

# ICT AND EASY, MAGNIFICENT INTERACTIVE EXPERIMENTS

## Topic: Electricity



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### AIM Students:

**AGE:** 12-15

- learn basic principles of electric motors.
- apply theory to everyday uses of electric motors.
- build a working model of an electric motor for classroom use.

**DURATION:** 45 minutes

**NR. OF STUDENTS INVOLVED:** 20

**PREPARATION:** groups 4-5 (depending of the number of students / class)

**MATERIALS :** used for hands-on experiments

Strong neodymium magnet  
Cu wire  
1,5 Volt AA battery  
2 paper clips  
Rubber bend



Coil  
Several feet of insulated wire  
A nail (or a bolt)  
Permanent Magnet  
Small metal objects

### Exp.1.: paper clip motor



### Exp.2.: 1 minute motor

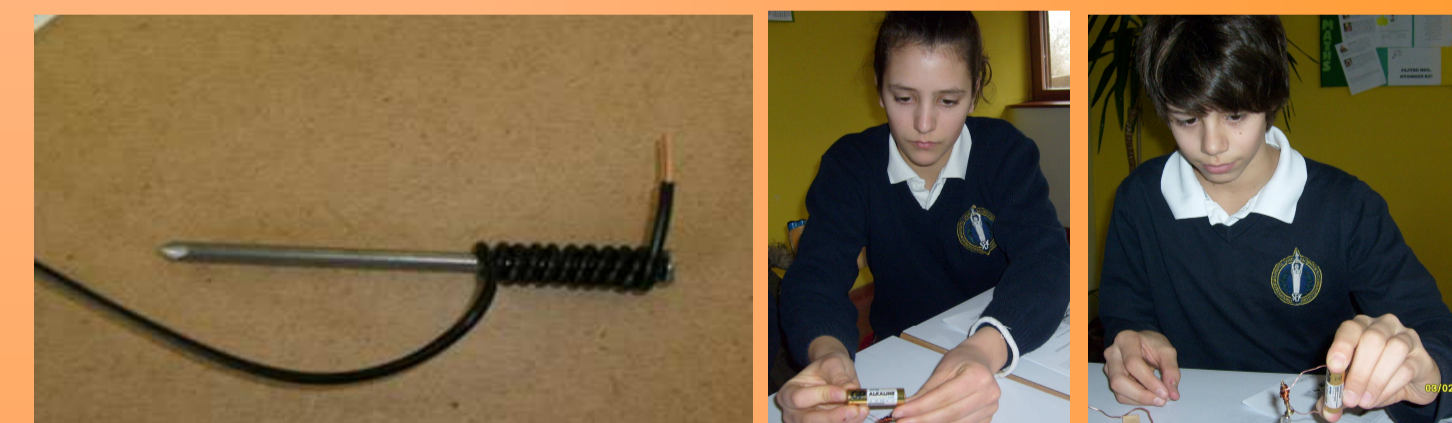


### Exp.3.: electric motor



Make a prediction. Use the right-hand rule to determine the direction of the force and current from the picture.

### Exp.5.: electromagnet



Make a prediction. Use the right-hand-rule to determine the direction of the force and current. Record your experiment using a digital camera.

### Exp.4.: homopolar motor



**Keywords:** ICT, project method, hands-on experiments

**Conclusion:** Using the hands-on experiment and ICT in Education combined with the project method is much more promising and asset to modernize the teaching of physics and make natural sciences than the traditional methods because they engage multimedia and Internet communication.

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