Measures: Time and Area

Lesson plan and teacher's notes · Grade 4 Mathematics · 1 period of 40 minutes

School	(write school name)	**Teacher**	(write name)
Date	(date)	**Class**	Grade 4
Subject	Mathematics	**Enrolment**	Boys ___ Girls ___ Total ___
Time	40 minutes	**Topic**	Measures: Time and Area

An introduction to the topic Measures. Learners see why time and area matter in daily life, meet the key terms time, area and nonstandard units, and prepare for the sub-topic Time and Area. One period of 40 minutes.

Specific outcomes

By the end of the lesson, learners should be able to:

1. Say why we measure time and area
2. Explain what time and area tell us
3. Name nonstandard units used to show area

Prior knowledge

- Learners know seconds, minutes, hours and days
- Learners have counted objects in rows and columns

Teaching and learning materials

- Grid paper or a drawn grid
- Tiles or squares of paper
- A clock or watch
- Chalk and board

References

Ministry of Education (CDC) Grade 4 Mathematics syllabus and module; 25Schools learners' note: Measures: Time and Area.

Lesson development

Stage and time	Teacher activities	Learner activities
Present **10 min**	Use the hook: imagine living in a world where time and area do not exist. How would life events be undertaken. Introduce the key terms time, area and nonstandard units. Explain that time organises activities and shows how long events last, and that area is the amount of surface covered.	Answer the hook question and listen.
Practice **15 min**	Show how seconds and minutes relate to hours and days. Show area using a grid and tiles: count the squares or tiles that cover a surface. Ask learners to find the time between two events, such as the start and end of a lesson.	Count tiles and work out time between events.
Produce **10 min**	In groups, learners cover a desk top or a mat with tiles and record the count as its area. They also say how long the activity took.	Cover a surface with tiles and record it.
Closure **5 min**	Recall the key terms time, area and nonstandard units. Say that the next lessons are about Time and Area in detail.	Recall the key terms.

Teacher's content notes

Read these before the lesson. They are what you need to know, not what to copy onto the board.

Introduction

Measurement helps us describe, compare and understand the world. Time and area are the most common measures learners meet in daily life.

Time

Time allows us to organise activities, determine the duration of events and relate smaller units such as seconds and minutes to larger ones like hours and days.

Area

Area describes the amount of surface covered by objects or spaces, often illustrated through nonstandard units such as grids and tiles.

Questions to ask during the lesson

Question	Expected answer

The teacher asks the class to imagine that nobody had clocks or bells and school could not start on time. (a) What would we not be able to organise. (b) What would we not know about events. (c) Name a unit of time.	(a) Activities. (b) How long they last. (c) Minutes, hours or days.
The teacher covers a table with square tiles and asks learners what the tiles show about the table top. (a) What is being measured. (b) What is the unit. (c) What does the count tell.	(a) Area. (b) A tile, a nonstandard unit. (c) How much surface is covered.
The teacher says a lesson started at 08:00 hours and ended at 08:40 hours and asks what we can find about it. (a) What is found. (b) What is it called. (c) What unit do we use.	(a) The time that passed. (b) Elapsed time or duration. (c) Minutes.

Worked examples for the board

Area with tiles

Step 1: Take 12 tiles. Step 2: Cover the desk top without gaps. Step 3: Count the tiles used. Step 4: Say the area is that many tiles.

Time between events

Step 1: Note when the event starts. Step 2: Note when it ends. Step 3: Find how much time passed between them.

Board plan

Write the title Measures. Write time and area side by side with what each tells us.

Measure	What it tells us
Time	How long an event lasts
Area	How much surface is covered

The finished board

Mistakes to expect

Learners often think	Put it right
Area is the distance around a shape.	Show that area is the surface covered by tiles, and the distance around is a different measure.
Time is only shown on a clock.	Ask learners for events at home that last a certain time, such as a meal or a walk to school.

Differentiation

Learners who struggle

Use a small grid first, such as 2 by 3 tiles, and count together.

Learners who finish early

Ask learners to find the area of two different surfaces in tiles and say which is larger.

Hearing or visual impairment

Pair learners who find counting hard with a helper. Give those with visual difficulty tactile tiles to place and count by touch.

No projector, no printing

Cut squares from old paper or card, or use bottle tops on a drawn grid.

If time is short

Keep the hook and counting tiles. Move the time between events to the next lesson.

Evaluation

Question or task	A correct answer shows
The teacher asks Bupe to explain why we measure time and area, using her morning walk to school and the mat on the classroom floor. (a) What does time tell about the walk. (b) What does area tell about the mat. (c) Name one nonstandard unit.	(a) How long it lasted. (b) How much surface it covers. (c) A tile or grid square.
The teacher gives Mwamba 12 tiles and a desk top to cover and asks him to report. (a) What is he finding. (b) What does he count. (c) What does the count show.	(a) Area. (b) The tiles. (c) How much surface is covered.

Homework

Njavwa's mother sweeps the yard from sunrise until the water is hot for tea, and her father covers the sitting room floor with mats. Njavwa wants to tell her friend what time and area tell. (a) What does time tell here. (b) What does area tell here. (c) Name a unit of time.

Extra practice with answers

Question	Answer
1. Mulenga covers a small mat with square cards at school to see how much surface it covers and counts 15 cards. His teacher asks him to report what he found. (a) What did he measure. (b) What unit did he use. (c) How many units did he count.	(a) Area. (b) A square card, a nonstandard unit. (c) 15.
2. Chanda's class has a reading lesson that begins when the bell rings and ends at the next bell. Her teacher asks the class to say what time tells about this lesson. (a) What does time tell. (b) Name a small unit of time. (c) Name a larger unit.	(a) How long the lesson lasted. (b) Minutes. (c) Hours.
3. Bupe's father tiles a bathroom floor with 20 tiles and a kitchen floor with 30 tiles, and Bupe compares them. (a) Which has the larger area. (b) How many more tiles. (c) What unit is used.	(a) The kitchen. (b) 10. (c) Tiles.

4. Mwamba times how long it takes him to walk from home to school using his watch and tells his teacher in minutes. (a) What is he measuring. (b) What unit does he use. (c) Is this measuring area or time.	(a) Duration. (b) Minutes. (c) Time.

Answers to the learners' check-yourself questions

1. What does time help us to do.
   Organise activities and find how long events last.
2. What does area describe.
   The amount of surface covered by an object or a space.
3. Name two small units of time.
   Seconds and minutes.
4. Name one simple unit used to show area.
   A grid square or a tile.
5. Mulenga starts sweeping the classroom at the first bell and stops when the second bell rings. The teacher asks him what time and area have to do with the job. (a) What does time tell about the sweeping. (b) What does area tell about the classroom floor. (c) Name one unit of time.
   (a) How long it lasted. (b) How much surface is covered. (c) Minutes or hours.
6. Chanda's father lays tiles on the floor of their new kitchen in Feira. Chanda counts the tiles to see how much of the floor is covered. (a) What is she measuring. (b) What simple unit is she using. (c) What does her count show.
   (a) Area. (b) A tile. (c) How much surface is covered.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: