

Maths 4U

Sixth Grade

Pages 12 - 13

Start

Working out the Take the challenge section.

Write the following numbers on the board, and then ask ss to find then number they can get when multiplying them by themselves.

Write the answers on the board and explain to ss that the operation they just did is called square root.

Ask ss to help you create a definition for it.

8 = 64
4 = 16
5 = 25
9 = 81
7 = 49

Ex
“The **square root** of a number, x, is the number you get when multiplying x by itself.”

Let ss do the matching using colours.

Ask ss to look at the numbers on the right, and then explain to them that those expressions are called squared numbers.

The process to work them out is just the same as the one before, the difference is that it is expressed differently.

Ask ss to help you do the math – write the answers on the board and let ss copy the answers.

“Point out the fact that these expressions / operations are inverse.”

During

Ask ss to look at the balls and count them – tell ss to write the total numbers next to the balls.

Explain to ss that the expressions below look different, but they can be completed the same way.

T reads out the first set.

- **One times one, equals 1.**
- **1 squared is 1.**
- **1² is 1.**

Invite some ss to read the operations – tell ss to listen and follow in their books and to complete the operations.

Tell ss that it is time for them to try some operations, which are a little bit more complicated. Remind them that the process is the same, they will just have to work with bigger numbers.

Tell ss to do the math mentally or on a recycled or blank sheet of paper, and every time they give you an answer, prove it right by using a calculator app - projected.

Draw ss' attention to the operations on page 13. Ask ss to tell you what they have to do to work them out.

Try the first one on the board, and then invite some ss to do the others on the board too.

$$5^2 + 2^2 = 29$$
$$25 + 4 = 29$$

Explain to ss that the operations the just did were quite easy because the number at the top (power) was 2 and the only thing they had to do was multiplying a number by

itself once, (make the question) but what happens when the number at the top (power) is bigger – like 3, 4, 5, etc.?

Tell ss to look at the expression below. Ask them to tell you how many times the number 2 appears in the operation – 4 times. Now tell them that it means 2⁴ – 2 to the power of 4.

Write the following example on the board.

To the power of...

- **2⁴ = 16**

Extended form

- **2x2x2x2= 16**

Tell ss to read the expressions below – ask them to try finding the answers mentally – but if / when it gets difficult, let them use a calculator (They can do it, just teach / show them how to be patient).

End

It is time for you to decide on the notes for ss to write.

The analysis table below can help ss get information in detail and in such an easy way that further notes may not be necessary, but if you think there is something else / important to take notes about, go ahead and get ss helping you create the notes.