Time and Angle Calculations 1

Junior high school

•••••••••••••••••••• **Objective** ••••••••••••••••••••

To understand the use of the calculator when working with sexagesimal numbers — that is, numbers based on sixtieths: hours (and degrees)/minutes/seconds.

•••••••••••••• **Explanation of the activity** ••••••••••••••
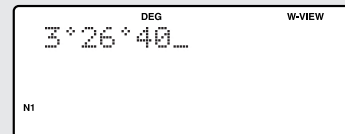
The calculator key which enables the student to easily handle mathematical operations when working with time or angles is the sexagesimal key. Identified by: D°M'S.

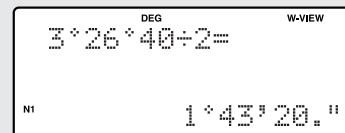•••••••••••••••• **Using the calculator** ••••••••••••••••

Time and Angles

The calculator normally handles numbers and place value based on the decimal system (base number 10). When working with time — hours, minutes and seconds — the base number is 60 (there are 60 seconds in a minute and 60 minutes in an hour). When working with angles, the same base number of 60 is used (there are 60 seconds in a minute and 60 minutes in a degree). To be able to represent time (or angle notation) and to be able to carry out calculations involving time (or angles), we need to switch the calculator to work with a number base of 60. To represent 3 hr 26 min 40sec,

Press [3] [D°M'S] [2] [6] [D°M'S] [4] [0]

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                    DEG          W-VIEW
3°26°40_


N1
```

If we now wish to know half of that time, we only have to divide by 2.

[÷] [2] [=]

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                    DEG          W-VIEW
3°26°40÷2=


N1              1°43'20."
```

Similarly we can add times (or angles) using this notation.

[1] [D°M'S] [4] [5] [D°M'S] [+] [2] [D°M'S] [3] [0] [D°M'S] [=]

1 hour 45 minutes plus 2 hours 30 minutes.
Answer: 4 hours 15 minutes.

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                    DEG          W-VIEW
1°45°+2°30°=


N1              4°15'0."
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