



TI-AIE

Using games: electricity

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What this unit is about

This unit explores how games can be used to teach and support your students to learn about electricity and provide a range of educational benefits.

Games are a useful tool to use in science lessons to play, engage and motivate students. Games are usually seen as fun things to play and so most students will want to participate. Your students will learn the science you are trying to teach more easily.

There is a range of games that you could use in your classroom, most of which do not require too much preparation. Many of these are well-known games that families play at home and, with some changes, they can be used to help students learn science. Once you have devised and made your games you can use them over and over again. Games can also be modified and adapted to most science topics.

Many students will enjoy playing these games when they have a spare moment as well as in lessons. All of this will help them to strengthen their understanding and build confidence in their knowledge.

What you can learn in this unit

- Develop, design and use games as a tool for learning.
- Engage and motivate children to develop and reinforce their understanding of electricity through playing games.

Why this approach is important

Games tend to be playful, which does not always fit well with some ideas about teaching and learning. But recent research shows that if learners are interested in what they learn and it is matched to their needs, interest and ability, they will achieve more. Games are a very good way to capture your students' attention and interest, and they encourage creativity, collaboration and communication.

Games are also useful as, in order to participate and to succeed, students:

- need to show their knowledge or develop their understanding quite quickly in order to win
- are encouraged to compete – that can be healthy and motivating, but it is important to stress that just taking part and thinking is as important
- build individual confidence
- learn to take turns and develop other group social skills
- gain insight into their own understandings
- develop different skills and roles
- obtain immediate feedback about their performance
- share their ideas and so deepen their understanding.

1 Types of game

There is a wide range of online games that could be used in the classroom and in students' own time to support their education. Many of these can be downloaded onto laptops and phones so that more students can access them. But access to electronic or online games is not universal and there are many other similar games that can be used in the classroom to help students in just the same way.

Board games, card games and active physical games can all be used to explore aspects of many science topics as well as electricity (see Resource 1). All these games could also easily be adapted to use with other science topics and with students of different age groups. Depending on your access to resources you can play games involving the whole class, or in groups, pairs or individually.

Activity 1: Using a memory pair game

Use the template given in Resource 2 to make a set of cards with electrical terms and pictures. Recycle old envelopes (or cards from boxes if paper is short) to make the cards.

Next ask a colleague to play with you. Spread the set of cards face down on the table or the floor. Take it in turns to turn over any two cards you like, placing them face up. If the cards match, i.e. you have a picture of a bulb and a card that says 'the light in a circuit', then the player keeps the pair. Now your colleague does the same. If the pairs do not match you have to turn the cards face down again. The aim is to gather as many matched pairs as you can.

