Lesson: 12 Hour and 24 Hour Clocks

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| Learning Goals:  |

* To be able to tell the difference between a 24 hour clock and a 12 hour clock
* To be able to convert time from a 12 hour clock to a 24 hour clock
* To be able to convert time from a 24 hour clock to a 12 hour clock

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| Topic: 12 Hour and 24 Hour Clocks  |

* Most train, bus, airline schedules and the military use a 24 hour clock. There are no am and pm labels in a 24 hour clock. The hours start at zero and go through 24
* A lot of countries, including Canada also use a 12 hour clock. The 12 hour clock is a time convention in which the 24 hours of a day are split into two. The first 12 hours are labelled a.m. (ante meridiem) which means before midday and the last 12 hours are labelled p.m. (post meridiem) which means after midday.

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| Converting From 24 Hour Clock to 12 Hour Clock* If the hour is exactly 12, then add a ‘pm’ label
* If the hour is greater than 12, subtract 12 from the hour and then add a ‘pm’ label
* If the hour is less than 12, remove any leading zeroes, and then add a ‘am’ label
* The minutes and seconds never change when converting
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| Converting From 12 Hour Clock to 24 Hour Clock * If the hour is exactly 12:00 pm, then simply remove the ‘pm’ label
* If the hour is in pm time, add 12 to the hour and remove the ‘pm’ label
* If the hour is in am time, and less than 10, add a zero before the digit and remove the ‘am’ label
* If the hour is in am time, and greater than 10, just remove the ‘am’ label
* The minutes and seconds never change when converting
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| Example(s):  |

1. Convert the following times from 24 hour time to 12 hour time
2. 13: 36

Since the hour is greater than 12, subtract 12 from the hour and add a ‘pm’ label 13 - 12 = 1 pm

The minutes and seconds never change when converting 1:36pm

 b) 02: 09

Since the hour is less than 12, remove any leading zeroes, and then add the ‘am’ label 2:09 am

2) Convert the following times from a 12 hour clock to a 24 hour clock.

1. 2:50 am

Since the hour is in am time and less than 10, we add a zero before the digit and remove the ‘am’ label 02:50

 b) 10:30pm

Since the hour is in pm time, add 12 hours to the hour and remove

the ‘pm’ label 10 + 12 = 22

The minutes and seconds never change when converting 22:30

 c) 11:15 am

Since the hour is in am time and greater than 10, we just remove the ‘am’ label 11:15

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| Practice Questions:  |

1. Convert the following times from 24 hour time to 12 hour time
2. 12:04
3. 04:20
4. 11:30
5. 23:15
6. 03:30
7. 15:20
8. Convert the following times from a 12 hour time to a 24 hour time
9. 1:30 pm
10. 1:30 am
11. 11:47pm
12. 10:30am
13. 1:30 pm

3) Write the 24 hour time and 12 hour time shown by each of the clocks

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| 1. Time is in pm

 | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |
|  b) Time is in am | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |
|  c) Time is in pm | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |

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| Strand 2 Lesson 2 Assessment:  |

1. Convert the following times from 24 hour time to 12 hour time
2. 12:04
3. 04:20
4. 11:30
5. 23:15
6. 03:30
7. 15:20

 2) Convert the following times from a 12 hour time to a 24 hour time

1. 1:30 pm
2. 1:30 am
3. 11:47pm
4. 10:30am
5. 5:45 pm

3) Write the 24 hour time and 12 hour time shown by each of the clocks

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| 1. Time is in pm

 | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |
|  b) Time is in am | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |
|  c) Time is in pm | 12 hour time: \_\_\_\_\_\_\_\_\_\_\_24 hour time: \_\_\_\_\_\_\_\_\_\_\_ |