Grade 6 IC Maths

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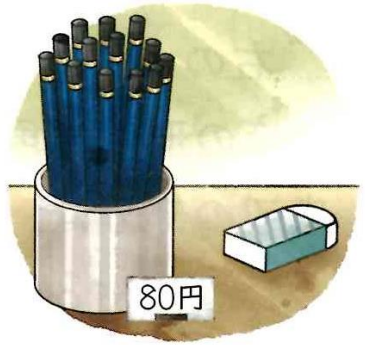
Aim



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Let's find the relationship the of variables x plus an eraser for the total cost = variable y

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Sum : 1 pencil price x number of pencils + an eraser

$$80 \times x + 70$$

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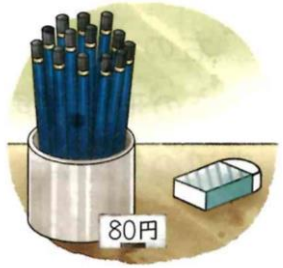

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Now let's look at the sum including all the variables of x and y.

We know that x is the number of pencils to buy, so the variable y = the total cost.

$$80 \times x + 70 = y$$

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Now let's write the sum for the values (number of pencils to buy) 5, 6, 7, 8 ……

Sum = 80 x [Number of pencils] **+ 70**

x pencils	5	6	7	8	……
y yen					……

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Sum = 80 x [Number of pencils] + 70

When x = 5 80 x 5 + 70 = 470

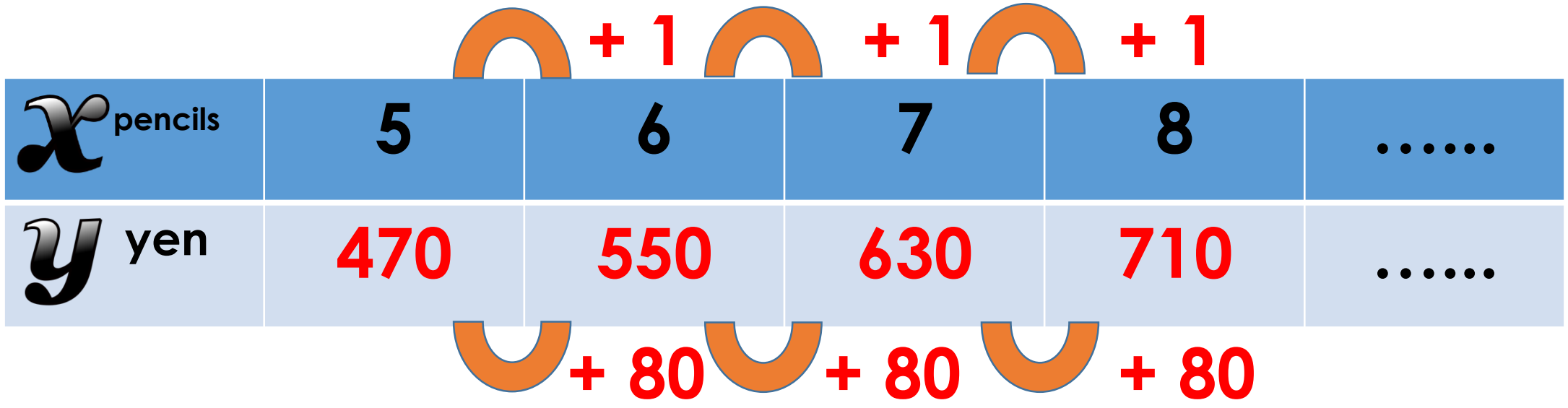
When x = 6 80 x 6 + 70 = 550

When x = 7 80 x 7 + 70 = 630

When x = 8 80 x 8 + 70 = 710

x pencils	5	6	7	8	.....
y yen	470	550	630	710	.....

工 You have 1000 yen, you will buy 1 eraser for 70 yen. How many pencils can you buy at 80 yen per pencil?



We can see that the x values increase by 1 and the y values increase by 80.

I You have 1000 yen, you buy 1 eraser for 70 yen. How many pencils can you buy at 80 yen per pencil?

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x pencils	5	6	7	8	9	10	11	12
y cost	470	550	630	710	790	870	950	1030

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We can see that the x value 11 (80 x 11 + 70 = 950) and the x value 12 (80 x 12 + 70 = 1030) cost more than our 1000 yen. So the correct answer is 11 pencils.

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We have the values of 200g canned juice and 400g canned juice.

① Write the sum to find the relationship between the variable and total grams.

$$200 \times x + 400 = y$$

② Now find the x values of 5, 6, 7 ……. In relation to the maximum gram weight of y value of 2000.

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② Now find the x values of 5, 6, 7 ..... In relation to the maximum gram weight of y value of 2000.

200 x 5 + 400 = 1400

200 x 7 + 400 = 1800

200 x 6 + 400 = 1600

200 x 8 + 400 = 2000

x value	5	6	7	8	.....
y value	1400	1600	1800	2000	.....

$x = 8$

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The picture of the right shows a yacht that has a sail height of 8cm. Use the triangle shape to calculate the area of the sail for the x (base) value of 13cm, 13.5cm, 14cm and 14.5 cm.

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Let's find the relationship the of variables x and y.

ア We have learnt that the area of a triangle is:

Base x height ÷ 2 =

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Base x height ÷ 2 = □

□ x 8 ÷ 2 = □

イ If the area size is 58cm2, how many cm would the base be?

x = 13　　13 x 8 ÷ 2 = 52

x (cm)	13	13.5	14	14.5
y (cm2)	52	54	56	58

Answer　base value = 14.5

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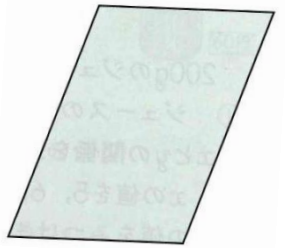

The parallelogram has a height of 8 cm.

① write a sum to calculate the width x height using the variables of x and y.

$$x \times 8 = y$$

② Find the values of 5.5. 6, 6.5 in correspondence to y value.

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② Find the values of 5.5. 6, 6.5 in correspondence to value.

When x = 5.5 5.5 x 8 = 44 y = 44
When x = 6 6 x 8 = 48 y = 48
When x = 6.5 6.5 x 8 = 52 y = 52

x	5.5	6	6.5
y	44	48	52

$y = 52$

Summary

We learnt that we can use the values of x and a given measure, number or price to find the relationship between x and y.

In this lesson we wanted to find cost, weight and area corresponding to the values of x and y .

Let's challenge page 257.