RECALL

$3 \overline{)3744}$

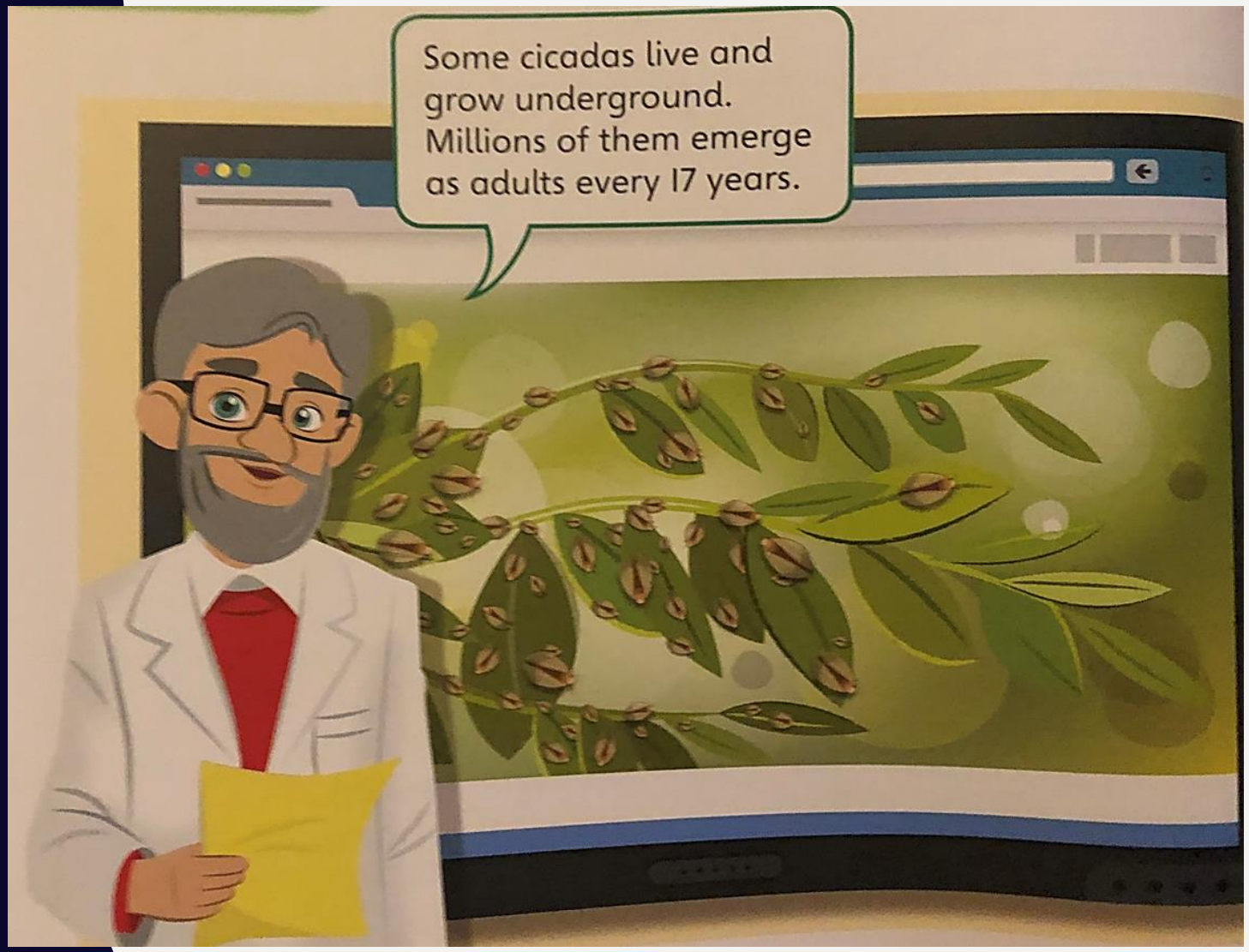
$9 \overline{)3744}$

$12 \overline{)4380}$

L.O. DIVIDE NUMBERS UP TO 4 DIGITS BY A 2-DIGIT NUMBER USING THE FORMAL WRITTEN METHOD OF SHORT/LONG DIVISION, INTERPRETING REMAINDERS ACCORDING TO THE CONTEXT.

- SOME WILL EVEN: Use written method to solve problems.
- SOME WILL: Find quicker ways to calculate.
- MOST WILL: Use short/long division.
- ALL WILL: Use known multiplication facts to aid calculation.

MY TURN



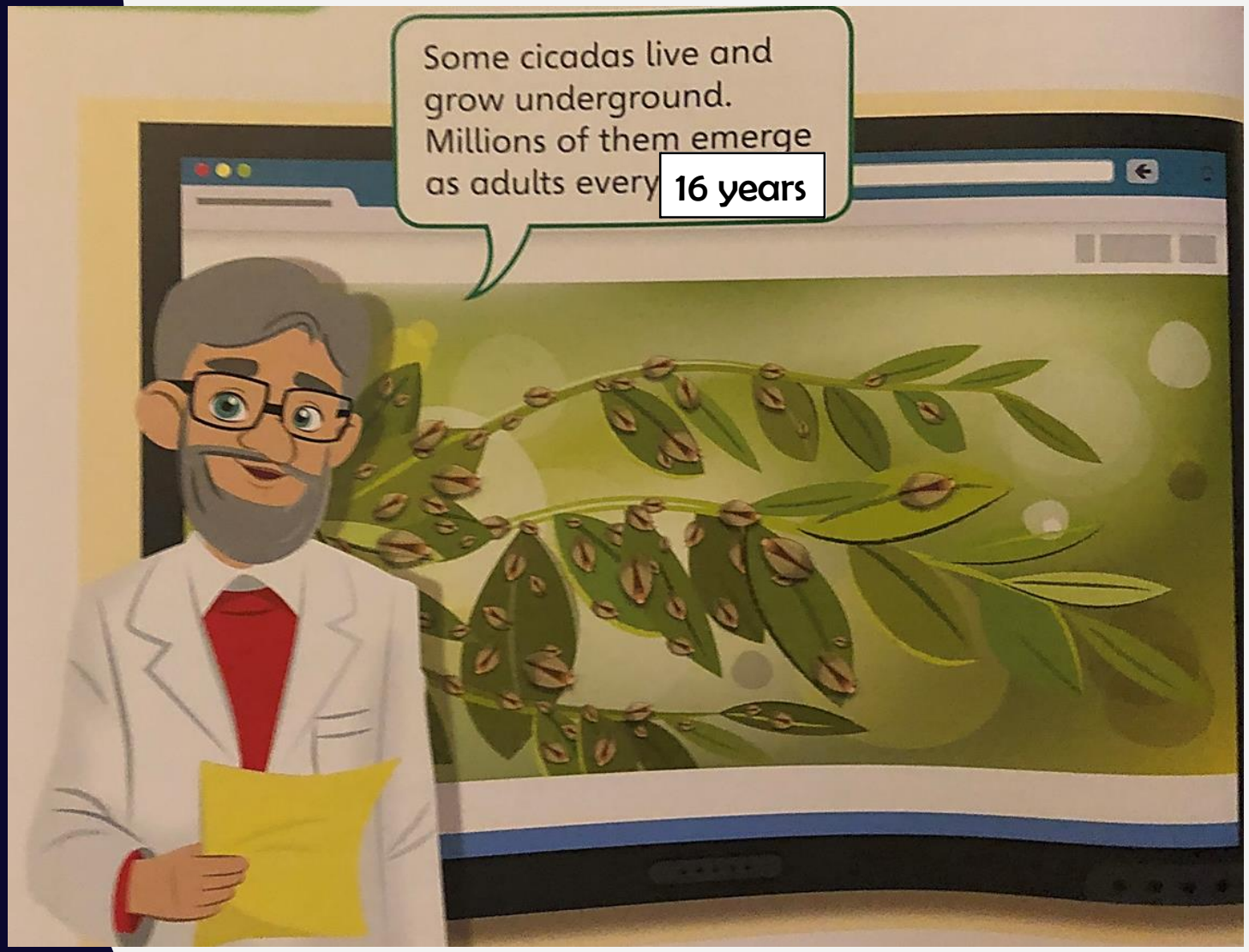
1 a) A scientist finds that cicadas have emerged this year.
How many times will they emerge again over the next 100 years?
How long until they next emerge?

b) How many times will they emerge over the next 200 years?
How long until they emerge?

help

Use long division to help you. Write out your multiples...

YOUR TURN



1 a) A scientist finds that cicadas have emerged this year.
How many times will they emerge again over the next 100 years?
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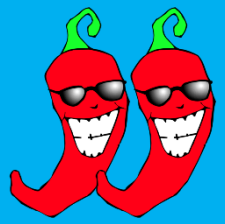
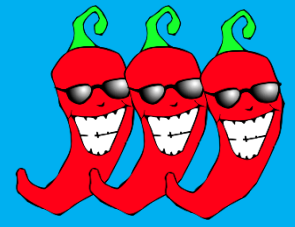
Use long division to help you. Write out your multiples...

Intelligent Practise

$11 \overline{)3762}$



$12 \overline{)3762}$



$16 \overline{)3762}$

$22 \overline{)3762}$

$13 \overline{)3762}$

$32 \overline{)3762}$

$33 \overline{)3762}$

$14 \overline{)3762}$

$64 \overline{)3762}$

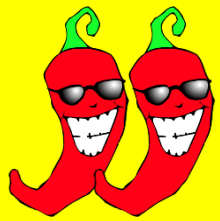
$128 \overline{)3762}$

Can you spot any patterns?

Intelligent Practise

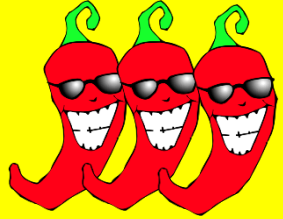
342

11 | 3762



313r6

12 | 3762



235r2

16 | 3762

171

22 | 3762

289r5

13 | 3762

117r18

32 | 3762

114

33 | 3762

268r10

14 | 3762

58r50

64 | 3762

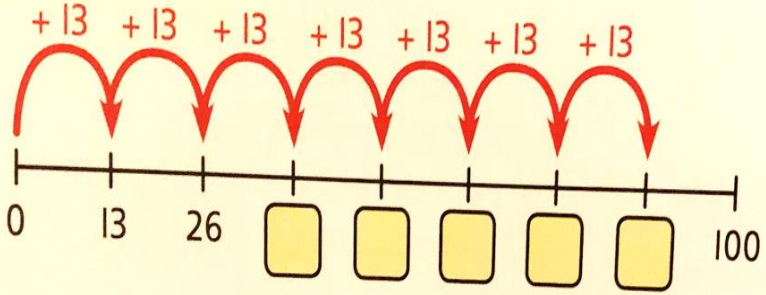
29r50

128 | 3762

Can you spot any patterns?

DIVE DEEPER 1

1 There is a butterfly in North America that emerges every 13 ye
How many times will the butterfly appear in 100 years?



remainder ☐

13 | 1 0 0

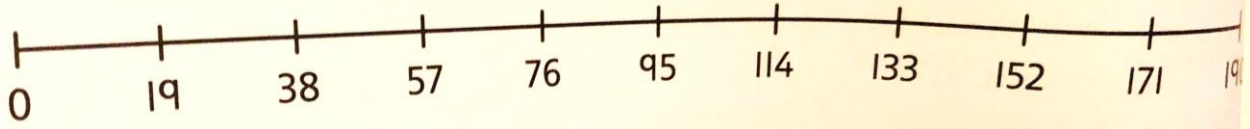
\- ☐

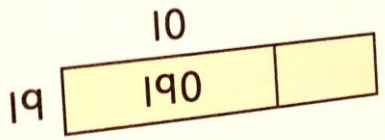
100 ÷ 13 = ☐ remainder ☐

The butterfly will appear ☐ times in 100 years.

There will then be ☐ years left until 100 years have passed.

2 There is a lighthouse jellyfish that has lived to 306 years old. A hurricane occurs every 19 years in the ocean where it lives. How many hurricanes has this jellyfish experienced?





remainder ☐

19 | 3 0 6

\- 1 9 0

Next Step

The workings are correct. **Give the answers.**

3920 ÷ 16 ☐

16 × 1 = 16
16 × 2 = 32
16 × 3 = 48
16 × 4 = 64
16 × 5 = 80

16 | 3920
32
72
64
80
80
0

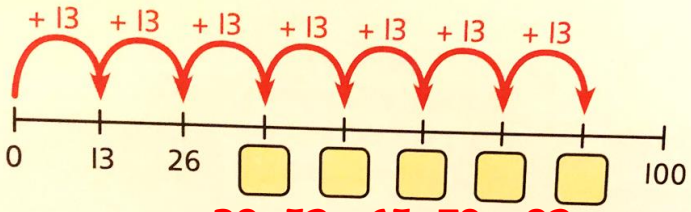
828 ÷ 24 ☐

24 × 1 = 24
24 × 2 = 48
24 × 3 = 72
24 × 4 = 96
24 × 5 = 120

24 | 828.0
72
108
96
12.0
12.0
0

DIVE DEEPER 1

1 There is a butterfly in North America that emerges every 13 years. How many times will the butterfly appear in 100 years?



remainder

13 | 1 0 0

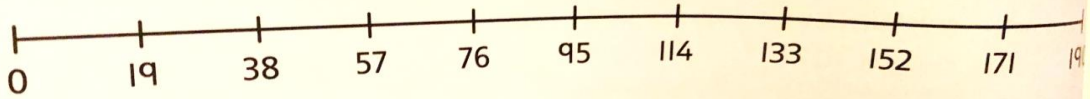
−

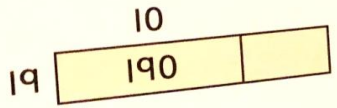
100 ÷ 13 = 7 remainder 8

The butterfly will appear 7 times in 100 years.

There will then be 8 years left until 100 years have passed.

2 There is a lighthouse jellyfish that has lived to 306 years old. A hurricane occurs every 19 years in the ocean where it lives. How many hurricanes has this jellyfish experienced?





remainder

19 | 3 0 6

− 1 9 0

16r2

Next Step

The workings are correct. **Give the answers.**

3920 ÷ 16 = **245**

16 × 1 = 16
16 × 2 = 32
16 × 3 = 48
16 × 4 = 64
16 × 5 = 80

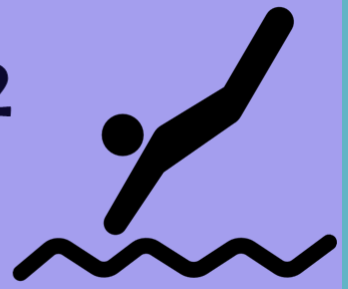
16 | 3920
32
72
64
80
80
0

828 ÷ 24 = **34.5**

24 × 1 = 24
24 × 2 = 48
24 × 3 = 72
24 × 4 = 96
24 × 5 = 120

24 | 828.0
72
108
96
12.0
12.0
0

DIVE DEEPER 2



4 Discuss what the remainder tells you in each of these problems.

- A carpenter takes 25 days to make one chair. How many chairs can she make in a year?
- A builder needs 365 planks to build a roof. The planks come in packs of 25. How many packs should he buy?
- A bricklayer lays 365 bricks in 10 hours. How many bricks does he lay per hour?

5

1,890 ÷ 45 = ☐

1,311 ÷ 23 = ☐

☐ = 2,346 ÷ 23

7,379 ÷ 47 = ☐

4,000 ÷ 80 = ☐

☐ = 2,525 ÷ 25

I am going to use long division for each one.

I do not think that is always the most efficient method. I think you can solve some of these much more quickly.

DIVE DEEPER 2

4 Discuss what the remainder tells you in each of these problems.

- A carpenter takes 25 days to make one chair. How many chairs can she make in a year?
- A builder needs 365 planks to build a roof. The planks come in packs of 25. How many packs should he buy?
- A bricklayer lays 365 bricks in 10 hours. How many bricks does he lay per hour?

-unfinished chairs
-another pack that needs to be bought
- part bricks

1,890 ÷ 45 = 42

1,311 ÷ 23 = 57

102 = 2,346 ÷ 23

7,379 ÷ 47 = 157

4,000 ÷ 80 = 50

101 = 2,525 ÷ 25

5

I am going to use long division for each one.

I do not think that is always the most efficient method. I think you can solve some of these much more quickly.

Explain the Mistakes

$1532 \div 16$

Mistake A:

$$
\begin{array}{r|l}
16 & 1532 \\
 & 1440 \quad 16 \times 90 \\
\hline
 & 92 \\
 & 96 \quad 16 \times 6 \\
\hline
 & 4
\end{array}
$$

Answer: $96\frac{4}{16}$

Mistake B:

$$
\begin{array}{r|l}
16 & 1532 \\
 & 1440 \quad 16 \times 90 \\
\hline
 & 112 \\
 & 112 \quad 16 \times 7 \\
\hline
 & 0
\end{array}
$$

Answer: 97

Mistake C:

$$
\begin{array}{r|l}
16 & 1532 \\
 & 1440 \quad 16 \times 90 \\
\hline
 & 92 \\
 & 80 \quad 16 \times 5 \\
\hline
 & 12
\end{array}
$$

Answer: 107

Rank by Difficulty

$504 \div 24 =$

$504 \div 18 =$

$1818 \div 18 =$

$1200 \div 24 =$