVER STOUR, IN PARTICULAR AT FORDWICH. FLINT HAND-AXES WERE FOUND IN GRAVEL QUARRIES PROBABLY DATING TO C. 600,000 YEARS AGO. (NICHOLAS ASHTON)

BECAUSE OF ITS HARD, DURABLE QUALITIES, FLINT HAS ALSO BEEN USED AS A BUILDING MATERIAL. THIS CAN BE SEEN IN THE MANY FLINT WALLS AND BUILDINGS ACROSS KENT, INCLUDING THE MAISON DIEU IN DOVER.

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