

Activity 4

Calculate your household savings

Calculate Section 4

Aims

- To look at household energy use.
- To develop 3–5 energy saving ideas for your home.
- To explore the Origin Energy efficiency website and use the energy efficiency calculator.

Students need

- A hand-held calculator
- To visit www.originenergy.com.au/efficiency or use the Home Energy Project CD
- *Origin Energy efficiency tips*
- Energy journal

For the teacher

- Arrange computer access.

Action plan

Making your home more energy efficient and saving on energy bills starts with understanding what appliances are used in the home and the running costs of each.

1. Begin by becoming familiar with the Origin Energy efficiency website and energy efficiency calculator.

Steps to follow

- Click on each of the six areas outlined in the diagram.
- Each area has 'Did you know?' information as well as a list of appliances. Click on these and read the energy tips and facts.
- Find the energy rating icon and read how these labels can help you choose the most energy efficient appliances.
- Click on the energy efficiency calculator icon and work your way through the calculator. Become familiar with the appliances listed in the different areas.
- Look at the results and energy summary and see what information they contain. Which room has the highest energy consumption? How much CO₂ is produced each year and how many cars' usage is that the equivalent of?

Hints to use the energy efficiency calculator

- Be as accurate as possible for appliance usage and be sure to include all household members' use.
- When entering appliance usage information, make sure you check what rate each appliance is measured in, that is, hours/day, hours/week, no/week, etc. Be careful!
- When asked to print select either 'File' and 'Print' or, on the energy summary, click the print icon located at the top of the screen.

Current usage

2. Using the energy efficiency calculator, enter the use for different appliances in your home. When you have entered all the data, print a copy of 'My results' and the energy summary.

Remember to include the usage for all household members.

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3. On 'My results', observe the summary of your energy consumption by appliance and by room as shown on the pie charts. Answer the following questions.

- Which type of appliance has the highest percentage of energy consumption?

- Which appliances do you think have contributed to this usage?

- Which room has the highest energy consumption?

- Why do you think this is the case?

4. Using your results, complete the 'Current usage' row in Table 4.1.

Estimated usage

5. In your energy journal, list ways members of your household could reduce their energy use.

Hint: Looking at the pie charts, which appliances use the most energy?

6. From this list create 3–5 energy saving ideas that you think your household would be happy to do. Using this information complete Table 4.2.

7. Using the appliances listed in your 3–5 energy saving ideas, re-enter the usage data into the energy efficiency calculator. Remember to keep the other appliance use the same.

When completed print a copy of 'My results' and the energy summary.

8. Using your results complete the 'Estimated usage' row in Table 4.1.

Savings

9. Calculate the savings by subtracting 'Estimated usage' from 'Current usage' and complete the 'Savings' row.

10. In groups, discuss your findings. Did other people have similar results? Are there particular ideas that produced the most savings? Do you think the figures are realistic?

Table 4.1. Household energy savings

| | Energy costs per quarter (\$) | Energy costs per year (\$) | CO ₂ emissions per year (kg) |
|-----------------|-------------------------------|----------------------------|---|
| Current usage | | | |
| Estimated usage | | | |
| Savings | | | |

Table 4.2. Energy saving ideas

| | Room | Appliance | Saving idea |
|---|----------------------|-----------|---------------------------------------|
| | Example: The bedroom | Computer | Reduce use from 2 hrs to 1 hr per day |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

Assignment 4

Discuss energy saving ideas

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Aims

- To compare your current usage with your last household energy bill(s).
- To review your energy saving ideas with your energy team.
- To adjust your energy saving ideas as per comments from the energy team.

Students need

- Table 4.1 and 4.2 from Activity 4, *Calculate your household savings*
- Your last energy bill(s) as used in Assignment 2, *Looking at household energy bills*
- Energy journal
- A hand-held calculator

For the teacher

- Remind students that the energy saving ideas developed in this assignment will be entered into the energy efficiency calculator next lesson.

Action plan

1. Using your results from Table 4.1 in Activity 4, what were the energy costs per quarter (\$) for your current usage?

2. Looking at your last bill(s) (gas or electricity or combined*) as used in Assignment 2, what is the total energy costs in dollars?

* Use supply amount in dollars (this is the amount used by the household in dollars, minus the GST and service charges).

3. Are the costs for Steps 1 and 2 different? Suggest possible reasons for this.

(Make sure the amounts compared are for equivalent periods of time, that is, the gas bill may be for 2 months while the energy efficiency calculator is for 3 months. If this is the case you may need to multiply the gas bill amount by 1.5 to get the equivalent of 3 months.)

Energy saving ideas

4. Explain to members of your energy team what you completed in Activity 4.

Show them the printouts from the energy efficiency calculator of your current usage and your estimated usage.

Discuss the energy saving ideas developed in Table 4.2.

Explain each idea and how it will save energy. Discuss the connection between reducing energy usage and lowering greenhouse gases, helping the environment and saving money by showing them your results from Table 4.1.

Ask team members if they think they could make the savings and if there are changes they would suggest.

Assignment 4

Discuss energy saving ideas

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5. With the energy team, finalise the energy saving ideas (making any changes that are discussed) and write the new energy saving ideas in Table 4.3.

Makes notes as to how the decision process went. Did everyone agree? Were there ideas that were not included in the list? Did the energy team think the ideas were achievable?

Table 4.3. Energy team approved energy saving ideas (3–5 ideas)

| | Room | Appliance | Saving idea |
|---|------|-----------|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |