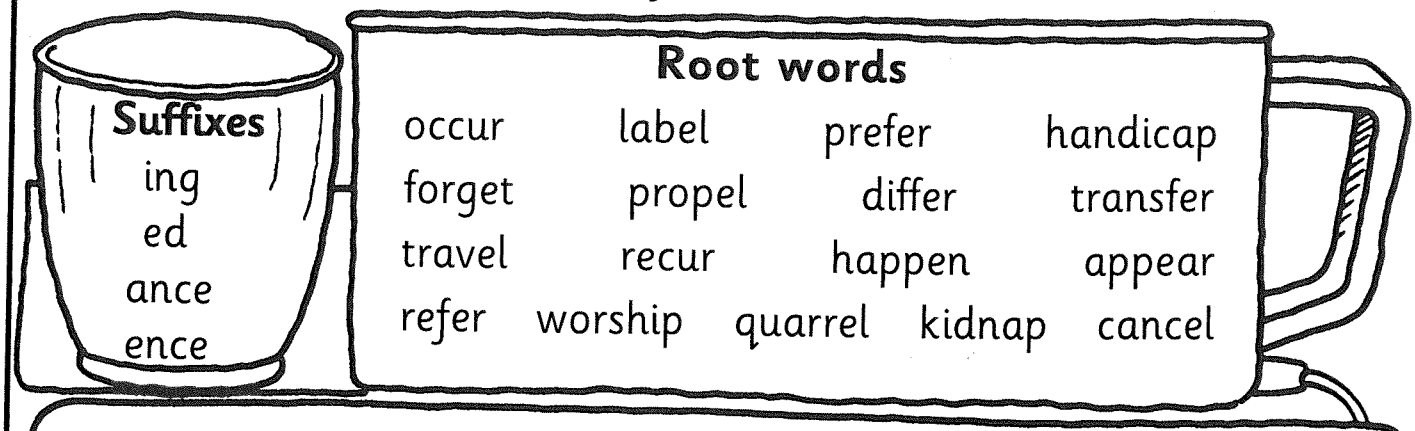
Investigate

Doubling up?

Investigate

- Take a root word from the word mixer. Add a suffix.
- Write the new word. Check it in a dictionary.
- How many new words can you make?

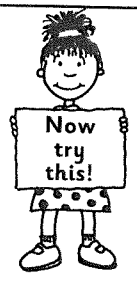


New words

occurring

LSCWCh

- Circle the new words which have doubled the final consonant of the root word.
- Write a rule about this.



- Write five one-syllable words. Add a suffix to them. Which words double their final consonants?
- Write five polysyllabic words. Add a suffix to them. Write a rule about this.

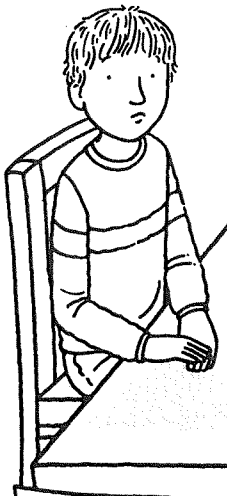
Teachers' note Revise the rules that single-syllable words ending in a consonant and preceded by a vowel double their final consonant. The words in this activity are polysyllabic, and doubling depends on where the words are stressed.

Developing Literacy
Word Level Year 6

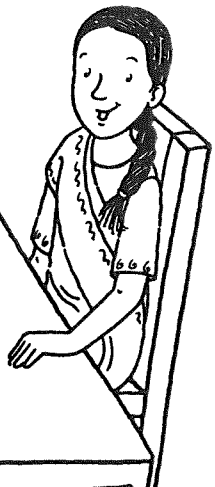
Division challenge

If you follow these rules you can make 16 different divisions.

- **Try to find all 16!**

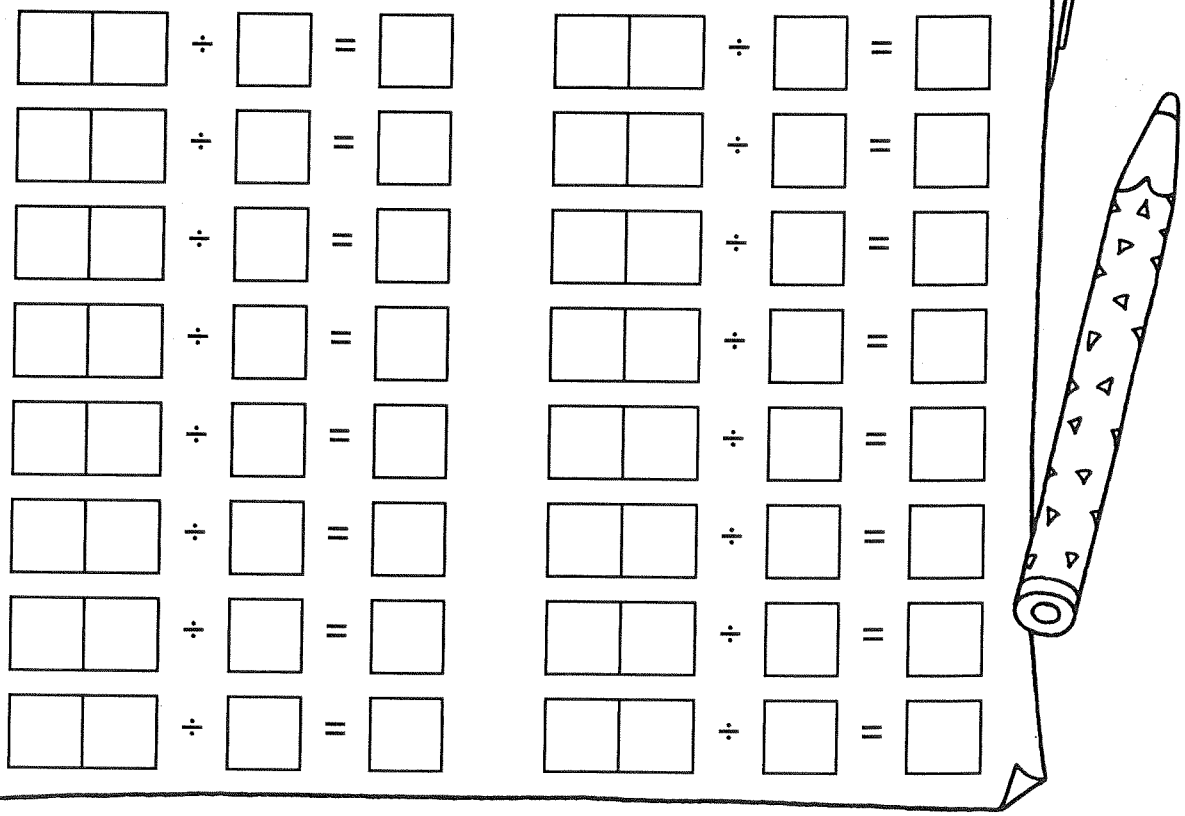


Work in a systematic way.

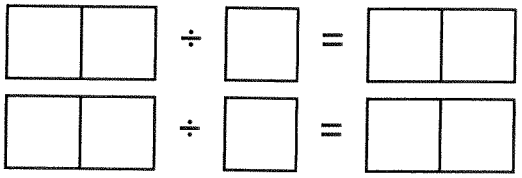


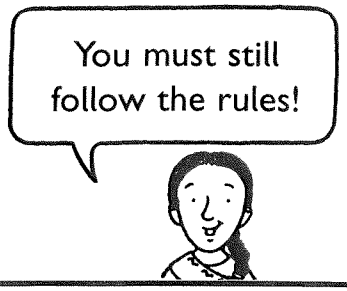
Use the digits **1** to **9** to make the divisions.
You may use a digit only **once** in each division.
You may use the same set of digits only once,
so you may include only one of these:

12 ÷ 4 = 3 or 12 ÷ 3 = 4



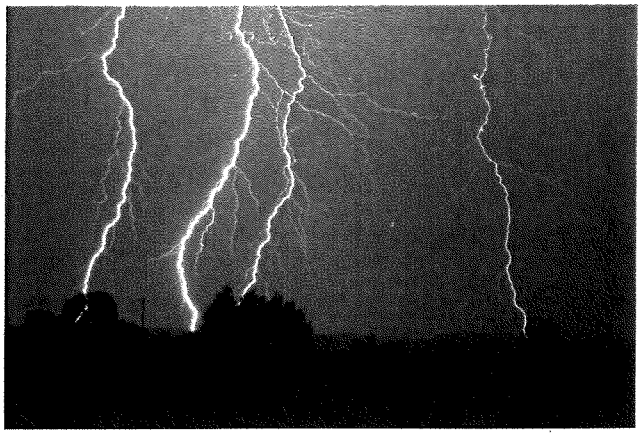
- **Make two different divisions.**





Teachers' note The children could work in pairs. They should experiment with number cards and work systematically, for example, looking for divisions dividing by 9, then by 8, etc. If the digit zero is allowed, then four more divisions are possible. In the extension activity, point out that the divisions should have a two-digit answer, for example 72 ÷ 4 = 18.

Developing Numeracy
Calculations Year 6



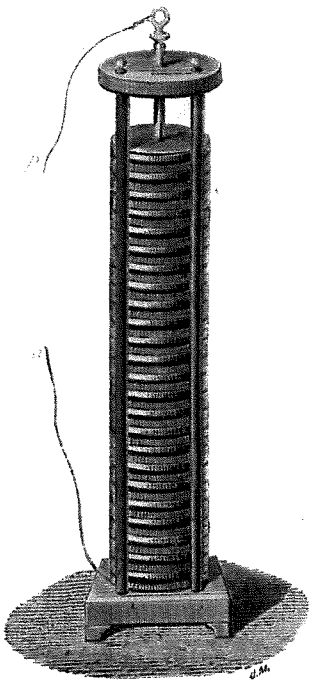
Lightning is caused by huge charges in the clouds

To make electricity useful, we need to make lots of it and make it move in a controlled way so it can carry its energy around to make things work.

Go further

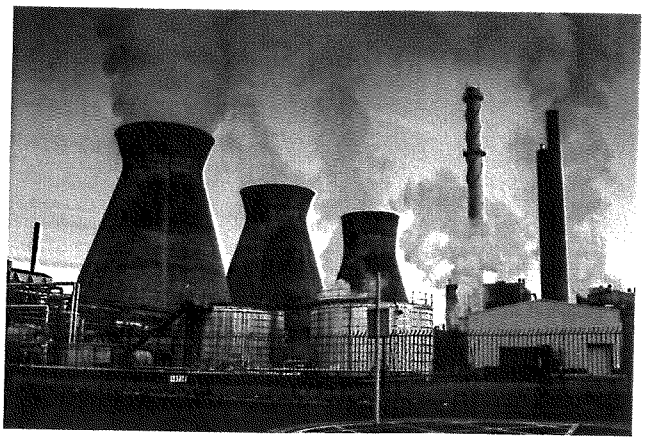
In 1792, an Italian scientist, Alessandro Volta, invented the first battery. It was a big pile of metal plates with wet sheets of card in between. He discovered that he could make the tiny charged particles from his battery flow along wires instead of making sparks.

Another important discovery was the electric light bulb. Two people, a British scientist called Joseph Swan and an American called Thomas Edison, both invented light bulbs at about the same time. No one really knows who had the idea first and the two men set up a company together to make their light bulbs. Some of these light bulbs were attached to Volta's batteries. A few years earlier another British scientist, Michael Faraday, had discovered how to make electricity using a magnet and a moving electrical conductor, which was a copper disc. The flow of electricity around a circuit made by this apparatus was quite small. However, when the copper disc was replaced by a coil of wire, bigger flows of electricity could be produced and the first useful electrical generator was made. This made it possible to make lots of electricity. Edison improved Faraday's design and, in 1882, a street in New York became the first street to be lit with electricity.



The first battery was a pile of metal discs with wet card between them

Electricity is now made in huge power stations, but it is still made in a similar way. In most power stations, steam is used to make the generator work. Steam is usually made by burning coal or gas. These are called fossil fuels, and they release carbon dioxide and other harmful gases into the air as they burn and are non-renewable. Carbon dioxide is a greenhouse gas and scientists believe that rising levels of this gas in the atmosphere are causing global warming (see Chapter 5). If we can reduce the amount of electricity we use we can help to reduce our contribution to global warming as well as saving money.



Electricity is made in power stations, usually by burning fossil fuels

Exercise 8.1a

1 What must happen to make electricity useful?

2 What was the name of the Italian scientist who made the first battery?

3 Describe the battery made by the scientist you have named.

4 Who invented the electric light bulb?

5 Who discovered how to make electricity using a magnet and a moving electrical conductor?

6 Where was the first street to be lit by electric lights?

7 What is the name given to the non-renewable fuels that are used in most power stations?

8 Why are these fuels harmful to the planet?

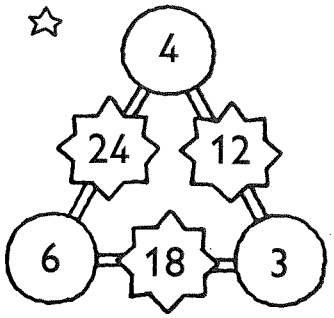
9 List three things that you have used today that need electricity to make them work.

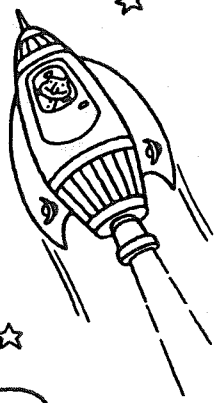
10 Suggest two things you could do to reduce the amount of electricity you use.

Extra-terrestrial triangles

The number on a star is the product of the numbers either side of it.

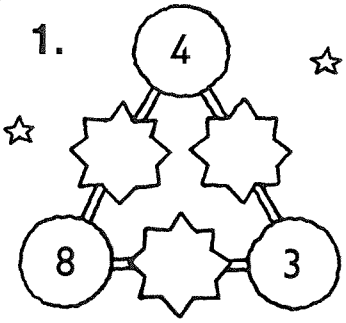
Example: 5 — 40 — 8





- **Write the missing numbers.**

1.



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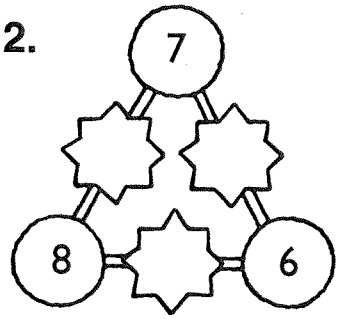

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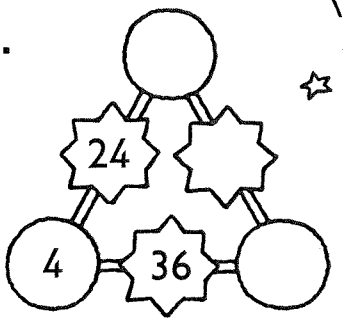
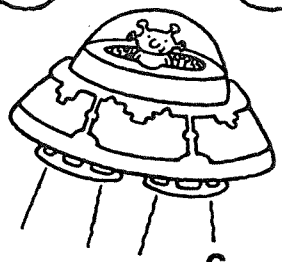
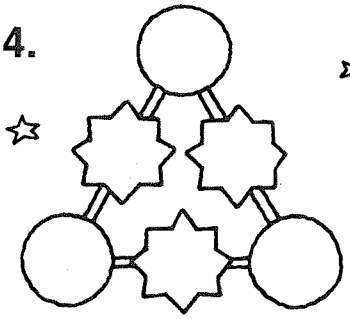




- **Make up your own triangles.**

4.



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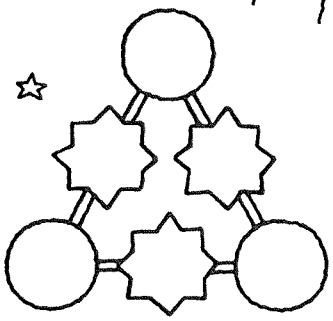

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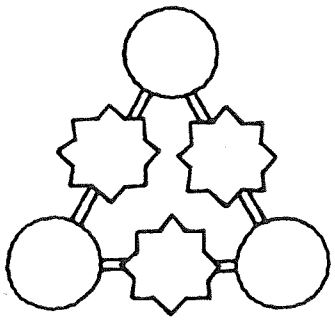
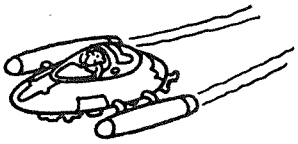


- **Find the missing numbers.**



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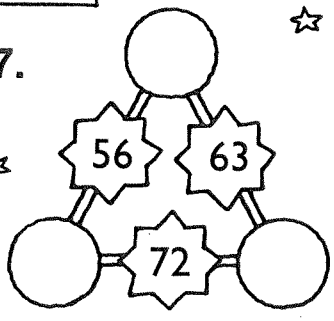

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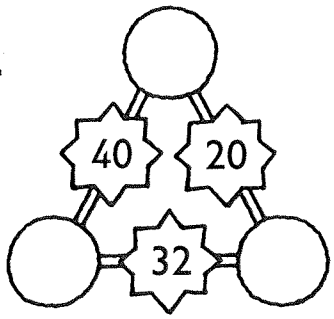

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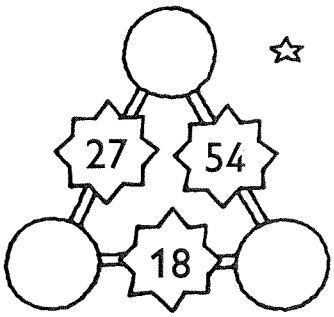
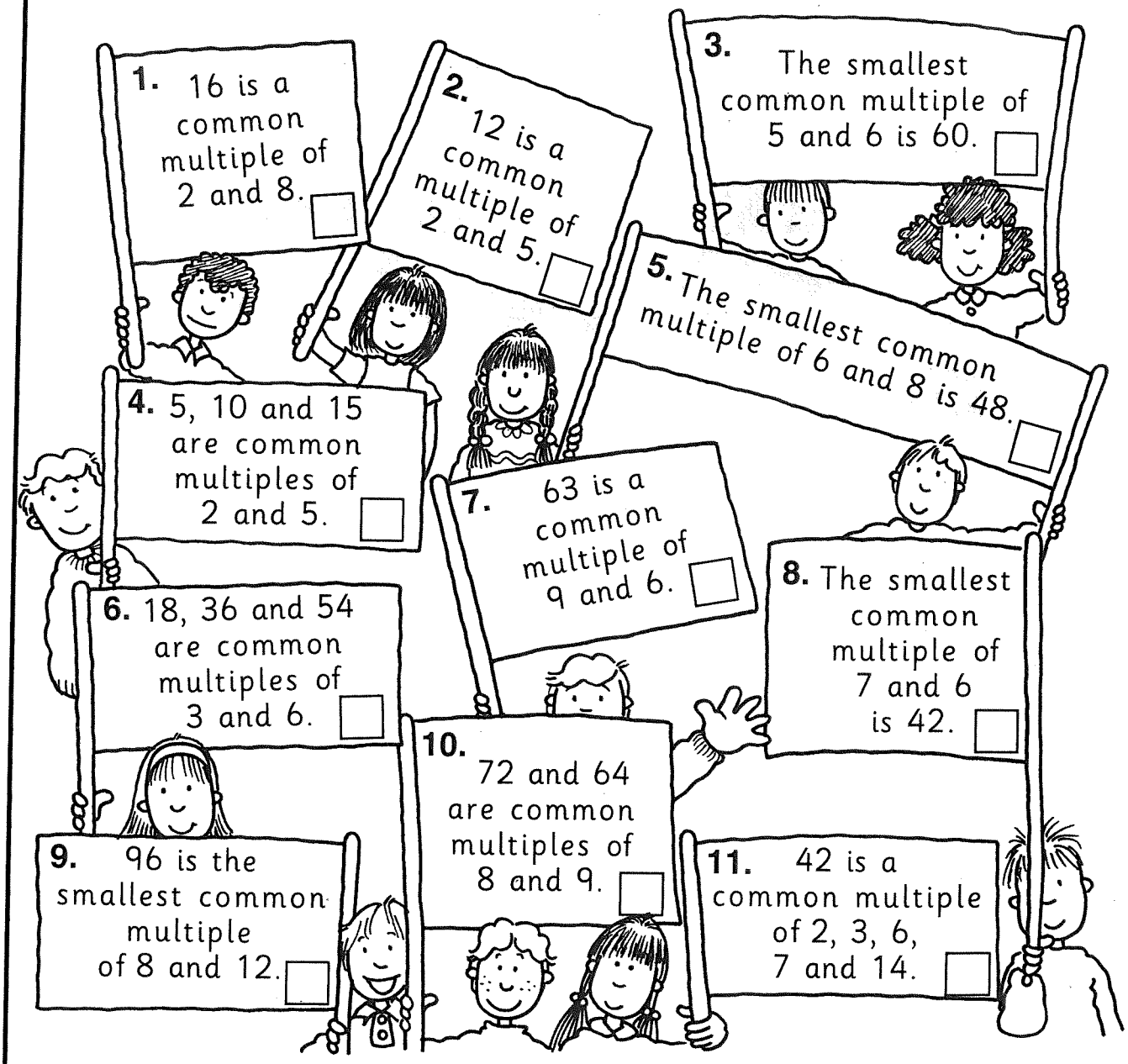


Teachers' note The top row of triangles can be solved by deduction using the clues given. For the extension activity, suggest to the children that they try a number in a circle which they know to be a factor of the two star numbers either side, and see whether this leads to a solution.

Developing Numeracy
Calculations Year 6

True or false banners

- **Which banners are true ✔ and which are false ✘?**



- **What is the smallest common multiple of** 7 and 12 **?** ☐
- **What is the smallest common multiple of** 8 and 14 **?** ☐
- **What is the smallest common multiple of** 9 and 18 **?** ☐

Teachers' note To test the banner statements, encourage the children to write out all the multiples of each number first.