## Overall Theme

**Strand:** Energy and Forces

**Strand Unit:** Electricity

**Curriculum Objectives:**
- Learn about electrical energy
- Investigate current electricity by constructing simple circuits
- Engage children in a fun, challenging construction which can be used for quizzing others. *

***Skills Development**
- **Questioning** – Asking questions about electricity that will identify problems to be solved and help in drawing conclusions and interpreting information
- **Predicting** – Offering suggestions (hypotheses) based on a number of observations as to the likely results of investigations.
- **Investigating and experimenting** – designing, planning and carrying out simple circuits and comparing results of various experiments. Using these experiments and knowledge to create a working quiz.

**Engagement**
The class lesson was based on investigating the flow of electricity in a circuit. Various questions and scenarios posed y the teacher and children were discussed and then it was agreed that we all needed to make our own circuits.

**Wondering/ Exploring**
Circuits designed by children in pairs: using battery holder, two batteries, a connector from the battery holder, a bulb holder and bulb.

**Method**
1. Attach the connector onto the battery holder.
2. Position batteries into the battery holder in the correct order.
3. Screw a bulb into holder.
4. Connect the wires into the bulb holder and attempt to light the bulb. When the bulb lights, the circuit is made.

**Predictions**

What will happen

- if the wires are not joined on properly?
- if a wire is joined to plastic?
- if there is a break in the circuit?

**Designing and making a circuit to create a quiz game**

The **initial stimulus** was matching African Capitals to their Country (Geography lesson). Other quizzes thought up by the children included:

- authors and books
- hurlers to their County towns
- seven times tables
- Gaeilge – Dathanna to English words and Míonna na Bliama to months of the year.

**Exploring and Planning**

As a result of discussion and observation, it was decided a shoe box with an attached lid might be most useful as the box would be suitable for housing wires, batteries, crocodile clips, wires, split pins, bulbs and buzzer. The class explored what materials would be best and to attach to boxes.

**Making**

1. A number of items per quiz was decided upon.
2. Bulb was attached to the top end of the box and two holes were punched for the wires.
3. Holes were punched down each side of the shoe box directly across from one another and a split pin inserted.

4. At the back of inside of the lid the wires were connected to split pins linking the question to the answer of the quiz.
5. The battery was taped to the inside of the box.
6. Outside the box, the capitals and countries were appropriately positioned.
7. Crocodile clips were attached from the bulb to the various answers. When the correct answer was chosen, the bulb lit up.

**Evaluating**

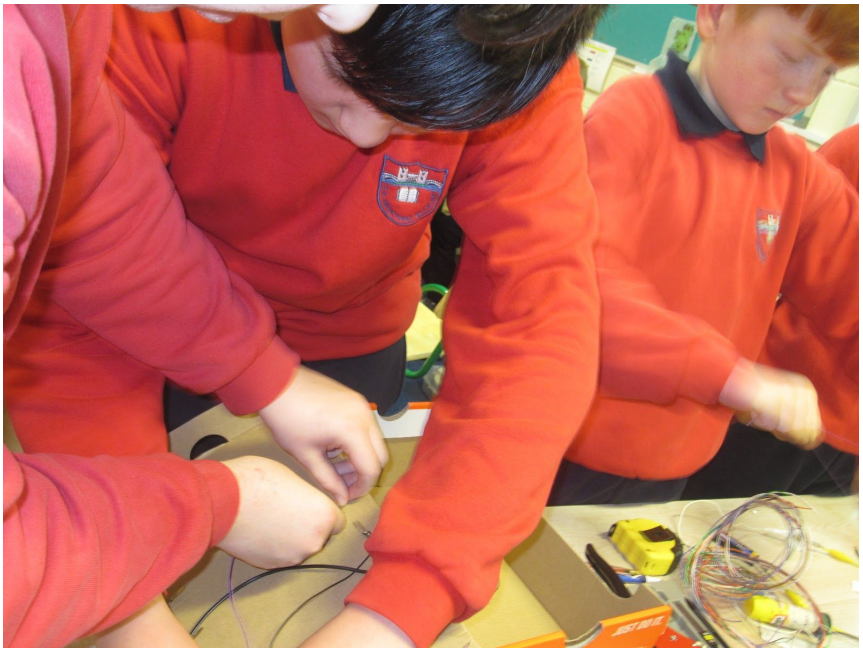
Some children found the bulb was not lighting up and some reasons suggested and investigates were:

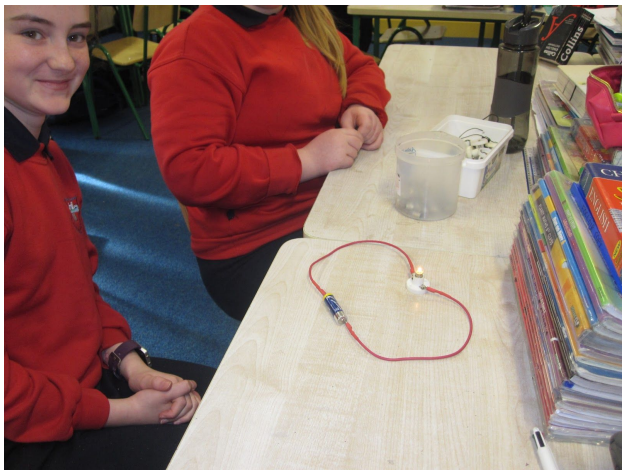
- Wires not connecting to wires
- Wires were connected to plastic covering. Hence children realised electricity does not flow through plastic materials.
- Wires became disconnected from the battery. Hence, power source is very important in the circuit.

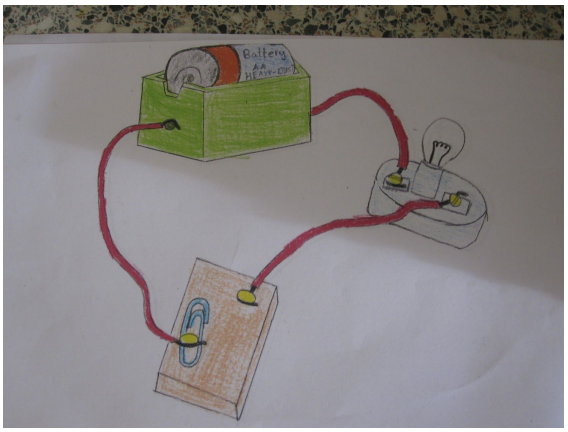
**Results**

We learned that electricity flows in a pathway called a circuit and a complete circuit is needed to make any electrical device work. The battery is needed in a circuit. Electricity does not flow if there is a broken circuit or pathway.

Children went in groups to other classes to showcase their “Quiz Boxes” and explained the workings of a simple circuit to the younger classes.






Battery