


Maths Learning Design

Topic:	Measurement	Class:	Year 5 Year 6 (I)	Duration:	3 – 4 periods
Subtopic :	Conversion of Time				
Content Learning Objectives:	Pupils should be able to: <ul style="list-style-type: none"> • Convert minutes or (minutes and seconds) into seconds. • Convert hours or (hours and minutes) into minutes. • Convert minutes to hours or (hours and minutes). • Convert between 12-h clock and 24-h clock. 				

Teaching & Learning Activities		Resources	Summary																											
Tuning in (Introduction) <i>Determine prior knowledge and prepare pupils</i>	<ol style="list-style-type: none"> 1. Teacher explains the learning intentions and success criteria on a Power Point and manila cards. 2. Teacher recaps the units and instruments the pupils have learnt and used in Year 4 to measure time. 3. Recaps the units used for measuring time by projecting a stopwatch using a projector showing seconds, minutes and hours. 4. Ask pupils to count out loud starting from 50s onwards until just past 1 minute. 5. Repeat the same procedure for the next 1 minute. 6. Ask students: <ul style="list-style-type: none"> ○ What happens after 59 seconds? ○ What do you notice? 7. Revise the relationship between seconds and minutes and between minutes and hours. 																													
Finding out & Sorting out (Lesson Development) <i>Time to locate, gather information, organise and process ideas.</i>	<ol style="list-style-type: none"> 1. Teacher gathers information about time through the pupils' prior knowledge and experiences to check their concept of time for example the time they spent in reciting Quran. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th></th> <th>Start</th> <th>End</th> <th>Duration</th> <th>Conversion in minutes</th> </tr> </thead> <tbody> <tr> <td>Student 1</td> <td>8.00 am</td> <td>9.15 am</td> <td>h min</td> <td>min</td> </tr> <tr> <td>Student 2</td> <td>11.10 am</td> <td>12.45 pm</td> <td>h min</td> <td>min</td> </tr> </tbody> </table> 2. For this activity, pupils will work in group of fours to solve the conversion problems. 3. Next, pupils convert from minutes to hours and minutes. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Minutes</th> <th>Hours and minutes</th> </tr> </thead> <tbody> <tr> <td>60 min</td> <td>h min</td> </tr> <tr> <td>85 min</td> <td>h min</td> </tr> <tr> <td>100 min</td> <td>h min</td> </tr> <tr> <td>135 min</td> <td>h min</td> </tr> <tr> <td>240 min</td> <td>h min</td> </tr> </tbody> </table> 		Start	End	Duration	Conversion in minutes	Student 1	8.00 am	9.15 am	h min	min	Student 2	11.10 am	12.45 pm	h min	min	Minutes	Hours and minutes	60 min	h min	85 min	h min	100 min	h min	135 min	h min	240 min	h min	<ul style="list-style-type: none"> • 12-h analogue clocks • Stopwatches • Conversion tables • Worksheets 	Expected learning outcomes: <ul style="list-style-type: none"> • Converting time in hours or (hours and minutes) into minutes. • Converting time in minutes into hours or (hours and minutes). • Show time on 12-h real clocks • Compare time between 12-h clock and 24-h clock and vice versa.
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	<ol style="list-style-type: none"> Using 12-h analogue clock, ask pupils to show the time; 8.00 am, 8.35 am, 9.15 am, 11.10 am and 12.45 pm. Ask them what the difference between (11pm and 11am) and (12pm and 12am). Ask them if they can tell whether it is morning or afternoon just by looking at the clock face. They will notice that there is no difference on the clock. Introduce the 24-h clock by explaining that one day has 24 hours. Day has 12 hours and night has 12 hours. One cycle shows morning. The next cycle after 12 shows afternoon and night time. 		
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<p>Making Conclusions <i>Draw conclusion and consolidate understanding</i></p>	<ol style="list-style-type: none"> The pupils use an overlapping clock on paper plates to show both 12-h clock and 24-h clock. Emphasise on how to write the time after 12 noon (continue to count on till 2300 hours) Discuss what happens after 2359 and what it means 0000. Discuss on the importance of the 24-h clock. 	<ul style="list-style-type: none"> Overlapping 12-h and 24-h clocks 	<p>Able to</p> <ul style="list-style-type: none"> Compare time between 12-h clock and 24-h clock and vice versa. Convert time in 12-h clock into 24-h clock Find duration taken between the departure time and arrival time
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<p>Go further (Enrichment) <i>Apply knowledge to develop further understanding</i></p>	<ol style="list-style-type: none"> Using flight or movie schedule, ask pupils to convert the 12-h clock into 24-h clock. <table border="1"> <thead> <tr> <th>Departure time</th> <th>Arrival time</th> </tr> </thead> <tbody> <tr> <td>10.30 am</td> <td>2.15 pm</td> </tr> <tr> <td>7.15 pm</td> <td>12.20 am</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Pupils find the duration taken between the departure time and arrival time using time-line method. Pupils convert the hour minutes into minutes. Using a timeline, the pupils relate (One day=24 hours) to investigate how the date changes after the 24th hours. 	Departure time	Arrival time	10.30 am	2.15 pm	7.15 pm	12.20 am	<ul style="list-style-type: none"> Movie or flight schedules A timeline 	<p>Able to</p> <ul style="list-style-type: none"> Convert time in hours or hours and minutes into minutes. Apply knowledge to real life situation by investigating how the date changes after 24th hours using timeline
Departure time	Arrival time								
10.30 am	2.15 pm								
7.15 pm	12.20 am								

Evaluation (with respect to the Content Learning Objectives)

What worked well?	What would make it even better next time?

WORKSHEET

Remember:
1 minute = 60 seconds
1 hour = 60 minutes

A. Convert the minutes into seconds.

Questions	Working
a) 1 min = _____ s	
b) 3 min = _____ s	
c) 5 min = _____ s	
d) 7 min = _____ s	
e) 9 min = _____ s	

B. Convert the hours or (hours and minutes) into minutes.

Questions	Working
a) 1 h = _____ min	
b) 2 h 15 min = _____ min	
c) 4 h = _____ min	
d) 6 h 30 min = _____ min	
e) 8 h 52 min = _____ min	

C. Convert the minutes into hours or (hours and minutes).

Questions	Working
a) 60 min = _____ h _____ min	
b) 75 min = _____ h _____ min	
c) 90 min = _____ h _____ min	
d) 180 min = _____ h _____ min	
e) 215 min = _____ h _____ min	

D. Convert the times in 12-h clock into 24-h clock.

Times in 12-h clock	Times in 24-h clock	Working
a) 4.00 a.m.		
b) 9.20 a.m.		
c) 12.30 p.m.		
d) 3.15 p.m.		
e) 10.55 p.m.		

E. Convert the times in 24-h clock into 12-h clock.

Times in 24-h clock	Times in 12-h clock	Working
a) 23 00 h		
b) 19 45 h		
c) 14 35 h		
d) 11 00 h		
e) 00 10 h		