Shape, Space & Desperate Measures

The play is a comedy Star Wars spoof, but is packed full of curriculum based problems and information. The same basic story works for all three levels but we have sections of maths that swap in and out.

For Key Stage 1 we start off by looking at measuring things and using the right unit of measurement – cms and metres, grams and kilograms, litres and millilitres - and ask the audience to decide on the appropriate unit of measurement for various objects. We do a little section on time, which has proved quite tricky for them so far, we get the audience to come and help us work out when one number is bigger than another and use the 'greater than' and 'lesser than' symbols. We introduce 2D shapes and we name them – square, rectangle, circle, pentagon and octagon and we look at how many sides they have and introduce the term 'polygon', we then move on to 3D shapes and get the audience to help pick out each one as we name them and look at the number of vertices, edges and faces and we use the appropriate names for each.

For Lower Key Stage 2 we do a more complex section on measurement – we re-cap how many centimetres in a metre, grams in a kilogram and millilitres in a litre and then set 3 different problems where the audience have to convert from one to the other to get the answer. And then do another short section on time reading time from a clock face, we then move on to measuring the perimeter of various shapes with an irregular outline when we have some of the measurements given and then move on to area, which we approach by counting square centimetres. We find the area of the irregular shape and also of a triangle. The next section looks at angles – we start with a quarter turn 90º, a half turn 180ºand a three quarters turn 270º and that a full turn is 360 degrees and we move on to the different types of triangle, name them all and look at how we can work out what the size of the angles are from wheat we are given. The next section is on shapes and we look at different quadrilaterals and name them, we look at regular polygons and name them and look at their lines of symmetry, then look at symmetry in various other shapes. We introduce finding a point on a grid using coordinates and later in the play we translate shapes on a grid and work out the new coordinates of certain points. The final section is on 3D shapes and their names and we count faces and vertices.

For Upper Key Stage 2 we do the same section on converting units to solve problems, we solve a simple time problem, we introduce a quadrant and look at coordinates that are positive and negative numbers and when we translate shapes for this age group we use positive and negative translations. We work out the area of several different rectangle shapes using area=width x height and we learn that to find the area of a triangle it's ½ base x height. We do the same section as for Lower KS2 on triangle and look at how to work out the size of angles in various different types of triangle given that all angles add up to 180º. We do a similar section on quadrilaterals to the previous level, but find angles using the knowledge that all the angles add up to 360º and we look again at symmetry in various shapes. We have another quick time problem where we have to count on 2 hours 5 mins to see what the time would be then move on to volume and we do a section on finding the volume of a cuboid by looking at how many cubic centimetres will fit into a shape and then use the formula V=L x W x H to find the volume of a shape.