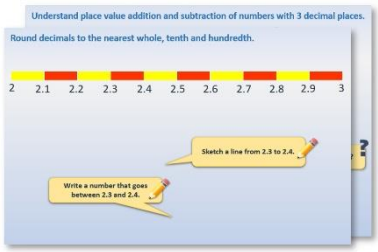
Week 8, Day 3
Finding the mean (1)

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.



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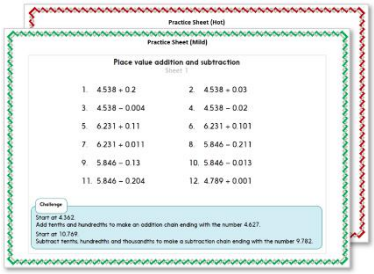
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.



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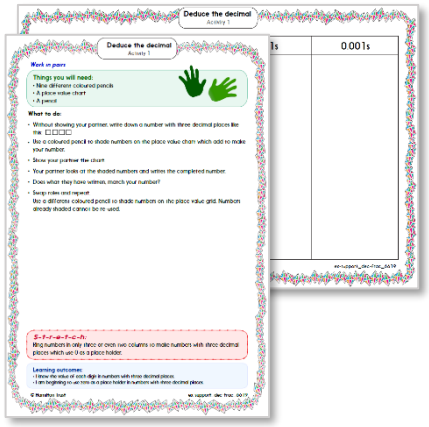
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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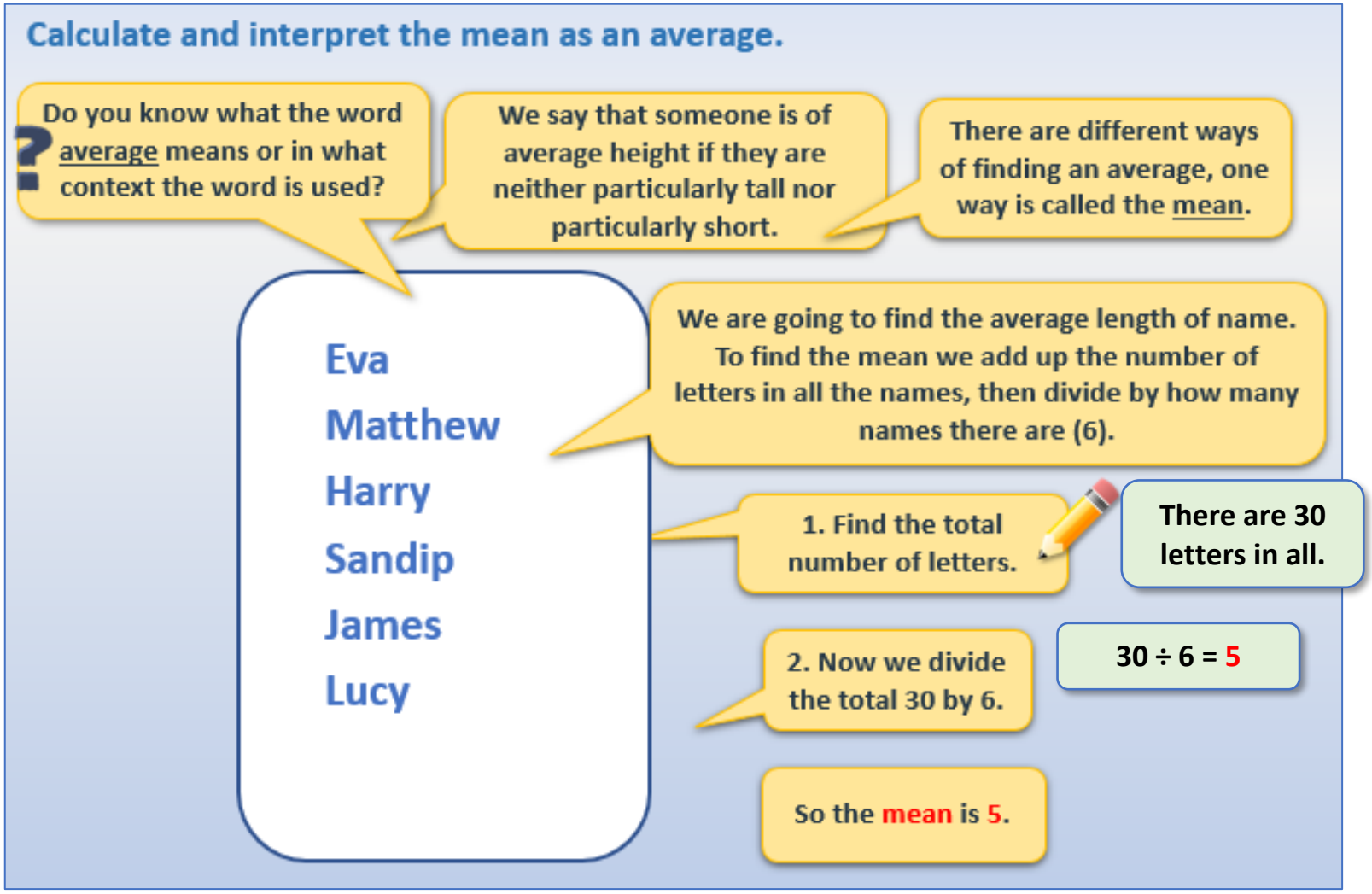
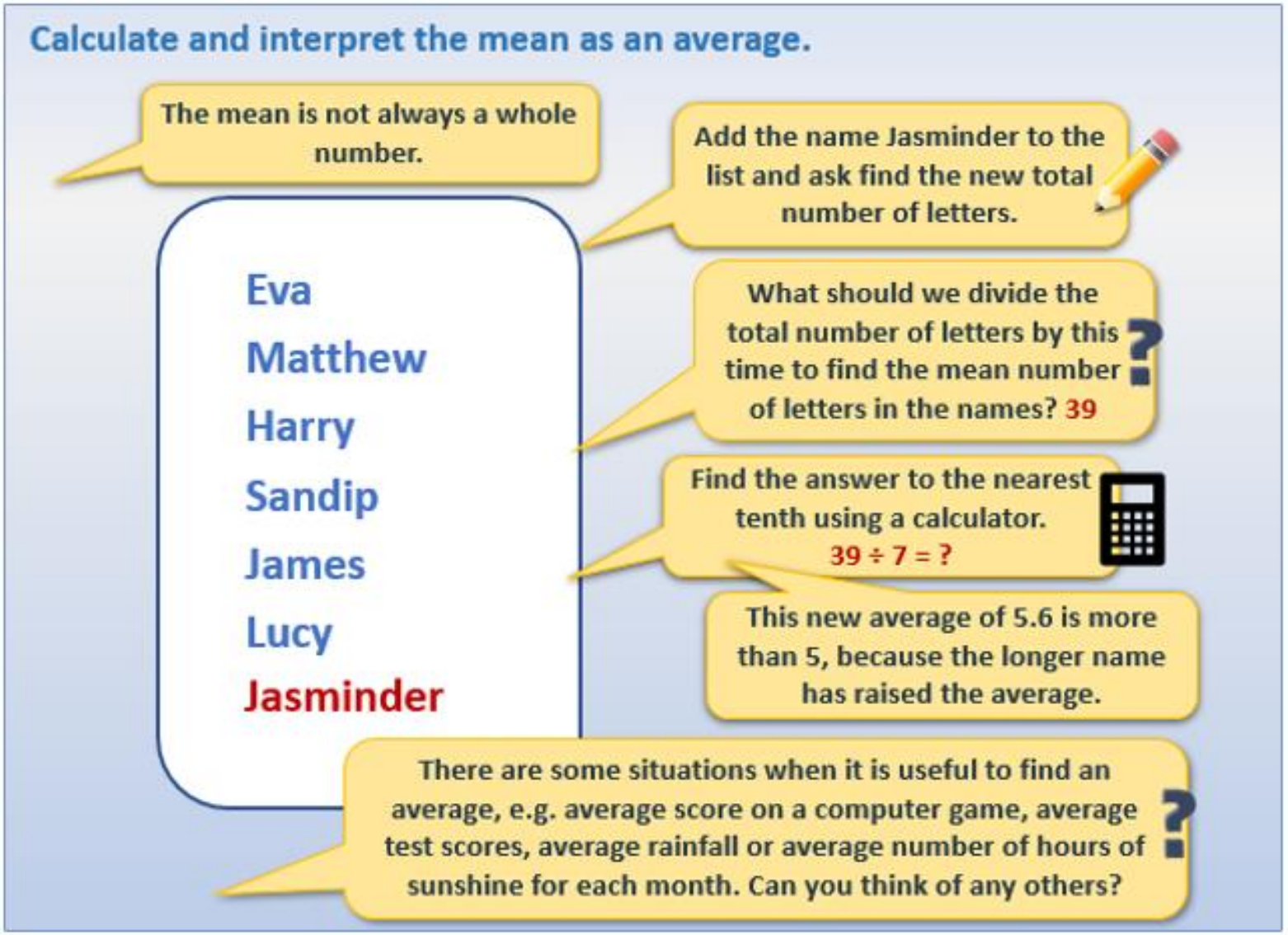
4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go at the **Investigation**…

Learning Reminders



Learning Reminders



Practice Sheets for All
Finding the mean

Children roll a 1-6 dice ten times.
Find the mean score (the average number which showed on the dice) for each set of 10 rolls.
Write your answers to one decimal place.

1. 3, 4, 1, 6, 2, 3, 5, 5, 1, 2

2. 4, 4, 2, 1, 6, 2, 5, 2, 3, 6

3. 6, 5, 2, 6, 4, 6, 3, 1, 2, 3

4. 1, 2, 5, 3, 1, 2, 1, 4, 2, 3

Children roll a 1-10 dice five times.
Find the mean score for each set of rolls.
Write your answers to one decimal place.
(Hint: What's a quick way to divide by 5? Divide by 10, then...)

5. 6, 2, 8, 9, 10

6. 5, 4, 7, 6, 1

7. 7, 10, 2, 3, 4

8. 8, 3, 9, 10, 7

Challenge

Hot: Tackle this challenge!

1. Write five different numbers with a mean of 10.
2. Find the mean of each set of numbers:
   1, 2, 3
   9, 10, 11
   99, 100, 101

Can you predict what the mean of 67, 68 and 69 will be? How?

Practice Sheet Answers

Finding the mean

1. 3.2
2. 3.5
3. 3.8
4. 2.4

5. 7
6. 4.6
7. 5.2
8. 7.4

Challenge

1, 2, 3 Mean = 2
9, 10, 11 Mean = 10
99, 100, 101 Mean = 100

The mean of 67, 68 and 69 is 68. The mean of any three consecutive numbers is equal to the middle number. The numbers either side are one more and one less than the middle number, 'cancelling out' to give three numbers the same.

A Bit Stuck?
Don't drop it!

A pair of socks tucked in together makes an excellent soft ball!

Two children are throwing a soft ball to each other. They count how many times they can do this without dropping the ball.
Here are their scores:

4	5	6	5

To find their mean score, add the four numbers; then divide by 4, the number of attempts.

$4 + 6 + 5 + 5 =$ ☐

☐ $\div 4 =$ ____

They have another go. Here are their scores.

5	6	7	6

Do you think they are getting better?
Do you think their mean score will be higher this time?
Calculate the mean score of these 4 attempts.

$24 \div 4 =$ ☐

They have one more go. Here are their scores.

7	8	9	8

Do you think their mean score will be higher this time? Calculate it.

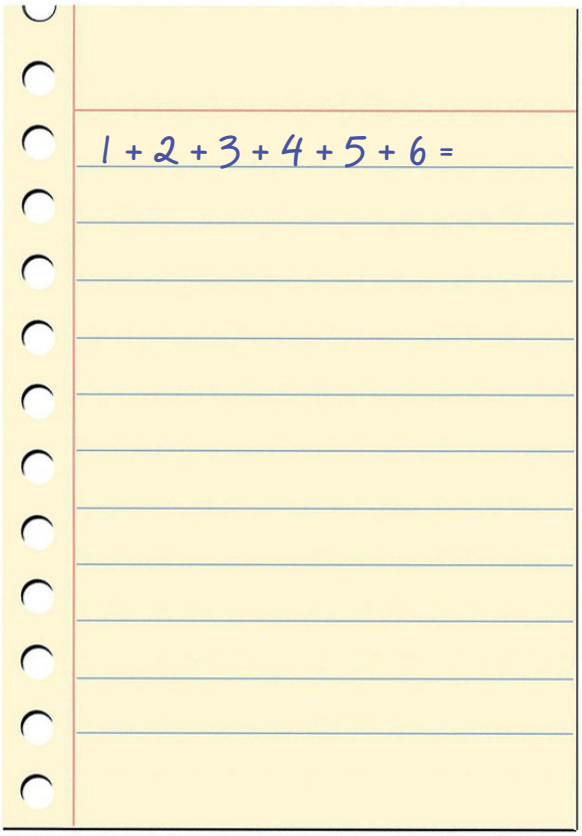
Have a go yourself! Use a soft ball and throw it to another person.

How many times can you throw it without dropping it?
Do this four times.

If your total score is not a multiple of 4, use a calculator to divide by 4 to calculate your mean score.

Try again and see if you can raise your mean score...
And try again!

Investigation
Mean score



1. If you rolled a 1 to 6 dice six times and each number came up once, what would be the mean (average) score?
2. A games manufacturer wants to make a dice which has a mean score of 5. If this dice was used for a game with a 1 to 100 track, on average how many rolls of the dice would it take a child to reach or pass the end of the track to finish the game?
3. Your task is to design such a dice! Here are the conditions:
   a. It has six faces.
   b. The manufacturer wants to put numerals not spots on the sides.
   c. It can only fit single-digit numbers.
   d. You can choose one number to use twice.
4. Make your dice. Roll it to see if you do get a mean score of 5. How many times do you think you should roll it? What happens if you roll it 10 times? 20 times? Can you use what you have found to design a different dice with a mean score of 5?
5. The manufacturer thinks it might be more fun for the children to have a dice with ten faces (decahedron).
6. Use what you have learnt about designing a dice with six faces to design a dice with ten faces which has a mean score of 5.

Challenge

What other whole number means are possible for a dice with six faces, all numbers less than 10?