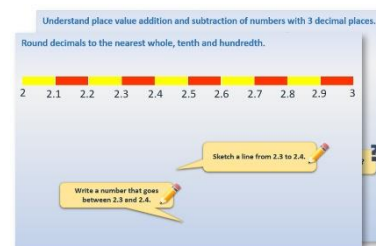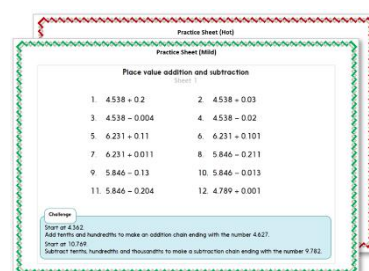# Week 12, Day 2
Sequences

Each day covers one maths topic. It should take you about 1 hour or just a little more.
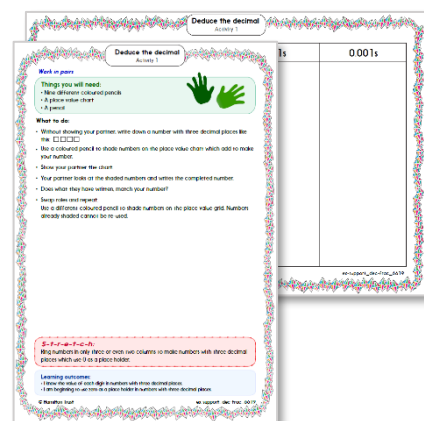
1. Start by reading through the **Learning Reminders**.
    They come from our *PowerPoint* slides.

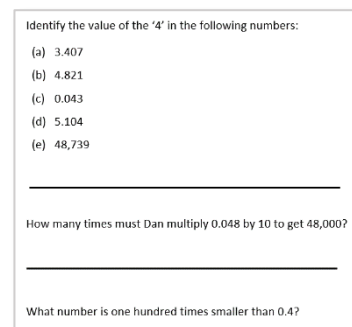2. Tackle the questions on the **Practice Sheet**.
    There might be a choice of either Mild (easier) or
    Hot (harder)!
    Check the answers.

3. Finding it tricky? That's OK… have a go with a
    grown-up at **A Bit Stuck?**

4. Have I mastered the topic? A few questions to
    Check your understanding.
    Fold the page to hide the answers!

Learning Reminders

Describe the rule for a sequence.

28, 24, 20

Try to describe the rule for this sequence.

Write it down as well as the next three numbers in the sequence.

The rule is **subtract 4** each time.

Sequences can decrease as well as increase.

28, 24, 20, 16, 12, 8

Learning Reminders

Describe the rule for a sequence.

2, 6, 10

Now look at this sequence. Can you describe the rule?

Write it down as well as the next three numbers in the sequence.

The rule is **add 4** each time.

2, 6, 10, 14, 18, 22

Learning Reminders

Describe the rule for a sequence.

2, 4, 8

Now look at this sequence. Can you describe the rule?

Write it down as well as the next three numbers in the sequence.

The rule is **double** each time.

2, 4, 8, 16, 32, 64

What's the pattern?

Write the next three numbers as well as the rule for each sequence.

1. 2, 6, 10, ☐ , ☐ , ☐ .

    Rule: _____

2. 12, 22, 32, ☐ , ☐ , ☐ .

    Rule: _____

3. 48, 40, 32, ☐ , ☐ , ☐ .

    Rule: _____

4. 90, 80, 70, ☐ , ☐ , ☐ .

    Rule: _____

5. 22, 30, 38, ☐ , ☐ , ☐ .

    Rule: _____

6. 45, 40, 35, ☐ , ☐ , ☐ .

    Rule: _____

Challenge

Make up a new sequence of 6 numbers that counts in equal steps. Show your partner the first 3 in the sequence. Can they work out what the next 3 are?

Practice Sheet Hot
What's the pattern?

Write the next three numbers as well as the rule for each sequence.

1. 2, 6, 10, [ ] , [ ] , [ ] . Rule:_____

2. 6, 12, 18, [ ] , [ ] , [ ] . Rule:_____

3. 12, 22, 32, [ ] , [ ] , [ ] . Rule:_____

4. 48, 40, 32, [ ] , [ ] , [ ] . Rule:_____

5. 90, 80, 70, [ ] , [ ] , [ ] . Rule:_____

6. 22, 31, 40, [ ] , [ ] , [ ] . Rule:_____

7. 98, 86, 74, [ ] , [ ] , [ ] . Rule:_____

8. 5, 10, 20, [ ] , [ ] , [ ] . Rule:_____

Challenge

Make up three new sequences of 6 numbers. Show your partner the first 3 in the sequence. Can they work out what the next 3 are?

Practice Sheets Answers

What's the pattern? (mild)

1.   2, 6, 10, 14, 18, 22   Rule: Add 4
2.   12, 22, 32, 42, 52, 62   Rule: Add 10
3.   48, 40, 32, 24, 16, 8   Rule: Subtract 8
4.   90, 80, 70, 60, 50, 40   Rule: Subtract 10
5.   22, 30, 38, 46, 54, 62   Rule: Add 8
6.   45, 40, 35 30, 25, 20   Rule: Subtract 5

Challenge

e.g.   6, 11, 16, 21, 26, 31   Rule: Add 5
or
            56, 50, 44, 38, 32, 26   Rule: Subtract 6

What's the pattern? (hot)

1.   2, 6, 10, 14, 18, 22   Rule: Add 4
2.   6, 12, 18, 24, 30, 36   Rule: Add 6
3.   12, 22, 32, 42, 52, 62   Rule: Add 10
4.   48, 40, 32, 24, 16, 8   Rule: Subtract 8
5.   90, 80, 70, 60, 50, 40   Rule: Subtract 10
6.   22, 31, 40, 49, 58, 67   Rule: Add 9
7.   98, 86, 74, 62, 50, 38   Rule: Subtract 12
8.   5, 10, 20, 40, 80, 160   Rule: Double

Challenge

e.g.   31, 26, 21, 16, 11, 6   Rule: Subtract 5

            55, 62, 69, 76, 83, 90   Rule: Add 7

            64, 32, 16, 8, 4, 2   Rule: Halve

Work in pairs

Things you will need:
• A pencil

What to do:

The rules for these sequences are:

- add 3 each time
- subtract 2 each time
- add 10 each time
- subtract 5 each time.

a)   Can you be a SEQUENCE SLEUTH to work out which is which?!

b)   Now write the next 5 numbers in each sequence...

4	14	24	34	44					

50	48	46	44	42					

15	18	21	24	27					

57	52	47	42	37	32				

S-t-r-e-t-c-h:

1. Choose one of the rules. Write your own sequence using that rule but starting at a different number.

2. Now you're a SEQUENCING SUPERSTAR, can you create your own, brand-new sequence for a partner to try to describe and continue...?

Check your understanding
Questions

Write the next four numbers in each of these sequences:

- 4, 8, 12, …

- 13, 63, 113, …

- 8, 16, 24, …

- 100, 96, 92, …

- 341, 441, 541, …

- 601, 551, 501, …

Create a sequence of ten numbers where you count on in 8s from an **odd** number.

Harry says, 'If I count in 4s, starting at 3, I won't say 30, but I will say 303.' Do you agree? Explain your ideas.

Answers on the next page

Check your understanding
Answers

Write the next four numbers in these sequences:

- 4, 8, 12 … 16, 20, 24, 28. (increasing in 4s)

- 13, 63, 113 … 163, 213, 263, 313. (increasing in 50s)

- 8, 16, 24… 32, 40, 48, 56. (increasing in 8s)

- 100, 96, 92… 88, 84, 80, 76. (decreasing in 4s)

- 341, 441, 541… 641, 741, 841, 941. (increasing in 100s)

- 601, 551, 501… 451, 401, 351, 301. (decreasing in 50s)

Create a sequence of ten numbers where you count on in 8s from an odd number.

e.g. 7, 15, 23, 31, 39, 47, 55, 63, 71, 79.

Harry says, 'If I count in 4s, starting at 3, I won't say 30, but I will say 303.' Do you agree? Explain your ideas.

Harry is correct. Counting on in 4s: 3, 7, 11, 15, 19, 23, 27, 31… so he doesn't say 30. Since 100 is a multiple of 4 he will say 103, 203, 303… Children may count on to 103 and then realise that the sequence of 2-digit endings will repeat.