

<p>Activity Idea</p> 	<p>Father Christmas Early Warning System</p> <p>This activity can be used with Key Stage 2 children and fits into Year 4's Electricity objectives. Each child/group will create their own early warning system to alert them to Father Christmas coming down the chimney by creating a pressure switch.</p>
<p>Outcome</p>	<p>The children will be able to create a pressure switch using either a bulb or buzzer to alert them to the arrival of Father Christmas.</p>
<p>Guidance</p> <p>A simple pressure switch can be made from a folded over piece of card with the edges covered in silver foil. The two wires are attached to the two edges covered in foil with crocodile clips which are then attached to the cell. At this point the switch is open. When the two sides of the covered foil are pressed together the switch is closed and the circuit is complete and the buzzer or light should turn on.</p> <p>Challenge the more able children to see if they can make a switch that completes the circuit when the pressure is taken off the pressure switch. This kind of switch could be used to put under the mince pies left for Father Christmas and would go off when he took a bite.</p>	<ul style="list-style-type: none"> • Ask the children if they would like to meet Father Christmas? If so, how could they make sure they are awake when he pops down the chimney? • Encourage the children to think about some sort of alarm system. Refer back to prior teaching on switches and insulators and conductors. Discuss other types of alarms, e.g. burglar alarms – how do they work? • Give the children a selection of different types of switches and see if they can put them into a circuit to sound a buzzer or light a bulb. • Now ask them to choose which switch would be the best to put at the bottom of the chimney so that they are alerted to Father Christmas' arrival. Hopefully they will realise that a pressure switch would be triggered as F.C. lands on it in the fireplace. • Ask the children to decide if it would be better if they heard the alarm go off or just saw a flashing light – this will help them decide whether to use a bulb or buzzer in their early warning system. • Ask the children what resources they would need to make their alarm and then provide the resources to each group to make their alarm. • Get the children to try out each other's alarms by dropping a plastic toy of Father Christmas down a toilet tube to represent the chimney. • Do they need to make any changes to their designs? • Where else might the alarm come in useful? Perhaps under their Christmas presents to alert them to anyone trying to open them too early?
<p>Success Criteria</p>	<p>The children will be able to explain how their switch works and describe which part is the insulator and which part is the conductor. They should also be able to recognise when the pressure switch is opened and closed and how this relates to the alarm.</p>
<p>Resources</p>	<p>Simple circuit components – cell, wire , buzzer or light bulb, silver foil, and card.</p>