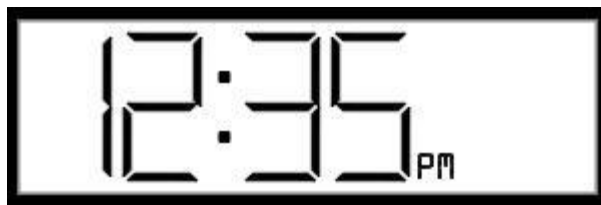# Ready-to-go Lesson Slides

Time

Lesson 4

Sum3

To be able to convert between 24 hour analogue and digital clocks

STARTER:

Investigate on a 12 hour digital clock: over 12 hours, how many times does the digit 5 appear?

Success Criteria:

Mastery:
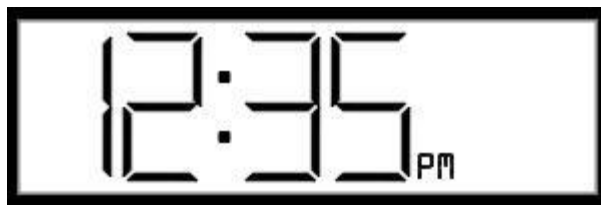I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

STARTER:

Investigate on a 12 hour digital clock, over 12 hours, how many times does the digit 5 appear?

144 times.
During the hour of 5am or 5pm there are 67 in total.
05:00, 05:01…….., 05:05………05:15…….
7 times in every other hour
00:05, 00:15, 00:25, 00:35, 00:45, 00:55

Success Criteria:

Mastery:
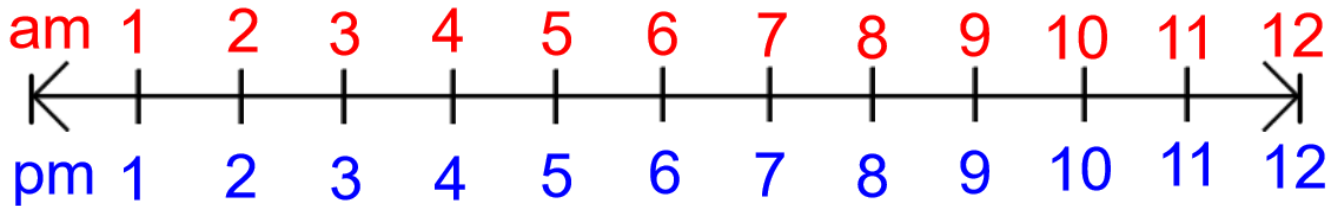I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.
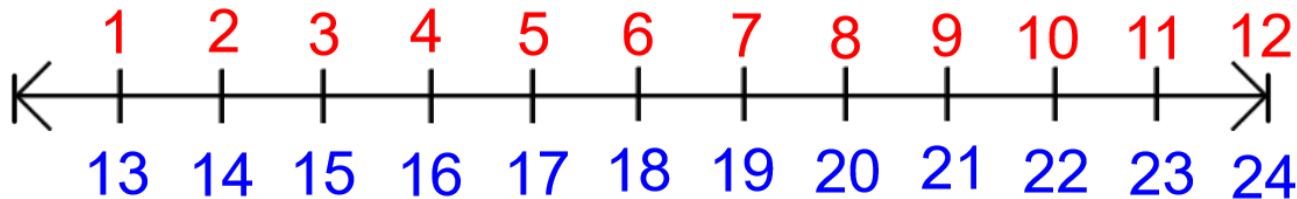
To be able to convert between 24 hour analogue and digital clocks

Success Criteria:

Mastery:
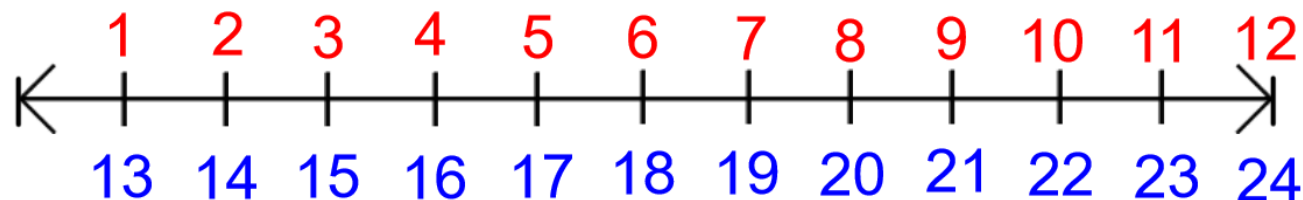I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

TALKING TIME:

12 hour clock time

24 hour clock time

What do you notice?
What is the same and what is different about the 12 hour and the 24 hour clock times?

To be able to convert between 24 hour analogue and digital clocks

TALKING TIME:

24 hour clock time

Use the 24 hour clock times in digital format. What would these times be?
1pm (one o'clock in the afternoon)
9 o'clock in the morning (9am)
Midnight (middle of the night)
Half past 7 in the evening (07:30pm)
11:15pm (quarter past 11 at night)

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
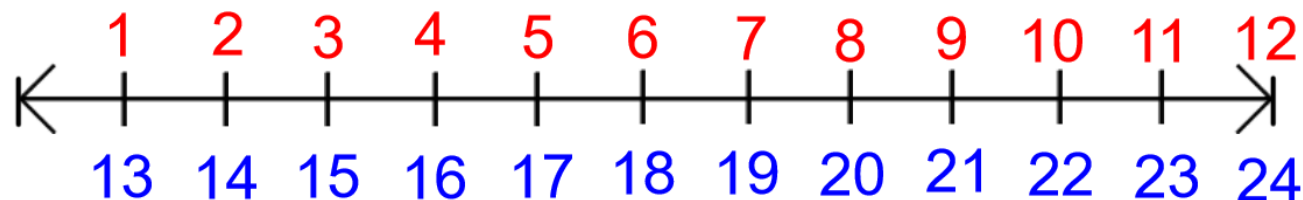
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

TALKING TIME:

24 hour clock time

Use the 24 hour clock times in digital format. What would these times be?

1pm (one o'clock in the afternoon)   **13:00**
9 o'clock in the morning (9am)   **09:00**
Midnight (middle of the night)   **24:00 or 00:00**
Half past 7 in the evening (07:30pm)   **19:30**
11:15pm (quarter past 11 at night)   **23:15**

Success Criteria:

Mastery:
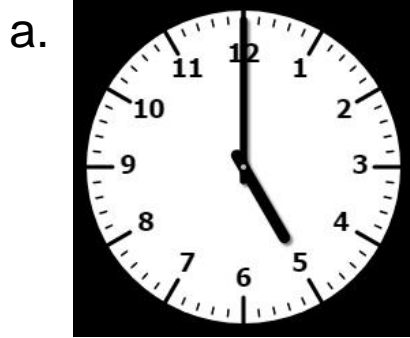I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.
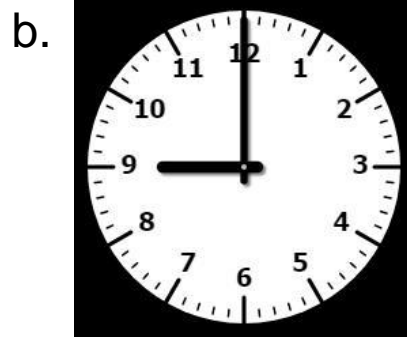
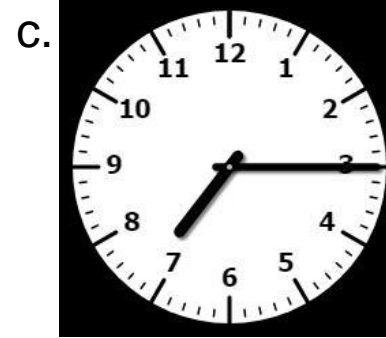# To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 1:

Write the times shown in the 24 hour clock time (digital format)

a.

evening

b.

morning

c.

evening

d.

afternoon

e.

morning

f.

evening

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 1:

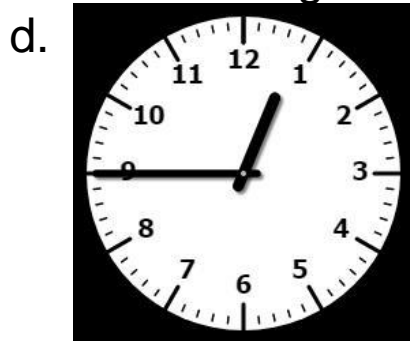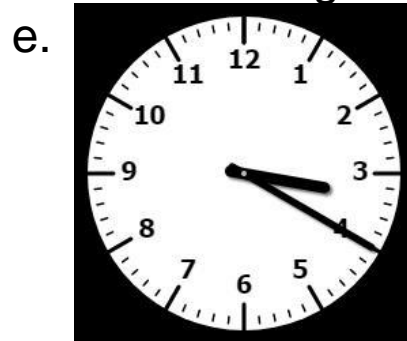Write the times shown in the 24 hour clock time (digital format)

a.

17:00
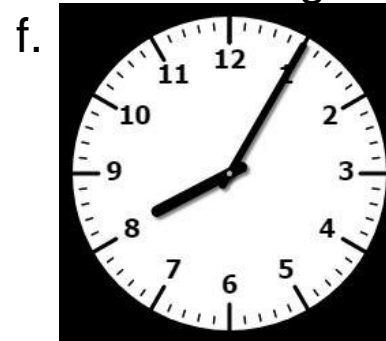
b.

09:00

c.

19:15

d.

12:45

e.

03:20

f.

20:05

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
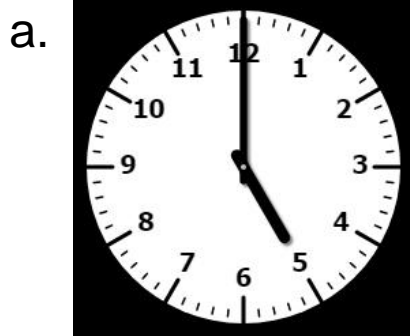
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.
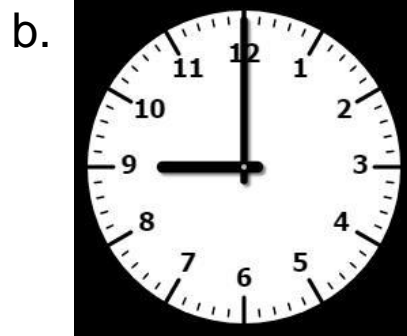
To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 2:

Match the analogue and digital times.

　　am　　　　　　　pm　　　　　　　pm　　　　　　　am

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

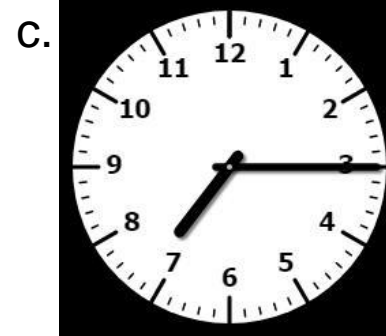# To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 2:

Match the analogue and digital times.

am   pm   pm   am

21:15

08:15

13:25   **00:25**
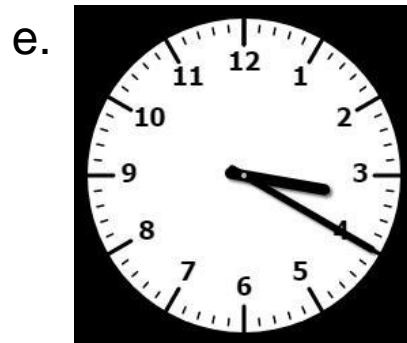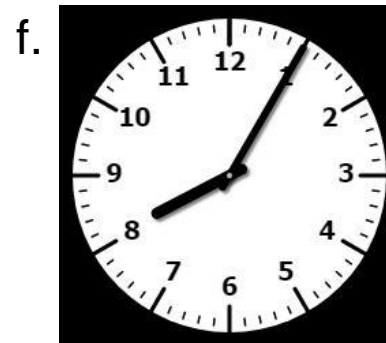
Success Criteria:

Mastery:
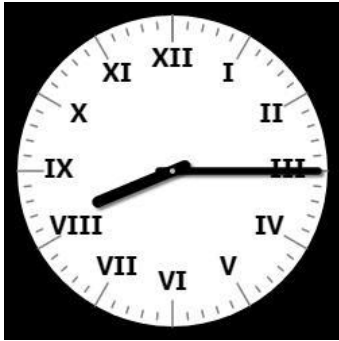I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

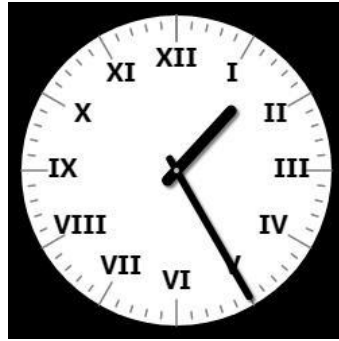**TALKING TIME:**

Helen leaves school at the time shown. She arrives at the football ground 50 minutes later and has 1 hour of training. She arrives home 35 minutes later. Show what time Helen gets home in 24 hour digital format.

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

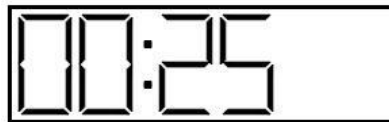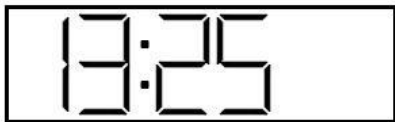# To be able to convert between 24 hour analogue and digital clocks

TALKING TIME:

Helen leaves school at the time shown.
She arrives at the football ground 50
minutes later and has 1 hour of training.
She arrives home 35 minutes later.
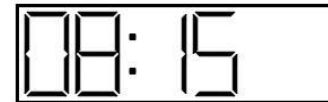Show what time Helen gets home in
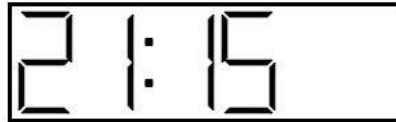24 hour digital format.

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
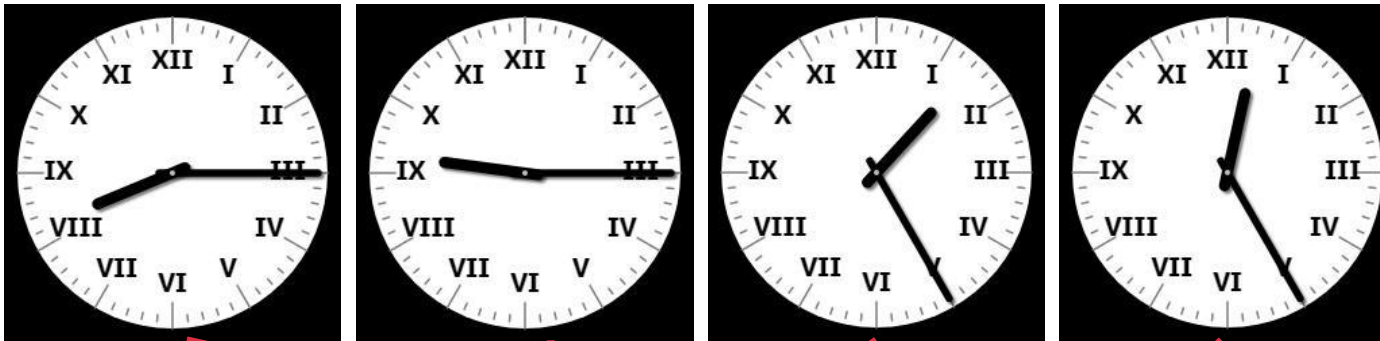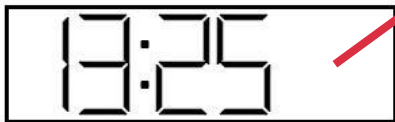
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

17:50

50 minutes later than 15:25 is 16:15.
I hour training takes us to 17:15.
35 minutes later than 17:15 is 17:50.

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 3:

Tommy arrives at school at the time shown. He has registration for 25 minutes followed by a maths lesson lasting 1 hour and 10 minutes. Assembly is next which lasts for 15minutes. After assembly is break time. Show what time Tommy has break in 24 hour clock time.
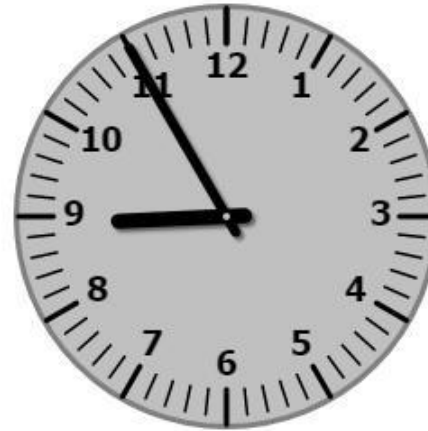
Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
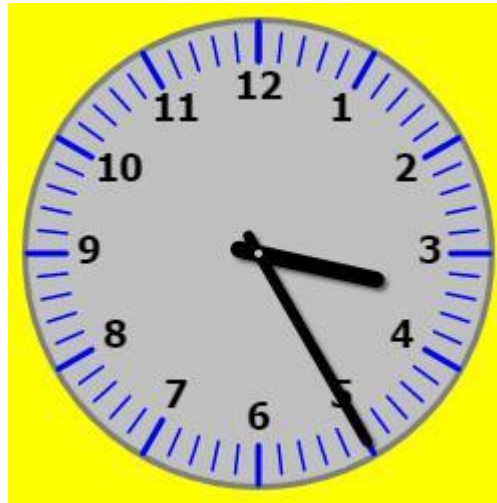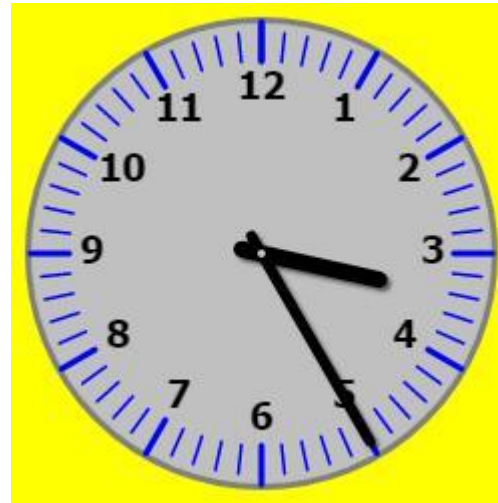
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

If on Wednesday Tommy arrived 17 minutes later than usual, what time did he arrive at school and how long would he be in registration for?

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 3:

Tommy arrives at school at the time shown. He has registration for 25 minutes followed by a maths lesson lasting 1 hour and 10 minutes. Assembly is next which lasts for 15minutes. After assembly is Break Time. Show what time Tommy has Break in 24 hour clock time.

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

10:45
He arrives at 08:55, 25 minutes later is the end of registration at 09:20. Then maths lasts until 10:30 followed by another 15 minutes for assembly taking us to 10:45 the start of Break Time.

If on Wednesday Tommy arrived 17 minutes later than usual, what time did he arrive at school and how long would he be in registration for?   *09:12*   *8 minutes of registration.*

To be able to convert between 24 hour analogue and digital clocks

TALKING TIME:

What is the quickest way to convert a digital 24 hour clock time to an analogue clock?

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.
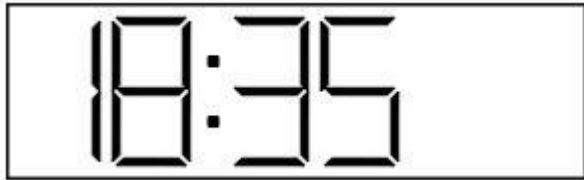
To be able to convert between 24 hour analogue and digital clocks

TALKING TIME:

What is the quickest way to convert a digital 24 hour clock time to an analogue clock?

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

Subtract 12 hours from the 24 hour digital display.
18 – 12 = 6   so the hour hand on the analogue clock is in the 6pm section.

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 4:

Convert the times on these digital displays to times on analogue clocks.

a. 18:00

b. 19:45

c. 02:15

d. 06:20

e. 21:12

f. 23:56

g. 00:04

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
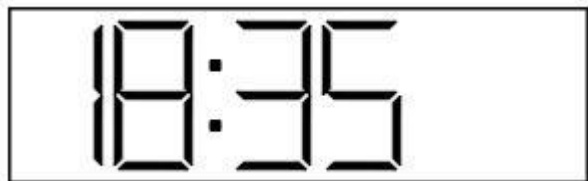
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 4:

Convert the times on these digital displays to times on analogue clocks.

a. 18:00

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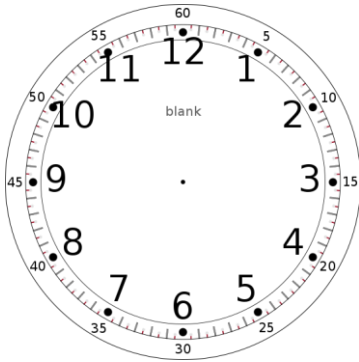
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

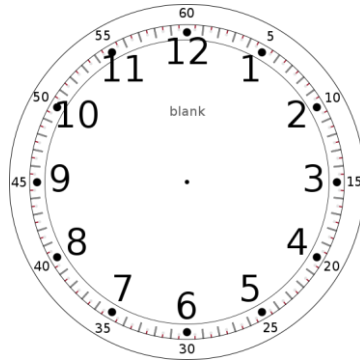# To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 4:

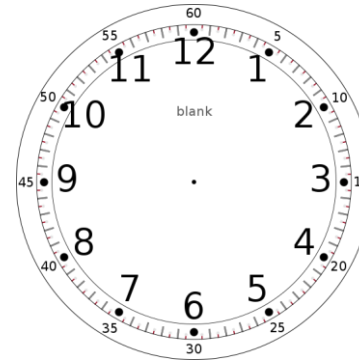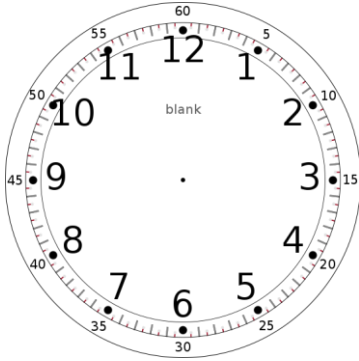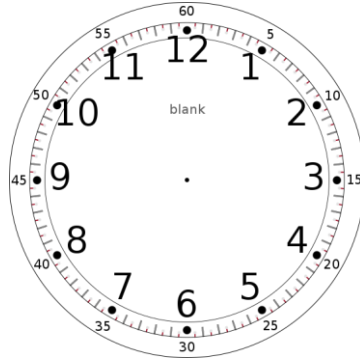Convert the times on these digital displays to times on analogue clocks.

18:00

06:20

19:45

21:12

02:15

23:56

00:04

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 5:

Harry says,

> **To change afternoon and evening times from 12 hour clock to 24 hour clock in the digital format, you just add a ten and two ones to the 12 hour clock number.**

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

True or false? Explain your thinking.

To be able to convert between 24 hour analogue and digital clocks

ACTIVITY 5:

Harry says,

> **To change afternoon and evening times from 12 hour clock to 24 hour clock in the digital format, you just add a ten and two ones to the 12 hour clock number.**

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.
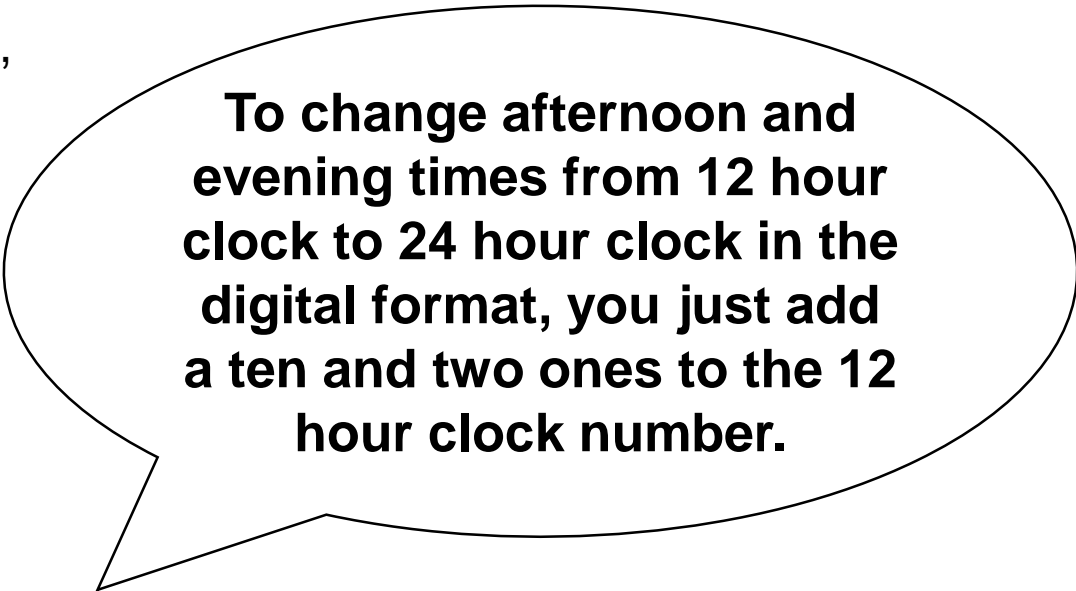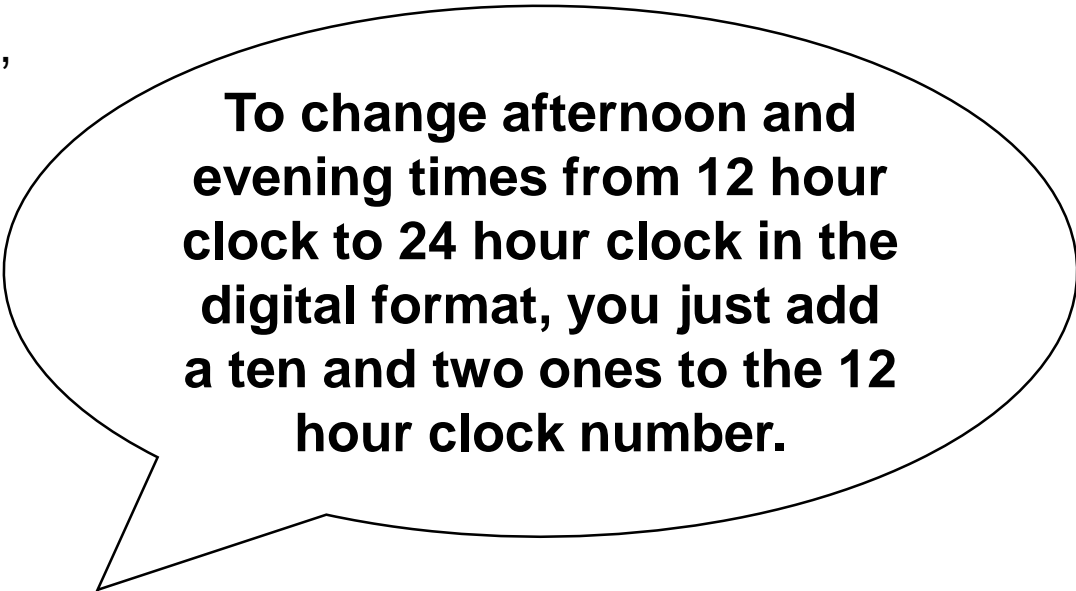
Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

True or false? Explain your thinking.
True – Adding 12 comes from the fact that we are changing from 12 hour clock to 24 hour clock which is double 12 therefore we add 12 hours to the hour time
e.g. 3pm = 15:00   (3 + 12 = 15)

To be able to convert between 24 hour analogue and digital clocks

EVALUATION:

Three children are meeting at their local leisure centre.
Hollie says,

We are meeting at 15:20.

Neil says,

We are meeting at 03:20pm.

Joshua says,

We are meeting at twenty to three.

Will all the children meet at the same time?
Convince me.

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

To be able to convert between 24 hour analogue and digital clocks

EVALUATION:

Three children are meeting at their local leisure centre.
Hollie says,

We are meeting at 15:20.

Neil says,

We are meeting at 03:20pm.

Joshua says,

We are meeting at twenty to three.

Success Criteria:

Mastery:
I can convert between analogue and digital times using the correct 4-digit format.

Greater Depth:
I can apply my knowledge of converting between analogue and digital times, using the 4-digit format, when applying reasoning to explain my answers.

Will all the children meet at the same time?   **NO**
Convince me.   **Hollie and Neil will be there at the same time as they both have the same time – Hollie's is in 24 hour clock and Neil's is in 12 hour clock. Joshua won't be there as the time should be twenty past three not twenty to three.**