

Lesson Plan: Year 6

Maths

Objectives:

- To solve problems including the calculation and conversion of units of measure up to 2 decimal places.
- Multiply and divide by 1000 up to 3 decimal places.
- To solve problems which require answers to be rounded to specified degrees of accuracy.

Resources:

- Traditional and L.E.D light bulb.
- Calculators.

Teacher Input:

Remind children that Ecobot's mission is to help us save energy. He wants to know how much energy and money he can really save by using L.E.D energy saving bulbs instead of traditional ones. (Show children an example of each)

Explain that the amount of power needed to make a bulb work is measured in watts and the brighter the bulb the higher the number of watts used. Show children the Comparison Table (Resource A) which compares the amount of watts used by traditional and L.E.D bulbs of a similar brightness.

Discuss the differences.

It's easy to see that the L.E.D bulbs use much less energy, but Ecobot wants us to find out how much energy and money could be saved if the bulbs were on for 5 hours a day. Explain how this is calculated using an example:

E.g. Cost of using a 40w bulb.

1. Convert watts to kilowatts (Divide by 1000) = 0.04kw
 2. Convert to kilowatt hours (Multiply by 5 hours) = 0.2kwh
 3. Calculate cost per 5 hours (Multiply by 13p) = 2.6p
- (Electricity companies charge about 13p for every kilowatt hour used)

Repeat with 7w L.E.D bulb (Cost 0.46p) and work out the saving per day. (5 hours).

After completing the independent activity, bring children together and show how these savings can be rounded to the nearest penny and then this amount can be used to calculate the savings in a week and a year. The more able children could then go on to complete the savings table (Resource C) and answer the extension questions.

Independent Activity:

Children to complete table (Resource B) to find costs of using each bulb for one day (5 hours).

Calculate the savings in a week and a year and solve word problems. (Resource C)

Calculators could be used for all or some of the calculations depending on ability.

Differentiation:

H.A. Complete table to calculate costs (Resource B) savings table (Resource C) and extension problems.

M.A. Complete table to calculate costs (Resource B) and savings table. (Resource C)

L.A. Complete table to calculate costs (Resource B) using calculator.

Plenary:

Children to feedback on savings on using L.E.D bulbs compared to traditional bulbs. How many bulbs could be replaced at school and how much saving could be made over a year or 5 years?