

# Bird table alarm

Monitor birds visiting your school grounds – Andrew Ferguson explains how to make an alarm that sounds when a bird lands on the bird table

## You will need:

- A battery – mark the positive and negative terminals with correction fluid
- Two pieces of 30cm x 30cm wood
- Crocodile clip and leads
- Aluminium foil
- Two screws
- A 3 volt buzzer
- A sponge
- A model bird



## Testing the alarm

Now you can test the alarm by placing the model bird on the 'bird table'. When the bird presses down on the top piece of wood the two pieces of foil touch and act as a switch, completing the circuit and sounding the buzzer.

## Evaluating the design

The next stage is for the children to evaluate their design, working in pairs. Turning an idea on paper into a working model is never straightforward. The children may find that birds are so light that nothing short of a giant albatross will set off their alarm. How can the table be made more sensitive? Children should suggest cutting the sponges into thinner strips, or perhaps filling the model bird with stones! Or, perhaps its purpose could be changed to deter squirrels that will also be heavier. Do they have any solution to the problem of the alarm scaring birds away? (Longer wires, for example.)

## Designing the bird table

To get the most from the project, it's essential to involve the children in the design process. Encourage them to draw a labelled diagram, showing the equipment they need. Challenge older children to add a further explanation of how the model is to work.

- Add a screw to the middle of both pieces of wood. (See diagram, below.)
- Secure foil over the ends of both screws using masking tape – ensure the foil and screw are touching.
- Glue a piece of sponge to each corner of one of the pieces of wood – the side with the foil on. Glue the other piece of wood on top – sandwiching the sponges. The pieces of foil should sit a few mm apart.
- Use crocodile clip and leads to connect the screws to the battery and buzzer in a series circuit (see diagram).

## Safety

Even low-voltage batteries can be a hazard if allowed to short. Any conductor coming into contact with the two terminals will cause a short circuit – that, as well as flattening the batteries, could cause them to overheat or leak. Store batteries in plastic bags when not in use.

## Extra activities

Finally, the models can be displayed in the classroom. Ask children to design a poster with a name for their model and a simple set of instructions.

