J19

Regional Improvement Collaborative: West Partnership
Practitioner Moderation Template (PMT)

Prior to the moderation exercise, please complete the following information and submit it to your facilitator with assessment evidence from one learner that you judge to have successfully attained the Es and Os.

Evidence Code	J19
Curriculum Area(s)	Maths
Level	2nd
Stage(s)	Primary 6 and 7

Planning

Experiences and Outcomes (highlight the relevant aspects of each E and O):

I can use and interpret electronic and paper-based timetables and schedules to plan events and activities, and make time calculations as part of my planning.

MNU 2-10a

Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others.

MNU 2-03a

Learning Intentions:

Lesson 1
- To calculate the duration of activities
- To identify which methods were used in solving a problem

Lesson 2
- To calculate the duration of activities
- To identify which methods were used in solving a problem
- To apply + and – skills to interpret data in a timetable

Lesson 3
- To apply + and – skills to identify start and finish times

Assessment

Benchmarks:

- Uses and interprets a range of electronic and paper-based timetables and calendars to plan events or activities and solve real life problems.
- Calculates durations of activities and events including situations bridging across several hours and parts of hours using both 12 hour clock and 24 hour notation.
- Applies the correct order of operations in number calculations when solving multi-step problems
- Adds and subtracts whole numbers and decimal fractions to two decimal places, within the number range 0 to 1 000 000.

Success Criteria: *Please list SC and give brief detail on how learners were involved in their creation.*

Lesson 1
- I can say how long "something" lasted in hours and minutes
- I can explain the steps/method I used to calculate the durations

Lesson 2
- I can say how long an event lasted in hours and minutes
- I can explain the steps/method I used to calculate the durations
- I can demonstrate my understanding of data by using + and – skills to answer questions

Lesson 3
- I can count on and back to find start and finish times

In the first two lessons, SC were created by the teacher. In the last lesson children were reminded how they worked out durations and how they might work out when a time started. Pupil A suggested that they count on and back.

P1 Briefly outline the context and range of quality **learning experiences** that have been planned making reference to the chosen **design principles**. Make specific reference to **breadth, challenge & application**.

Lesson 1

- Children will activate prior knowledge and skills by making a range of times on analogue clocks.
- They will then make times "2 hours after", "half an hour earlier" a given time etc.
- Teaching will then focus on calculating durations. Children will be asked if they can offer a definition of the word and once this has been established, children will be asked when they might have to know or calculate the duration of an event, journey etc.
- Children will then be shown a start time and an end time and asked to consider how we could work out the duration. Suggestions will be taken.
- I will then model using a step method/self-drawn numberline to do this. Initially durations will be less than an hour (within the same hour e.g. 11:17 – 11: 54) then they will cross over an hour. They will then be challenged by longer duration, including trickier durations such as 7:45 to 12:37 requiring pupils to not only count hours but a larger number of minutes too.
- Children will work through some durations that are displayed on the board before selecting 2 clocks and calculating the time difference between them.
- They will be encouraged to show their working and will be asked at regular points to share approaches with others.

Lesson 2

- We will begin by recapping how to calculate durations.
- We will then discuss timetables and where they have seen/used them in day to day life.
- The timetable for the activity will be shown to the pupils and simple questions will be asked to ensure that they know what information the columns/rows contain.
- The questions for the activity will enable children to apply their +/- skills as well as applying calculating durations.
- They will be encouraged to show working at all times and will be asked at regular points to share approaches with others.

Lesson 3

- We will begin by making times on analogue clocks.
- We will then look back at timetable from previous lesson and identify start and finish times.
- The LI and lesson activity will be shared with the children.
- They will be calculating the start or finish times for given activities.
- Children will then be involved in creating the success criteria for the lesson.
- Children will use clocks to make the start or finish times based on a given duration.
- Once they are able to do this, they will complete a sheet on start/finish times. Times will be written in both analogue and digital times.
- Children will then make start/finish times with a partner to allow them the chance to apply skills and to check that others are correct.

Breadth: Children will make times on clocks, as well as draw times on clocks. They will calculate both start and finish times.

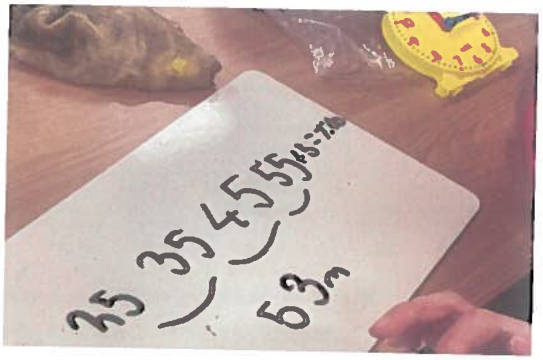
Challenge: Some of the durations last a number of hours and minutes which are challenging to count. The questions on the timetable require multi-steps.

Application: Applying skills in calculating durations in the timetable activity. Applying +/- skills across the duration activities. Applying counting on and counting back skills to work out start and finish times. Children will be asked where skills can be applied in day to day life.

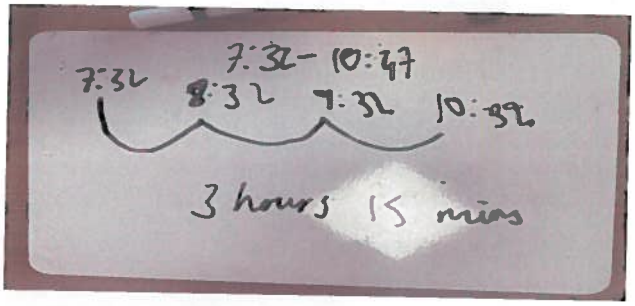
Record the planned assessment that will be gathered to meet the success criteria considering **breadth, challenge and application**.

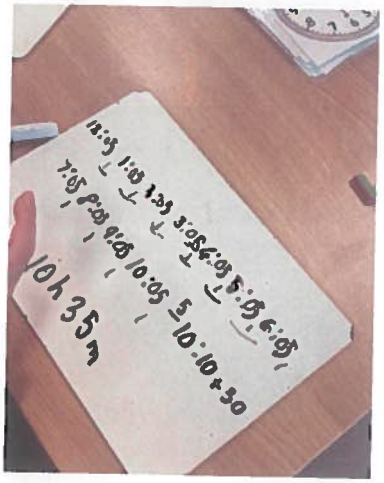
JT9

Lesson 1



Pupil A worked out different durations by using a numberline to help them count. These got more difficult as they progressed through the lesson.

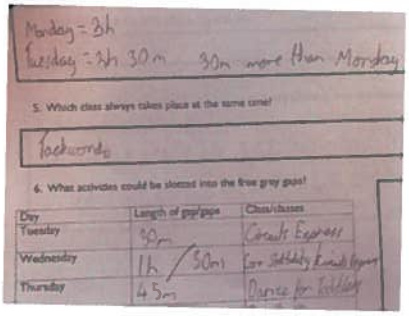


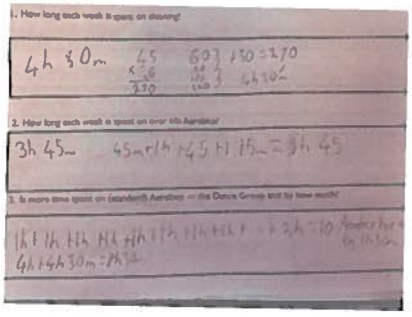


Pupil A had used clock cards (12:05 and 10:40 and chose challenge himself by making the 10:40 the later time.)

Pupil A: I counted on the hours then when I got to 10: 05 I added on 5 to get to ten past. Then I added 30 to get to 40 minutes. I got the answer 10h and 35 minutes.

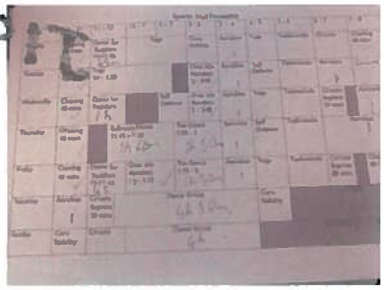
Lesson 2





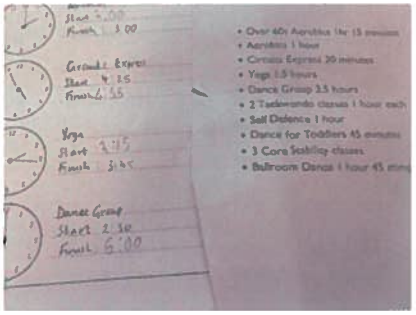
During this lesson Pupil A demonstrated a sound ability in applying + and – skills. He showed again that he can calculate durations with ease. He also showed that he is confidently able to interpret information in timetables.

During the lesson another pupil asked him for help and Pupil A said: What I did was added 45 minutes then 1 hour and then another 45 minutes which is 2hr 30 minutes. Then I added the other hour and then last added the 15 minutes. It gave me 3 hours 45 minutes.



Pupil A showed clear working throughout all lessons. This shows how he annotated the timetable to help him solve some of the problems.

Lesson 3



Pupil A working out start/finish times based on given durations. He was able to make times on both digital and analogue clocks.

Pupil A making start and finish times.

Pupil A: When I make a start time I work out first if it is more or less than an hour away. If it is more I start with counting back the hours and then the minutes. I do kind of the same for finish times but I count on.

Pupil A made the suggestion for the SC for the lesson. He explained how he would work out the start or finish time by counting on and back. He referred to using a similar technique for working out durations.

Briefly outline the oral/written **feedback** given to the pupil on progress and **next steps**, referring to the learning intention and success criteria.

All feedback was oral and at the time of teaching. Individuals were given feedback on specific activities as they carried them out. Regular reference was made to the Success Criteria. At the end of each lesson, we went over the activities as a group and discussed the answers. This was a chance for children to correct errors and to share methods with the group.

To monitor understanding children were asked to explain how they had calculated certain durations. This was again shared with the group so that those whose methods were not as sound were able to try the methods suggested by others in their next steps.

When children gave each other start or finish times to work out they were able to check if their partner had worked out the correct start/finish.

Children were asked to identify how they could apply skills in both future maths activities and in day to day life.

Pupil Voice:

What have you learned? How did you learn? What skills have you developed?

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- I learned how to work out durations more easily by breaking them down into smaller parts.
- Showing working is important to help you not make mistakes and to know and check you're right
- I learned by listening, focussing, making the times on clocks, making number/time lines and showing my working on the sheets
- I helped my friends when they were stuck
- I learned how to work out start and finish times by counting on and back
- In real life I could use it to work out how long I had left to get somewhere like the shops or work going on how long the journey is

Did the learner successfully attain the outcomes? **YES**/NO