# Let's Compare Holiday Lights!

If we compare different holiday lights we can find out where and how we can waste less energy!

First, we will use these assumptions for this activity:

1) We will use four strands of holiday lights to decorate the outside of our house. Each strand has 100 bulbs.
2) We will run these holiday lights on a timer for about six hours per day.
3) We will use the holiday lights for a total of 30 days this holiday season.
4) The cost of energy in Nova Scotia is $0.15/kWh.

| **Large Incandescent Holiday Lights (C9)** | **Large LED Holiday Lights (C9)** |
|---|---|
|  |  |
| Consumption per 100 bulbs: 700 watts (0.7kW) | Consumption per 100 bulbs: 6 watts (0.006 kW) |
| 0.7kW x _____ light strands = _____kW<br><br>_____kW x ____hr/day = _____kWh/day<br><br>_____kWh/day x _____days/holiday season<br><br>=_____kWh/holiday season | 0.006kW x _____ light strands = _____kW<br><br>_____kW x ___ hr/day = _____kWh/day<br><br>_____kWh/day x _____days/holiday season<br><br>=_____kWh/holiday season |
| _____kWh/holiday season x $0.15/kWh<br><br>= $_____/holiday season | _____kWh/holiday Season x $0.15/kWh<br><br>= $_____/holiday season |

| Mini Incandescent Holiday Lights (M5) | Mini LED Holiday Lights (M5) |
|---|---|
|  |  |
| Consumption per 100 bulbs: 45 watts (0.045 kW) | Consumption per 100 bulbs: 2 watts (0.002 kw) |
| 0.045kW x _____ strands = _____kW<br>_____kW x ___ hr/day = _____kWh/day<br>_____kWh/day x _____days/holiday season<br>= _____kWh/holiday season | 0.002kW x _____ strands = _____kW<br>_____kW x ___ hr/day = _____kWh/day<br>_____kWh/day x _____days/holiday season<br>= _____kWh/holiday season |
| _____kWh/holiday season x $0.15/kWh<br>= $_____/holiday season | _____kWh/holiday season x $0.15/kWh<br>= $_____/holiday season |

**DISCUSSION:**

1. Which type of holiday light has the highest electricity cost for the whole holiday season?

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2. Which type of holiday light has the lowest electricity cost for the holiday season?

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3. How much would you save in electricity costs per season if you changed the large incandescent holiday lights to large LED holiday lights?

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4. How much would you save in electricity costs each season if you changed the small incandescent holiday lights to small LED holiday lights?

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