***Playdoh Water Paper Questions…With Instructions***

1. You have a cylinder with a radius of 5 cm and a height of 4 cm. If the volume of this cylinder is doubled and the radius is kept the same, how many times bigger is the surface area of the new cylinder?
	1. Calculate the surface area of the cylinder
	2. Now you double the volume of the cylinder
	3. Use r = 5 and your new volume to find the height of the new cylinder.
	4. Calculate the surface area of the new cylinder
	5. Find how many times bigger the new surface area is.
2. A cylinder has a radius of 4 cm and a height of 30 cm. Water is poured into the cylinder to a height of 20 cm. You drop spheres of radius 2 cm into the water. How many will it take to make the water overflow?
	1. Calculate the volume of the full cylinder
	2. Calculate the volume of the water
	3. Find the volume of the air (cylinder – water)
	4. Calculate the volume of the sphere
	5. Divide the volume of air by the volume of a sphere to find how many spheres are needed
3. Use the same cylinder and water from question 2. If 3 cubes are dropped in, how big must the cubes be for the water to reach the top?
	1. Use the volume of air from 2c above
	2. Divide that volume by 3
	3. Find the side length of a cube with this volume.