Year 4 & Year 5 Maths 04.02.2021

PROBLEM SOLVING DAY!

How Many Times?

Age 7 to 11
Challenge Level ★

On a digital 24 hour clock, at certain times, all the digits are consecutive (in counting order). You can count forwards or backwards.

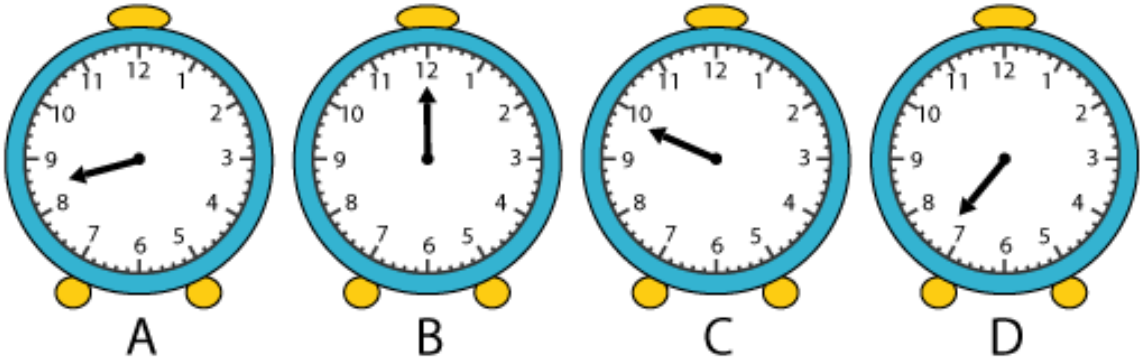
For example, 1:23 or 5:43.

How many times like this are there between midnight and 7:00?
How many are there between 7:00 and midday?
How many are there between midday and midnight?

Two Clocks

Age 7 to 11
Challenge Level ★★

Sam and Julie are friends. Both of them have rather odd clocks at home.
In Sam's bedroom there is an old alarm clock which his Dad had thrown out because it had lost its minute hand. Although it has only its small hand, Sam can still tell the time using it. He can tell the hour, such as midday. He can tell when it is time to get up, time to go to school and time to turn his light out at night.

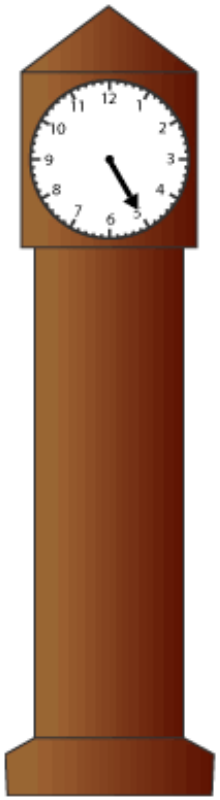


Which clock is showing it is midday?
At what time does Sam get up?
At what time does Sam go to school?
At what time is Sam supposed to turn out his light?

Two Clocks

Age 7 to 11
Challenge Level ★★

In Julie's hall there is a very old clock which lost its hour hand a long time ago.



School finishes at half past three and it takes Julie at least half an hour to get home. Sometimes she goes to the shop on the way, and sometimes she leaves school a bit later. When she first gets home Julie always looks at the clock in the hall to see what time it is.
One week these were the times she saw:

On which day was it raining so she hurried straight home?
On which day did she go to the shop to buy some sweets on the way home?
On which day did she stay at school to practise in the band?
On which day did she play with Sam for about half an hour before setting off for home?
On which day did her teacher keep the class in for five minutes?

Wonky Watches

Age 7 to 11
Challenge Level ★★

Mandeep's watch loses two minutes every hour.
Adam's watch gains one minute every hour.
They both set their watches from the radio at 6:00 a.m. then start their journeys to the airport. When they arrive (at the same time) their watches are 10 minutes apart.

At what time (the real time) did they arrive at the airport?