

# Rock, Stones & Minerals

Activity Plans  
March 2020

## Science

Provided by Barbara Trivelli from Italy

**Title:** Making Crystals

**Aim:** Learning about super saturated solutions; how salt crystals form. This activity promotes collaborative work, the skill of learning to learn, observation and analysis.

**Materials:** Table salt – sodium chloride; Distilled Water; A clean, clear glass container – a jam jar is perfect; String; A spoon for stirring

### **Activity:**

**Step 1.** Present to pupils different stones, rocks, minerals, crystals. You can also break them to see the inside

**Step 2.** Organize with pupils “The stones museum”

**Step 3.** Introduce pupils to the experiment (or Lab) with a brainstorming activity

**Step 4.** Here is how the experiment works: ● Mix salt into almost boiling water until no more will dissolve (crystals start to appear at the bottom of the jar). ● Pour the solution into your jar. (if you put a spoon into the jar, it will not break) ● Suspend a string into the jar from the spoon laid across the top of it ● Leave your jar in a place not to be reached by pupils and wait for your crystal to grow!

**Step 5.** Once you have your crystals, here are some things to discuss: ● What shape and colour are your crystals? In fact, if there are impurities in the salt or the water, the shape and colour of the crystals will change ● If you try using different types of table salt – try iodized salt, un-iodized salt, sea salt, or even salt substitutes, can you see any difference in the appearance of the crystals? ● Do the same using different types of water, such as tap water compared with distilled water. Can you see any difference in the appearance of the crystals?

**Step 6.** Compare your crystals with other rocks, stones and minerals, also using a digital microscope or a magnifying glass



**Links/photos/recourses:** <https://littlebinsforlittlehands.com/how-to-grow-salt-crystals-easter-science/>  
<https://www.youtube.com/watch?v=9zoh-COQAQM>

<https://www.saltassociation.co.uk/education/properties-of-salt/grow-salt-crystal/>

## Technology

Provided by Nurten ÖZEL from Turkey

**Activity Title:** Let's make a clock with stones

**Aim:** Using stones in technology

**Resources/Materials needed:** Clock Mechanism, Wooden parts for clock floor, Adhesive for bonding Stones, Battery for clock

### **Activity:**

Step 1: Pieces of wood are glued together. (A whole piece of wood can also be used.)

Step 2: The clock mechanism is attached to the middle of the wooden piece.

Step 3: The stones are glued to form the racks of the clock.

Step 4: We can insert and run batteries on our watch.

Step 5: Now our watch is ready :)



### Activity Title ENGINEERING-landmark Heritage

Aim: To design a feature representing a landmark in your country while using hard-solids and softsolid mediums

Resources/Materials needed: stones/rocks, clay/mud, cardboard/tray, paint, toys (such as people/playmobile)

#### Activity:

**Step 1:** Introduction: Introduce various types of stones, rocks, minerals. Play around with them and let children feel the edges, corners, curves of each stone,rock,material provided. Google some images or take photos of buildings that can be point of reference to your design.

**Step 2:** Start designing and drafting your sketches on a piece of cardboard paper.

**Step 3:** Start building your model with clay/mud and stones/rocks. You can use both 2D and even 3D models.

**Step 4:** When finished let it dry for a few days and paint it once dry.

**Step 5:** Let children explore the building once dry and place their people/playmobile on the model or it's surrounding.

**Step 6:** Evaluate the work done and experiment to answer curiosity should they arise (eg: does it leak etc)



## Arts

by Nurten ÖZEL from Turkey

**Activity Title:** Stone Painting

**Aim:** The biggest feature of stone painting art is painting on stones by combining your imagination, creativity and handcraft.

**Resources/Materials needed:** Collect stones of various sizes from the seaside. When choosing stones, make sure that their surfaces are smooth. You will get better results when painting matte and lighter colored stones, especially white.

Stone paint or acrylic paint; If you can not find stone paint, you can use acrylic paint. Acrylic paints are water-based paints. They do not dry late like oil paints. It has fast drying properties. It is also possible to find silvery bright and metallic colors in acrylic paints. Picture brushes; round and flat-tipped brushes used for painting in various thicknesses.

Acetate pens; It helps you easily define and clarify or perform the application called contours in the picture.

Shine nail polish or water based varnish; you will use the drawing on the stone to make it bright and lively and fixed. You can also use a toothbrush or divit for painting.



### Activity

You should first clean the stones you collect from the seaside so that the paint is easily dispersed and free from dirt. To do this, add some detergent or liquid soap to a water basin. Put the stones in it and let it sit for 15-20 minutes. If you are obsessive about this, you can add some bleach to it. Then, under the tap, brush the toothbrush and clean the individual stones. Get rid of dirt and moss residues on it. Place them on a towel or paper towel and allow them to dry thoroughly.

Now your stones are ready to be painted. The stones need a primer to show the paint color without changing it. You can use white color or any color you like for primer paint. With a thick brush, paint one surface of the stones first and then the other surface after drying. If you double your liner, you can create clearer pictures or patterns.

To paint a stone on a stone whose primer painting process is finished and dried out, draw the object you want to paint without pressing too hard. Prepare a composition. You can draw a landscape picture, any object, butterfly, bee, fruit figures, human or angel figures, mandala pictures on the stones. This part is entirely up to your creativity. You can even write. Then texture and paint your composition with the help of brushes. You can pass over the parts you want to identify with transparencies. After finishing your painting, apply a thin coat with varnish or transparent colored nail polish. Let it dry and use your stone object wherever you want.

**These are the links for a short example of this activity:**  
<https://www.youtube.com/watch?v=aOWHy2DrEk8&list=PLa4lgeHI11WYxwUISHP3o0ccB2TSV9vJ4>  
<https://www.youtube.com/watch?v=1wIWmdMvAbc&list=PLa4lgeHI11WYxwUISHP3o0ccB2TSV9vJ4&index=3>  
<https://www.youtube.com/watch?v=LtkbfvI9zFY&list=PLa4lgeHI11WYxwUISHP3o0ccB2TSV9vJ4&index=2>

**Activity title:** Stones Maths

**Aim:** Using stones to improve students' observation, estimation, inference and measurement skills

**Resources/materials needed:** Stones, water, jars, scales, pen, prediction cards

### Activity

**Step 1.** A little sightseeing is done. During the trip, children's attention is drawn to the surrounding stones. They are asked to examine the stones with the magnifiers in their hands and find the stones of different structures and collect them in the bags.

**Step 2.** The children remove their stones and examine the size, weight and texture of the stones they have collected. All collected stones are combined and classified according to their characteristics.

**Step 3.** Children are divided into two groups. One group works with large stones and the other group works with small stones. Each child is given a jar, water is put in and the water level is marked. The children are asked to guess how many stones they will overflow by looking at the stones in front of them and to write down their predictions on their prediction cards.

**Step 4:** Then they start to throw the stones into the water and count the stones they threw. When the water is moved, attention is drawn to the increase of the water level and the result is recorded on the forecast card. The closeness of the predictions with the results and whether they make the correct predictions are discussed. The number of stones is compared and it is discussed whether big stones or small stones carry more water. Most - at least how many stones carry water.

**Step 5.** Each child is asked to take a stone. After calculating whether the stones they received are light or heavy, they are measured by means of scales to learn the weight of the stones. The weight of the prepared stones is recorded in the weight chart. It is determined who belongs to the heaviest and lightest stone. The stones are lined up from heavy to light.

