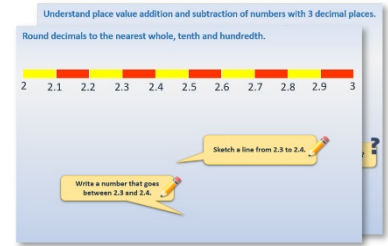


Year 5: Week 4, Day 5

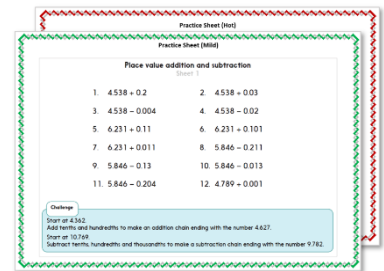
Temperature (2)

Each day covers one maths topic. It should take you about 1 hour or just a little more.

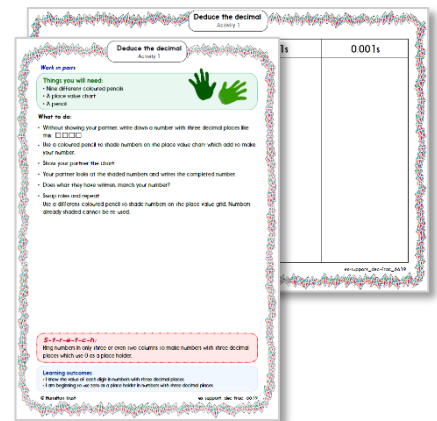
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



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

Learning Reminders

Use negative numbers in the context of temperature; find differences between temperatures.

These are the temperatures recorded at a school weather station. When do you think they might have been recorded?

	Maximum temperature	Minimum temperature
Monday	7°C	-2°C
Tuesday	5°C	-3°C
Wednesday	1°C	-2°C
Thursday	2°C	-4°C
Friday	0°C	-5°C

What was the highest temperature recorded? And the lowest?

Monday
Friday

On which day was there the greatest difference between maximum and minimum temperature? By how much did the temperature fall?

Monday
9°C

Which day has the smallest difference between maximum and minimum temperature? What was the drop?

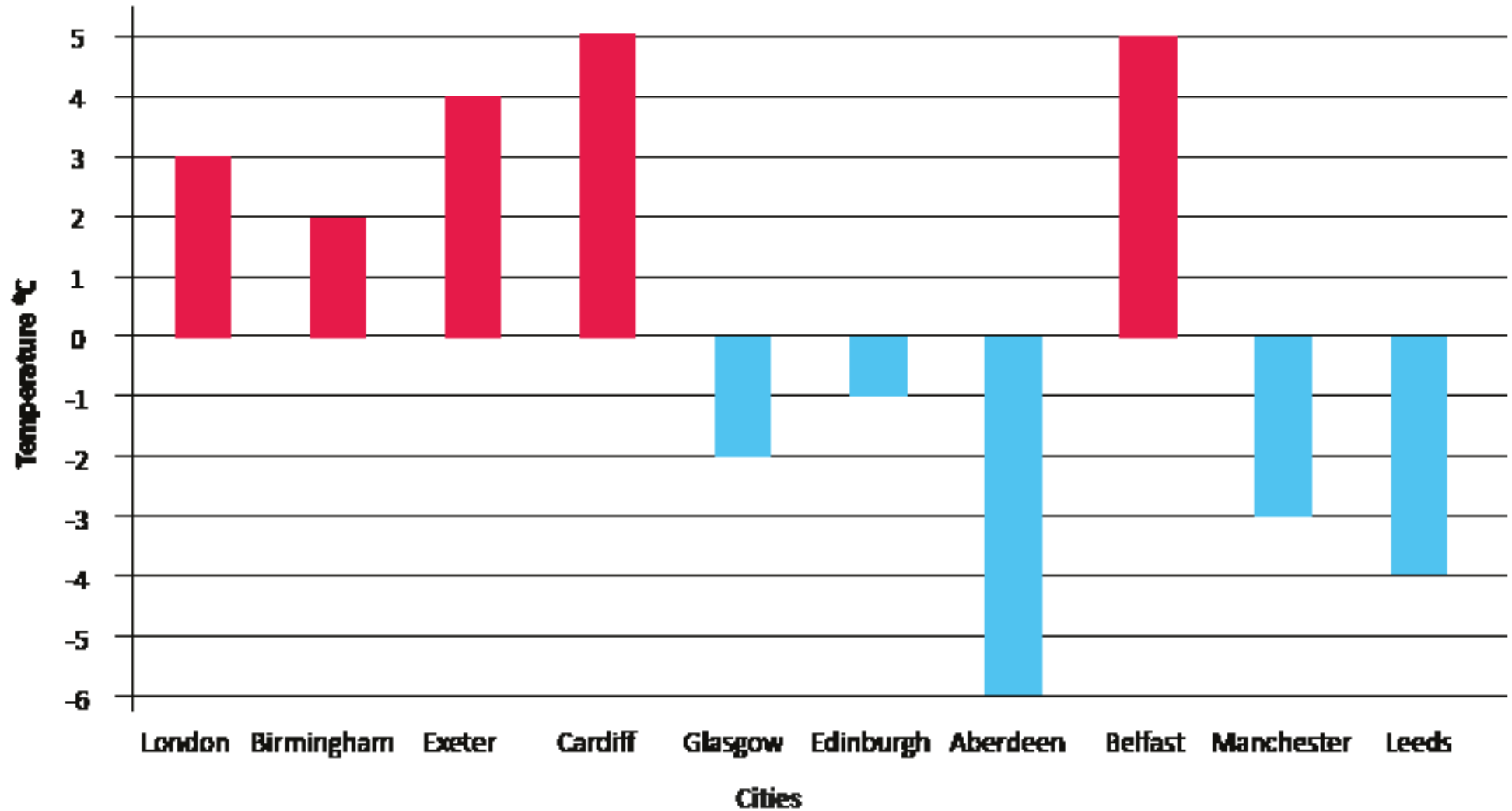
Wednesday
3°C



Practice Sheet Mild

Comparing temperatures

A graph of temperatures in UK cities on one day in January



Practice Sheet Mild

A graph of temperatures in UK cities in January

Use the graph on the previous sheet to answer these questions:

1. Which was the coldest city?
2. Which was the mildest city?
3. Which cities had temperatures below freezing?
4. How much colder was it in Manchester than Belfast?
5. How much warmer was it in Birmingham than Edinburgh?
6. How much colder was it Leeds than Exeter?
7. How much warmer was it in London than Glasgow?
8. What was the difference in temperature between the mildest city and the coldest city?

Challenge

Find pairs of cities with a difference in temperature of 6°C .

Practice Sheet Hot

Negative numbers

1. At noon, the temperature was 7°C . By midnight the temperature had fallen by 10°C . What was the temperature at midnight?
2. On Monday the temperature in London was 4°C . In Aberdeen the temperature was -4°C . What was the difference in temperature?
3. On Tuesday, the temperature in Birmingham was 5°C . It was 8 degrees colder in Glasgow. What was the temperature in Glasgow?
4. This table shows the maximum and minimum temperatures for a town in Finland:

Season	Maximum temperature	Minimum temperature
Winter	3°C	-23°C
Spring	7°C	-10°C
Summer	19°C	6°C
Autumn	11°C	-5°C

- a) Which season has the lowest minimum temperature?
 - b) Which of autumn or spring has the lowest minimum temperature?
 - c) What is the difference between the coldest and warmest temperatures in winter?
 - d) What is the difference between the coldest and warmest temperatures in autumn?
 - e) Which season has the biggest difference between the maximum and minimum temperatures?
 - f) What is the difference between the coldest temperature of the year and the warmest temperature of the year?
5. What is the difference between -5 and 7 ?
 6. What is the difference between -10 and 6 ?
 7. What is the difference between -4 and 4 ?
 8. Write a pair of numbers, one negative and one positive with a difference of 5 .
 9. Write a pair of numbers, one negative and one positive with a difference of 10 .
 10. Write a pair of numbers, one negative and one positive with a difference of 7 .

Practice Sheets Answers

Comparing temperatures (mild)

1. The coldest city was Aberdeen.
2. The mildest cities were Cardiff and Belfast.
3. Glasgow, Edinburgh, Aberdeen, Manchester and Leeds had temperatures below freezing.
4. It was 8 degrees colder in Manchester than Belfast.
5. It was 3 degrees warmer in Birmingham than Edinburgh.
6. It was 8 degrees colder in Leeds than Exeter.
7. It was 5 degrees warmer in London than Glasgow.
8. There are 11 degrees difference in temperature between the mildest city and the coldest city.

Challenge:

London and Manchester
Birmingham and Leeds
Exeter and Glasgow
Cardiff and Edinburgh
Belfast and Edinburgh

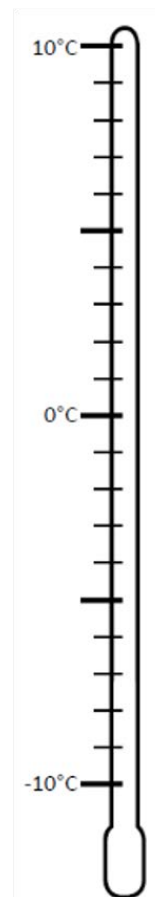
Negative numbers (hot)

1. -3°C
2. 8°C
3. -3°C
4. a) Winter
b) Spring
c) 26
d) 16
e) Winter
f) 42
5. 12
6. 16
7. 8
8. e.g. -3 and 2
9. e.g. -5 and 5
10. e.g. -4 and 3

A Bit Stuck? It's freezing!

What to do:

- Mark 8°C and -2°C on the thermometer.
- What is the difference between the two temperatures?
- Your challenge is to find as many pairs of temperatures with a difference of 10°C as you can. BUT one temperature must be above 0°C and one below 0°C .
- How many can you find?



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

Write some pairs of temperatures with a difference of 20°C .

Investigation

Alternating chains

1. Start a chain of positive and negative numbers.
2. Find the sum of the numbers in the chain. Is the sum positive or negative?
3. Make the chain one number longer. Find its sum. Is it positive or negative?
4. Make the chain one number longer. Find its sum. Is it positive or negative?
5. Continue like this until you have a chain with 12 numbers.

Look at the pattern. Can you predict what the sum of a chain of 20 numbers would be?

What would the sum of a chain of 21 numbers be?

Try different types of number in your chain, e.g. +1, -3, then +1, -3, +5, then +1, -3, +5, -7, and so on.

Try square numbers... +1, -4, +9, -16, etc.

	+1, -2
	sum = -1
	+1, -2, +3
	sum = +2
	+1, -2, +3, -4
	sum = -2