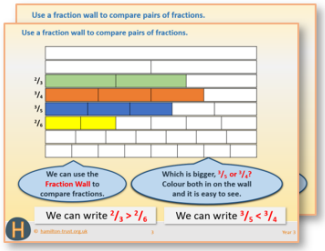
Week 12, Day 4

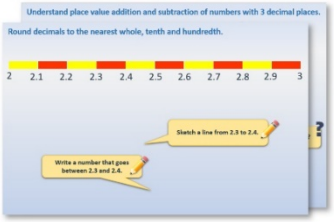
Use negative numbers in context of temperature

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

1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



OR start by carefully reading through the **Learning Reminders**.



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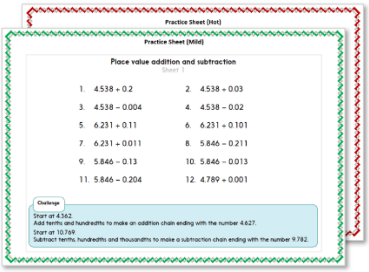
2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either Mild (easier) or Hot (harder)!
Check the answers.



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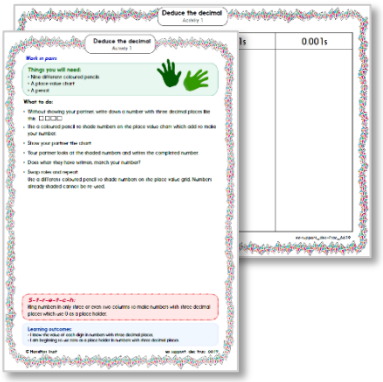
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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

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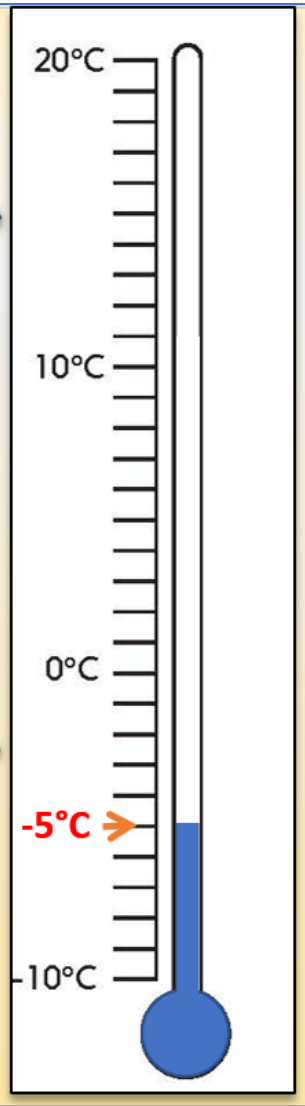
Learning Reminders

Use negative numbers in context of temperature.

Numbers more than 0 are called **positive numbers.**

On a cold night, the temperature might fall 5 degrees below 0 degrees Celsius.
We write this as -5°C.

Numbers less than 0 are called **negative numbers.**



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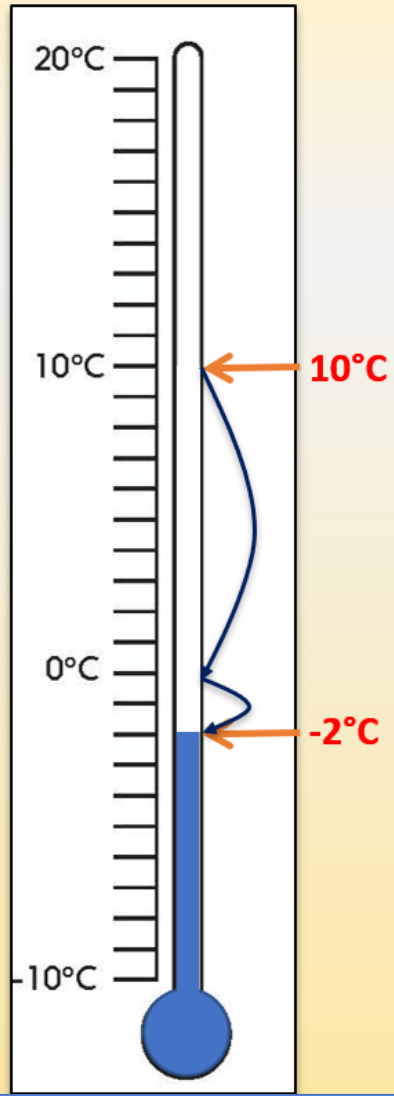
Learning Reminders

Use negative numbers in context of temperature.

One day last Spring, the temperature was 10°C. Overnight it fell to -2 °C. degrees Celsius.

The difference between 10 and 0 is 10; then between 0 and -2 another 2. The total **difference** is 12, with a **change** of -12.

The difference between two temperatures will always be a positive number. A change will be given as a negative number if the temperature falls, or as a positive number if it rises.



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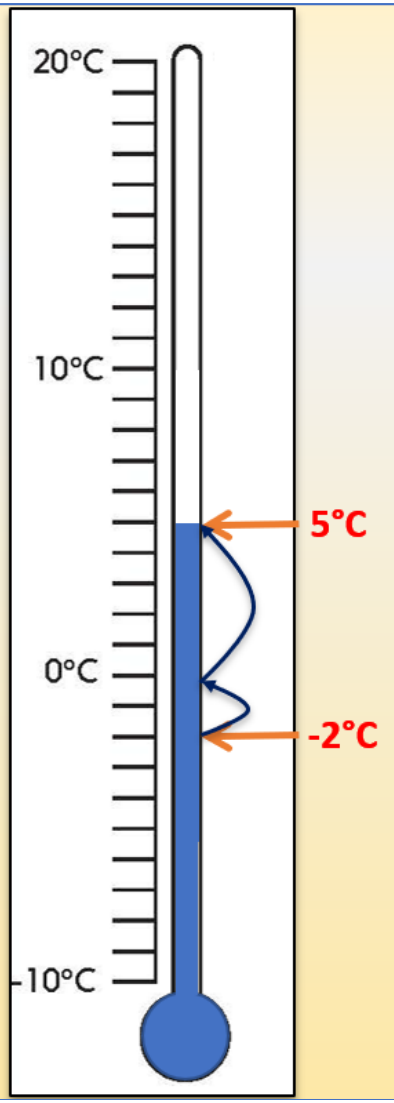
Learning Reminders

Use negative numbers in context of temperature.

The next day, the temperature rose from -2 °C to 5°C.

The difference between -2 and 0 is 2; then between 0 and 5 another 5.

The total **difference** is 7, with a **change** of 7.



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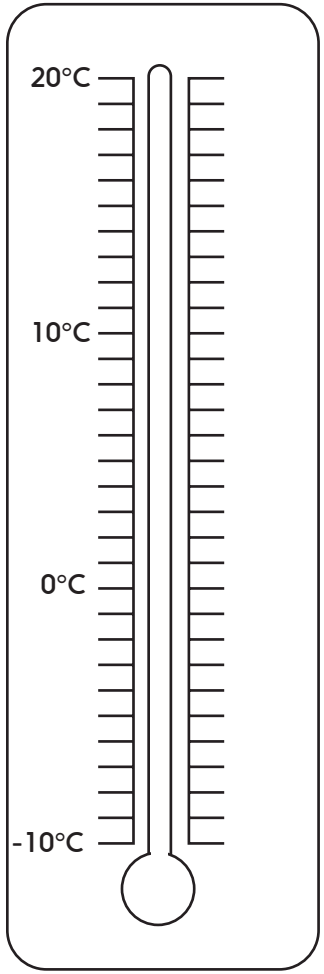
Practice Sheet Mild

Temperature

Mark the following temperatures on the thermometer: 15°C
-1°C
-9°C
-5°C
-7°C
8°C



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

Was the night colder on Monday or Tuesday?

Which was the coldest night?

Which was the mildest night?

How much colder was it during the day on Thursday than Monday?

Challenge

Which day had a temperature drop of 5°C?

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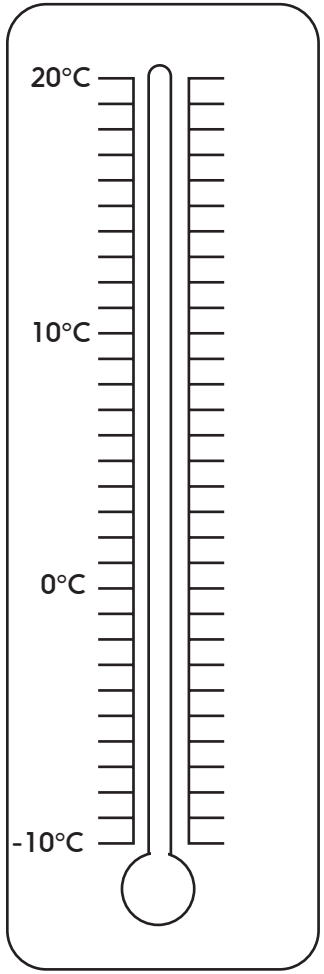
Practice Sheet Hot
Temperature

Mark the following temperatures on the thermometer:

15°C
-1°C
-9°C
-5°C
-8°C
-3°C
4°C



Work out the temperature change for each day.

Day	Maximum day temperature	Minimum night temperature	Temperature change
Monday	5°C	-1°C	
Tuesday	7°C	-2°C	
Wednesday	4°C	-3°C	
Thursday	2°C	-5°C	
Friday	1°C	-4°C	

Challenge

On Saturday, there was a temperature difference of 13°C between day and night! What might the maximum and minimum measurements have been?

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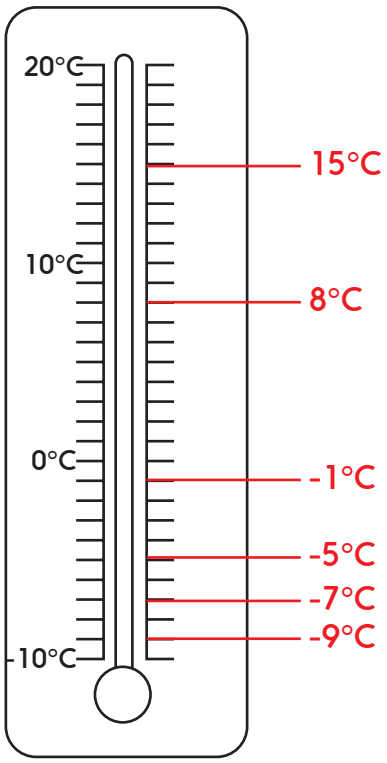
Practice Sheets Answers

Temperature (mild)

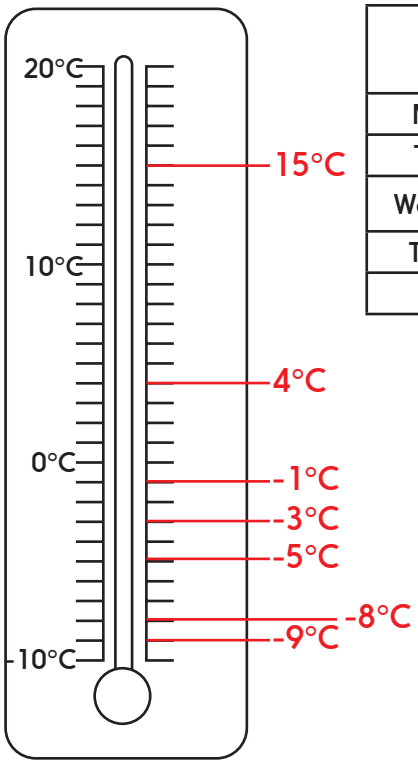


Was the night colder on Monday or Tuesday? Tuesday
Which was the coldest night? Thursday
Which was the mildest night? Monday
How much colder during the day on Thursday was it than Monday? 3 degrees colder

Challenge

There was a drop of 5°C in temperature on Friday.
Watch out for children who answer Monday or Thursday having seen the number 5 in the information.

Temperature (hot)



Day	Maximum day temperature	Minimum night temperature	Temperature change
Monday	5°C	-1°C	-6
Tuesday	7°C	-2°C	-9
Wednesday	4°C	-3°C	-7
Thursday	2°C	-5°C	-7
Friday	1°C	-4°C	-5

Challenge

Accept any pair of temperatures with a difference of 13°C, e.g.
20°C and 7°C
13°C and 0°C
0°C and –13°C

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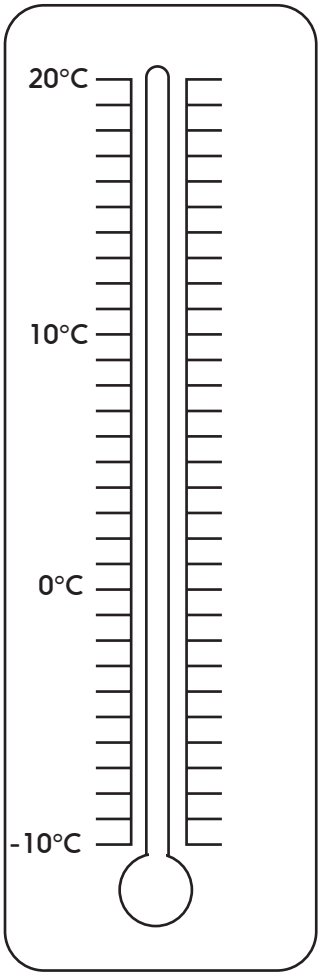
A Bit Stuck?
Ordering temperatures

1. Cut out the set of Temperature cards and shuffle them.
   Arrange in order from -5°C to 5°C.
   Count on and back from -5°C to 5°C several times.

2. Shuffle the cards, then - without looking - remove one.
   Now put the other cards in order from -5°C to 5°C.
   Which card is missing? Write down which one you think is missing then turn it over to check.
   Repeat this several times.

3. Try again, this time with two hidden cards.
   Write down the two missing temperatures. Circle which is the warmest.
   Repeat several times.

4. Shuffle the cards and place *face down*.
   Take three cards from the pile.
   Place these in order, lowest temperature to the highest.
   Repeat several times.



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A Bit Stuck?
Ordering temperatures

-5°C	-4°C	-3°C
-2°C	-1°C	0°C
1°C	2°C	3°C
4°C	5°C	

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Investigation
Play your cards right!

- Carefully cut out, then shuffle the set of −10°C to 10°C cards.
- How quickly can you order them from −10°C to 10°C?
- Reshuffle the cards.
  Take 2 cards at random; which is the coldest temperature?
  Record it as an inequality, e.g. −8°C < 7°C.
- Without replacing those cards, choose another pair and repeat.
  Repeat until there is only one card left.
- Reshuffle the cards.
  Choose 3 at random.
  Write them in order, highest temperature first.

Example

Choose −9°C, 8°C and −2°C

Correct order: 8°C, −2°C, −9°C

Challenge

- Shuffle the cards.
  Take 2 cards at random; the first is the starting temperature and the second the new temperature.
- Has the temperature increased or decreased?
  Find the difference between the two temperatures.
- Without replacing those cards, choose another pair and repeat.
- Repeat until there is only one card left.

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Investigation

Play your cards right!

-10°C	-9°C	-8°C
-7°C	-6°C	-5°C
-4°C	-3°C	-2°C
-1°C	0°C	1°C

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Investigation

Play your cards right!

2°C	3°C	4°C
5°C	6°C	7°C
8°C	9°C	10°C

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