

Learning and understanding ‘Time’

Time, a strand unit in the Measures strand is a core mathematical skill for all children. It is an essential life skill which will support them to understand and manage their daily life activities and enable them to engage independently in society. Time is a complex skill and a difficult concept for some children to learn. This is due in part to the fact that it can be neither seen nor felt. The wide range of measurement options ranging from minutes, days, weeks and months to years by tools using analogue, digital and calendar formats further complicates the learning process

Tips for teachers

Some children’s understanding of time will be centred solely on their **individual everyday life situations**; while others will develop a **broader in-depth concept of time**.

Building the foundations for learning time

Foundational skills for telling the time

- Identify numerals to 12
- Count in 1s to 12
- Count in 5s to 60
- Conceptual understanding of $\frac{1}{4}$ and $\frac{1}{2}$

Telling the time requires a **complex skill set**. Children need to **understand the concept of the passing of time and to acquire the skills for measuring time** (including analogue and digital clocks). They need to learn that time has two attributes that can be measured – **the time an event took place** and **the length of its duration**. A **firm understanding of elapsed time** is a **critical early step** in acquiring time skills. Some **basic number skills** are required before children are ready to learn how to tell the time (See foundational skills table).

Proficiency in counting on also provides a base for calculating time problems. Teaching the units of measurement e.g. seconds, minutes, hours, days etc. is an important aspect of developing a conceptual understanding of time. The active involvement of children in timing short events and in creating visuals of events of similar duration is an effective way of learning these concepts.

1 minute	10 minutes	One hour
Brush my hair	Drive to school	Swimming lesson
Put on my shoes	Circle Time	Football training

Telling the time

Use multiple representations in the context of the **Concrete, Representational, Abstract** framework to teach the procedural skill of **telling the time**. Use a real clock (analogue) to introduce the clock face (concrete stage). Follow this with a drawing/pictures of a clock face or online teaching clocks (representational/pictorial stage). Using numerals only is the final stage in the teaching sequence (abstract stage).

Concrete Representational Abstract Framework

Teaching sequence



Concrete = Use a real clock



Representational = A drawing of a clock



Abstract = Numerals only

Intervention sequence

To ensure access to learning for all, each of the three stages may be used simultaneously. Keeping in mind that the abstract level is the goal of learning, it may be useful for many children to experience learning at the concrete and representational stages simultaneously. For others, it may be useful to experience a reverse learning sequence. For example, a child experiencing difficulty at the abstract stage may benefit from visuals or representations of the clock face. Using a real clock (analogue) will provide further support and aid a deeper understanding of this difficult skill. In this digital age, replacing the concrete stage with a **virtual clock** (online, app, IWB) is a realistic option and worthy of consideration in a teaching and learning intervention.

Meaningful contexts for learning

Children's personal experiences are central to developing their conceptual understanding of time. Using these experiences in school and at home will enable children to begin to sequence familiar events in their lives e.g. *I brush my teeth after breakfast and before I go to school*. Comparing the duration of daily experiences of differing durations will support the development of the concept of elapsed time.



Home / school linkage

Incorporating informal references to time throughout the day, both at home and in school on a daily basis is an effective way of learning about time and increasing achievement for all children. When teachers and parents describe the time of an event, children become aware of various times in their daily lives e.g. *We went swimming yesterday, Tuesday is P.E. day, it's Tom's birthday tomorrow*. Incorporating the time of the event and/or its duration marks a development of this step e.g. *we eat our lunch at 1 o'clock, we have ten minutes to play at small break etc*. In this way, children begin to make associations with specific times and begin to make meaning of these times and events.



Playing **maths games** at home and in school provide fun and engaging opportunities to learn the language of time and to use time skills in daily life – using games relevant to the current learning outcomes is particularly effective. Reading stories about time to children is another very practical way of teaching the concept of time.