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| <b>Key Stage 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Created by InspirEd Workshops – Film & Animation Specialists.<br>Book a workshop to support this lesson plan. <a href="http://www.inspiredworkshops.co.uk/bicschool">www.inspiredworkshops.co.uk/bicschool</a>                                 |                                                                                                                                                             |
| <b>Curriculum Subjects</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Science</b> Art & Design<br><b>Maths</b><br>Geography                                                                                                                                                                                       |                                                                                                                                                             |
| <b>Learning Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Conduct a series of experiments that will result in an explosive eruption from a handmade volcano                                                                                                                                              |                                                                                                                                                             |
| <b>Materials</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BICKIDS® PLASTIDECOR® colouring crayons<br>The attached worksheets – 1 per group<br>At least 3 bottles of 500ml white vinegar<br>At least 2 tubs of bicarbonate of soda<br>A few bottles of red food colouring<br>15–20 bars of modelling clay | ml measuring jug (1 per group)<br>A liquid container, eg. an empty bottle or egg cup (1 per group)<br>Mixing spoon (1 per group)<br>Table covers and aprons |
| <b>Teacher Prep</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                | <b>Pupil Prep</b>                                                                                                                                           |
| Prepare for a lot of mess!                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                | None needed                                                                                                                                                 |
| <b>Lesson</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                |                                                                                                                                                             |
| <p><b>Design</b><br/>Draw an erupting volcano using BICKIDS® PLASTIDECOR® colouring crayons.</p> <p><b>Worksheet</b><br/>Divide the pupils into small groups, each will make their own volcano. Work through the worksheet and conduct a series of experiments to help determine the quantity of the ingredients needed. Use a separate piece of paper to encourage data recording and predictions.</p> <p><b>Make</b><br/>Follow the instructions on the 'Make' worksheet. The children must use their volcano design as inspiration.</p> <p><b>Add the solution to the volcano and stand back!</b></p> |                                                                                                                                                                                                                                                |                                                                                                                                                             |
| <b>Learning Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Pupils will work scientifically, gathering, recording and presenting data. They will ask relevant questions and use scientific enquires to answer them. To produce a handmade volcano using materials and a chemical solution.                 |                                                                                                                                                             |
| <b>Follow on Activities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Create a lanscape with the volcano as the focus. Use toy dinosaurs or animas to create a fun stopmotion animation.                                                                                                                             |                                                                                                                                                             |



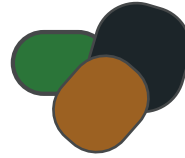
To create an erupting volcano you will need...



Bicarbonate of soda  
Red food colouring  
Vinegar



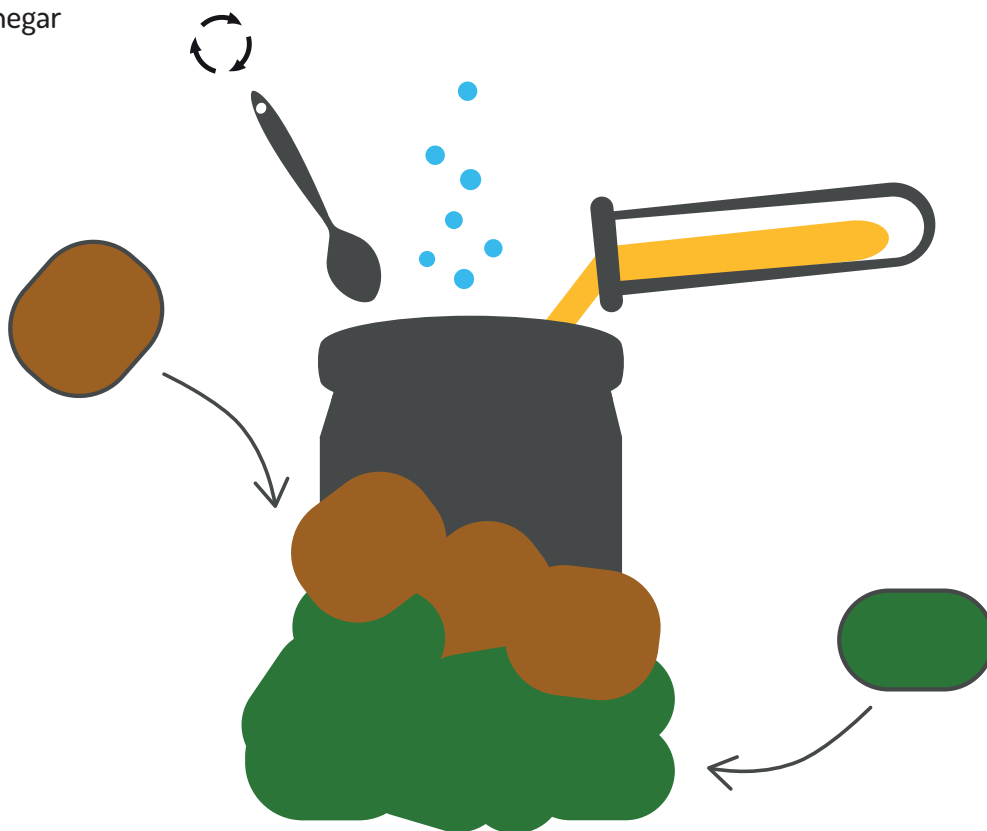
A spoon



Modelling clay



A small bottle,  
jar or egg cup



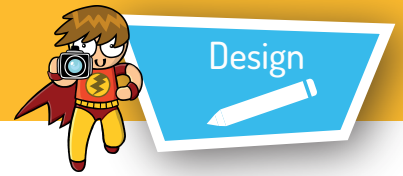
**BEFORE YOU MAKE THE VOLCANO:** Use the empty container and experiment with the quantities needed to make the liquid overflow. You will need to find out how much of each ingredient to put in.

Build the modelling clay up around the container making sure the top isn't covered.  
Make it in the shape of a volcano. Add the ingredients and mix with the spoon.  
Finally, stand back and watch the lava erupt out of the volcano.





## Volcano Eruption



Draw An Erupting Volcano.



Discover the answers to the below hypotheses by performing tests to find out the results.  
A successful experiment will determine how explosive your volcano will be.

**What happens when Bicarbonate of soda and vinegar are mixed together? Predict your findings.**

**Prediction**

**Result**

**What quantities of the ingredients do you need to make an explosive solution?**



How many spoonfuls of Bicarbonate of soda?

How many drops of food colouring?

How many ml of vinegar?

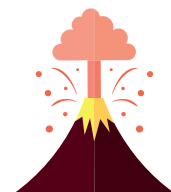
**Advanced Difficulty**

**Using the above results, work out how much of each ingredient you will need to cater for the whole class.** Clue: How many groups are conducting the volcano experiment?

How many spoonfuls of Bicarbonate of soda?

How many drops of food colouring?

How many ml of vinegar?



**To get an explosive eruption, what is the best order to mix the solution?**

**Prediction**

**Result**