1 The energy transfer diagrams show some energy changes during Joe’s morning. Draw lines to match each diagram to what Joe did. Complete the diagrams using the words below.

**What Joe did**

- turned the bedside lamp on
- came downstairs
- ate his breakfast
- wound up his toy kangaroo
- went upstairs
- put in new batteries to make his radio work

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Chemical energy in food</th>
<th>Energy</th>
<th>Gravitational energy in Joe at top of stairs</th>
<th>Kinetic energy in Joe at top of stairs</th>
<th>Chemical energy in batteries of a radio</th>
<th>Lamp</th>
<th>Light energy</th>
</tr>
</thead>
</table>

2 Complete these sentences by crossing out the wrong words.

Energy is stored in food, and in fuels, as **chemical/electrical** energy. We measure the amount of energy in food in units called **kilograms/kilojoules**.

All the energy stored in food originally came from the **Sun/Moon**. **Plants/animals** make their own food using light from the Sun. Animals eat **metals/plants**, or other animals that have eaten plants. If we eat too much **water/food** and don’t **exercise/sleep** enough, we will get fat.
Energy resources (continued)

3 What name do we give to a substance that we burn to release its energy? Circle the correct letter.

A energy
B fuel
C fossil
D wave

4 Draw lines to match each energy resource to its correct definition.

<table>
<thead>
<tr>
<th>Energy resource</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>solar energy</td>
<td>The up-and-down movement of the sea can be used to make electricity.</td>
</tr>
<tr>
<td>wind energy</td>
<td>Energy is used direct from the Sun.</td>
</tr>
<tr>
<td>biomass</td>
<td>Plant and animal material contains stored energy.</td>
</tr>
<tr>
<td>wave energy</td>
<td>Energy from the downward movement of water is used to make electricity.</td>
</tr>
<tr>
<td>hydroelectric (falling water)</td>
<td>Energy is stored in the remains of animals or plants that have been preserved for millions of years.</td>
</tr>
<tr>
<td>fossil fuel</td>
<td>Energy is used to make windmills turn to make electricity.</td>
</tr>
</tbody>
</table>

5 a Underline the non-renewable energy resources in the list below.

natural gas
solar energy
wind energy
coal
wave energy
oil
biomass
hydroelectric (energy from falling water)

b Write true or false for this statement.

Renewable energy resources get smaller when we use them and can’t be replaced. ............................
6 a This diagram shows the flow of energy up a food chain. Write numbers in the boxes to put them in the correct order.

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[Diagram: chick, sun, corn, fox]
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b This diagram shows the flow of energy when sugar cane is grown and fermented to make ethanol. Ethanol is used as fuel in cars in Brazil. Write numbers in the boxes to put them in the correct order.

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[Diagram: sugar cane, fermenter, sun, car]
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